

Department of Energy

FY 2023 Congressional Budget Request



Cybersecurity, Energy Security, and Emergency Response
Federal Energy Management Program
Grid Deployment Office
Indian Energy Policy & Programs
Loan Programs
Manufacturing & Energy Supply Chains
Office of Clean Energy Demonstrations
Petroleum Reserves
Power Marketing Administrations
State and Community Energy Programs

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Volume 3

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DEPARTMENT OF ENERGY
Appropriation Summary
(dollars in thousands)

Department of Energy	FY 2021 Enacted	FY 2022 Annualized CR	FY2023 Request	FY 2023 vs. FY 21 Enacted	
				\$	%
Department of Energy					
Energy Efficiency and Renewable Energy	2,861,760	2,861,760	4,018,885	1,157,125	40.4%
Electricity	211,720	211,720	297,386	85,666	40.5%
Cybersecurity, Energy Security, and Emergency Response	156,000	156,000	202,143	46,143	29.6%
Petroleum Reserves					
Strategic Petroleum Reserves	188,000	188,000	214,175	26,175	13.9%
Naval Petroleum & Oil Shale Reserves	13,006	13,006	13,004	-2	0.0%
SPR - Petroleum Account	1,000	1,000	8,000	7,000	700.0%
Northeast Home Heating Oil Reserves	6,500	6,500	7,000	500	7.7%
Subtotal, Petroleum Reserves	208,506	208,506	242,179	33,673	16.1%
Grid Deployment Office	-	-	90,221	90,221	N/A
Federal Energy Management Program (FEMP)	-	-	169,661	169,661	N/A
Office of Manufacturing & Energy Supply Chains (MESCC)	-	-	27,424	27,424	N/A
Office of State and Community Energy Programs (SCEP)	-	-	726,897	726,897	N/A
Nuclear Energy	1,357,800	1,357,800	1,518,460	160,660	11.8%
Nuclear Waste Disposal	27,500	27,500	10,205	-17,295	-62.9%
Fossil Energy and Carbon Management	750,000	750,000	893,160	143,160	19.1%
Uranium Enrichment Decontamination and Decommissioning Fund (UED&D)	841,000	841,000	822,421	-18,579	-2.2%
Energy Information Administration	126,800	126,800	144,480	17,680	13.9%
Non-Defense Environmental Cleanup	319,200	319,200	323,249	4,049	1.3%
Science	7,026,000	7,026,000	7,799,211	773,211	11.0%
Office of Technology Transitions	-	-	21,558	21,558	N/A
Office of Clean Energy Demonstrations	-	-	214,052	214,052	N/A
Advanced Research Project Agency-Energy	427,000	427,000	700,150	273,150	64.0%
Departmental Administration	166,000	166,000	397,203	231,203	139.3%
Indian Energy Policy and Programs	22,000	22,000	150,039	128,039	582.0%
Office of Inspector General	57,739	57,739	106,808	49,069	85.0%
Loan Programs					
Title 17 - Innovative Technology Loan Guarantee Program (1)	29,000	29,000	168,206	139,206	480.0%
Advanced Technology Vehicles Manufacturing Loan Program	5,000	5,000	9,800	4,800	96.0%
Tribal Energy Loan Guarantee Program	2,000	2,000	1,860	-140	-7.0%
Subtotal, Loan Programs	36,000	36,000	179,866	143,866	399.6%
Subtotal, Energy Programs	14,595,025	14,595,025	19,055,658	4,460,633	30.6%
National Nuclear Security Administration					
Federal Salaries and Expenses	443,200	443,200	496,400	53,200	12.0%
Weapons Activities	15,345,000	15,345,000	16,486,298	1,141,298	7.4%
Defense Nuclear Nonproliferation	2,260,000	2,260,000	2,346,257	86,257	3.8%
Naval Reactors	1,684,000	1,684,000	2,081,445	397,445	23.6%
National Nuclear Security Administration	19,732,200	19,732,200	21,410,400	1,678,200	8.5%
Environmental and Other Defense Activities					
Defense Environmental Cleanup	6,426,000	6,426,000	6,914,532	488,532	7.6%
Defense UED&D Fund (2)	-	-	-	-	N/A
Other Defense Activities	920,000	920,000	978,351	58,351	6.3%
Subtotal, Environmental and Other Defense Activities	7,346,000	7,346,000	7,892,883	546,883	7.4%
Nuclear Energy (050)	149,800	149,800	156,600	6,800	4.5%
Subtotal, Atomic Energy Defense Activities	27,228,000	27,228,000	29,459,883	2,231,883	8.2%
Power Marketing Administrations					
Southeastern Power Administration (SEPA)	-	-	-	-	N/A
Southwestern Power Administration (SWPA)	10,400	10,400	10,608	208	2.0%
Western Area Power Administration	89,372	89,372	98,732	9,360	10.5%
Falcon and Amistad Operating and Maintenance Fund	228	228	228	0	0.0%
Colorado River Basins Marketing Fund	-21,400	-21,400	-8,568	12,832	-60.0%
Subtotal, Power Marketing Administrations	78,600	78,600	101,000	22,400	28.5%
Subtotal, Department of Energy	41,901,625	41,901,625	48,616,541	6,714,916	16.0%
Federal Energy Regulatory Commission	-	-	-	-	N/A
Receipts and Offsets					
Excess Fees and Recoveries, FERC	-9,000	-9,000	-9,000	-	0.0%
Title XVII Loan Guar. Prog Section 1703 Negative Credit Subsidy Receipts	-	-	-7,000	-7,000	N/A
UED&D Fund Discretionary Payments	-	-	-417,000	-417,000	N/A
Receipts and offsets	-9,000	-9,000	-433,000	-424,000	4711.1%
Department of Energy	41,892,625	41,892,625	48,183,541	6,290,916	15.0%

DEPARTMENT OF ENERGY
 Appropriation Summary
 (dollars in thousands)

Department of Energy	FY 2021 Enacted	FY 2022 Annualized CR	FY2023 Request	FY 2023 vs. FY 21 Enacted	
				\$	%
DOE Budget Function					
<i>NNSA Defense (050) Total</i>	19,732,200	19,732,200	21,410,400	1,678,200	8.5%
<i>Non-NNSA Defense Total</i>	7,495,800	7,495,800	8,049,483	553,683	7.4%
<i>Defense (050)</i>	27,228,000	27,228,000	29,459,883	2,231,883	8.2%
<i>Science (250)</i>	7,026,000	7,026,000	7,799,211	773,211	11.0%
<i>Energy (270)</i>	7,638,625	7,638,625	10,924,447	3,285,822	43.0%
<i>Non-Defense (Non-050)</i>	14,664,625	14,664,625	18,723,658	4,059,033	27.7%

(1) The FY 2021 and FY 2022 Continuing Resolution entries for Title 17 and ATVM do not reflect rescissions of prior year emergency balances enacted in Public Law 116-260. Including the rescissions, the final amounts for Title 17 and ATVM would be -\$363 million and -\$1,903 million, respectively.

(2) In the FY 2023 Request, Defense Uranium Decontamination and Decommissioning is requested within the Defense Environmental Cleanup Appropriation.

**Cybersecurity,
Energy Security, and
Emergency Response**

**Cybersecurity,
Energy Security, and
Emergency Response**

**Cybersecurity, Energy Security, and Emergency Response
Proposed Appropriation Language**

For Department of Energy expenses including the purchase, construction, and acquisition of plant and capital equipment, and other expenses necessary for energy sector cybersecurity, energy security, and emergency response activities in carrying out the purposes of the Department of Energy Organization Act (42 U.S.C. 7101 et seq.), including the acquisition or condemnation of any real property or any facility or for plant or facility acquisition, construction, or expansion, \$202,143,000, to remain available until expended: Provided, That of such amount, \$25,123,000 shall be available until September 30, 2024, for program direction. (*Energy and Water Development and Related Agencies Appropriations Act, 2021.*)

Public Law Authorizations

Public Law 95-91, "Department of Energy Organization Act", 1977

Public Law 109-58, "Energy Policy Act of 2005"

Public Law 110-140, "Energy Independence and Security Act, 2007"

Public Law 114-94, "Fixing America's Surface Transportation Act", 2015

Public Law 110-246, "Division Z Energy Act", 2020

**Cybersecurity, Energy Security, and Emergency Response
(\$K)**

FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request
156,000	156,000	202,143

Overview

The U.S. Department of Energy’s (DOE’s) Office of Cybersecurity, Energy Security, and Emergency Response (CESER) leads the Department’s efforts to secure U.S. energy infrastructure against all hazards, reduce the risks of and impacts from cyber events and other disruptive events, and assist with restoration activities. CESER is the Office responsible for DOE’s responsibilities as lead agency for Emergency Support Function #12 (Energy), or ESF #12, under the National Response Framework, Sector Risk Management agency (SRMA) for the energy sector per the 2002 Homeland Security Act (as amended), and the Sector Specific Agency (SSA) for the Energy Sector per the 2015 Fixing America’s Surface Transportation Act. In those roles, DOE leads national efforts to enhance the preparedness, resiliency, and recovery of the U.S. energy infrastructure from all threats and hazards.

The energy sector plays a critical role across Federal, State, and local jurisdictions, and with nearly all other critical infrastructures relying on the power and fuel to operate. CESER programs work in an integrated manner with industry, state, local, tribal, and territorial (SLTT) governments, as well as with federal departments and agencies, to enhance the resilience - the ability to withstand, maintain critical function and quickly recover from disruptions - and security - the ability to reduce risks in the protection system assets and critical functions from unauthorized access and actions - of the U.S. energy infrastructure for all Americans. Secure and resilient energy infrastructure is critical to U.S. national security and economic security.

CESER leads, coordinates, and provides technical expertise related to cybersecurity and resilience across the various DOE offices to ensure that all of DOE’s efforts are designed or executed with these in mind. For example, CESER is implementing its cybersecurity-by-design strategy, in which cybersecurity considerations are incorporated into new clean energy technologies as they are developed by the applied energy offices. CESER also provides indispensable industry-specific technical assistance across the intra-agency that enables the administration to guide critical decisions aimed at ensuring reliability, resilience, and security of national energy infrastructure, as well as assisting our international partners, as necessary.

Within the appropriation, CESER funds will:

- Develop and deliver game-changing tools and technologies to help the energy sector, including owners and operators, manufacturers, state and local energy officials, third-party integrators, and others, to secure and reduce risks to critical infrastructure from cyber, physical, and natural hazard threats. As the U.S. moves to a carbon-pollution free energy sector by 2035, CESER will work closely with clean energy providers and integrators to ensure that cybersecurity and resilience are core components. Finally, DOE will continue to strengthen the supply chain security and resilience of the sector.
- Lead public and private-sector partnerships to inform energy sector security and resilience policies at the Federal and State levels. Further, CESER will support capacity-building through activities such as exercises, training, technical assistance, and workforce development initiatives.
- Expand its risk analysis capabilities, which will inform the develop of policies, tools and technologies, and response and recovery efforts across CESER, the Department, and the broader sector.
- Lead Emergency preparedness and response, supporting the energy sector, to pursue enhancements to national efforts, in cooperation with public and private-sector stakeholders, for preparedness, resilience, and recovery of U.S. energy infrastructure from all threats and hazards.

Highlights and Major Changes in the FY 2023 Budget Request

- **Information Sharing, Partnerships, and Exercises** (\$28,000,000), whose functions are performed under the Preparedness, Policy, and Risk Analysis Division, supports energy sector security and resilience through coordination with government and industry partners. These efforts will advance the Department’s efforts to support the SLTT community and energy industry in preparing for, mitigating, and recovering from all threats and hazards facing the U.S.

energy sector. CESER will achieve this through information sharing, risk assessments, capacity building in planning and resilience, and targeted training and exercises. The requested increase will support CESER's increased workload given the rapidly-evolving cyber threats that all industries are facing as a result of an increase in connectedness of the lives of Americans. It will also support exciting new workforce- and supply chain-related activities that CESER is leading, and it will provide resources for studies of, and support to, economically disadvantaged communities for response and recovery. This increase will also support training for the next generation workforce on energy sector risks and developing the workforce through training and exercises.

- **Risk Management Tools and Technologies** (\$125,020,000) supports the development of tools and technologies to address cyber, physical, natural hazard, and other threats to the U.S. energy sector. CESER will invest in frameworks, tools, and technologies to identify, protect, prevent, mitigate, and respond to threats to energy systems. This will include establishing an Energy Cyber Sense program, which will consist of a range of supply chain security efforts as the Cyber Testing for Resilient Industrial Control Systems (CyTRICS) initiative, development of a framework for energy sector software bill of materials (SBOMs) and hardware bill of materials (HBOMs), and other similar efforts. Risk Management Tools and Technologies (RMT) will develop and maintain the Environment for Analysis of Geo-Located Energy Information (EAGLE) situational awareness monitoring program. This line of effort will also continue to lead cross-cutting cybersecurity research, development, and deployment efforts and coordinate cybersecurity across DOE's applied energy and science offices. This program will also continue to address threats such as geomagnetic disturbances (GMD) and electromagnetic pulse (EMP). Finally, it will include a renewed focus on developing tools and technologies to mitigate risks facing the energy sector from increasing hurricanes, wildfires, flooding, and other natural hazards.
- **Response and Restoration** (\$24,000,000) coordinates a national effort to ensure that the sector is able to respond and restore from emergencies resulting from natural hazards, cyber-attacks, physical attacks, and other threats facing energy infrastructure. This line of effort lead DOE and CESER's roles as ESF #12 – Energy and SRMA/SSA in support of Presidential Policy Directive-41 United States Cyber Incident Coordination. CESER will work with partners in the energy sector to assess the impacts of disasters on local and regional energy infrastructure; provide situational awareness updates to Federal, state, and private sector partners; facilitate legal and regulatory waivers to accelerate restoration of damaged energy systems; and provide technical expertise on energy damage assessment, restoration, mitigation, and logistical assistance. CESER analytical capabilities to assess and mitigate risks and threats to energy infrastructure has proven critical during events such Hurricane Ida, Colonial Pipeline ransomware cyber-attack, and others. These efforts are in close partnership with agencies such as the FEMA, DHS/CISA, FBI, and the Intelligence Community.

FY 2021 Key Accomplishments

CESER made notable progress this fiscal year that is rooted in the strategic partnerships it has fostered across the energy sector in executing its mission. In 2021, CESER:

- Continued to ensure the reliability of critical energy infrastructure during the COVID-19 pandemic, in close coordination with the States and energy system owners and operators, and facilitated the response as lead agency for Emergency Support Function #12 to multiple nationwide and regional energy disruptions and emergencies in close coordination with interagency partners and state and local governments.
- Launched the 100-Day Electricity Sector Industrial Control Systems Cybersecurity Initiative with DHS and the National Security Council and gained commitments from more than 155 electric utility companies (serving more than 75 million American customers) to advance technologies that will make the industrial control systems that operate the nation's electricity operations more cyber-secure.
- Executed various funding activities including a Funding Opportunity Announcement for \$8M to conduct university-based research and development. Setting up agreements with industry to provide technical support and training to municipal and cooperative utilities to deploy detection and monitoring technologies to improve visibility on operational networks.
- Awarded \$4 million for four National Laboratory projects focused on developing and deploying solutions to risks posed by EMP attacks and naturally occurring GMD events.

- Continued to enhance the Department-wide cyber vulnerability testing program, leveraging unparalleled technical expertise from the National Labs, to assess digital components in energy systems. The program has participation agreements with critical energy sector manufacturers and asset owners and is testing components of priority policy and security importance.
- Completed 20 research and development projects and launched seven new projects along with transitioning seven technologies into practice at energy companies.
- Expanded the Operational Technology (OT) Defender Fellowship, offering middle- and senior-level OT security managers in the U.S. energy sector an opportunity to more fully understand the cyber strategies and tactics that adversarial state and non-state actors use in targeting U.S. energy infrastructure.
- Continued engagement with the Securing Energy Infrastructure Executive Task Force to convene key stakeholders from all levels of government, industry, academia, and the National Labs to jointly address priority technical vulnerabilities in energy systems.
- Identified use cases and developed tools to enhance detection of malicious cyber activity in OT networks and expanded tools to include application in the wind industry.
- Released Version 2.0 of the C2M2, which better addresses new technologies like cloud, mobile, and artificial intelligence and evolving threats such as ransomware and supply chain risks. The update was guided by the Energy Sector C2M2 Working Group, which included 145 information technology and OT cybersecurity experts representing 77 energy sector and cybersecurity organizations.
- Hosted “Conquer the Hill - Adventurer Edition” competitions as part of CyberForce, an element of DOE’s workforce development program. CyberForce started in 2016 as an annual collegiate level competition where teams defend simulated energy infrastructure from cyber-attacks. Since 2016, the main event, CyberForce Competition® has grown from eight competing teams in 2016 to one hundred teams in 2019 and more than 200 individual students competing virtually in 2020. The next CyberForce Competition will be held in November 2021.
- Responded to the severe winter storms in Texas in February 2021, Colonial Pipeline cyber-attack in May 2021, Hurricane Ida, and other events throughout the year.

**Cybersecurity, Energy Security, and Emergency Response
Funding by Congressional Control (\$K)
(Comparable)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
Cybersecurity for Energy Delivery Systems	96,000	0	0	-96,000	-100.0%
Infrastructure Security and Energy Restoration	0	0	0	0	N/A
Information Sharing, Partnerships, and Exercises	11,402	0	28,000	+16,598	+145.6%
Risk Management Tools & Technologies	30,615	95,000	125,020	+94,405	+308.4%
Response and Restoration	5,983	48,000	24,000	+18,017	+301.1%
Program Direction	12,000	13,000	25,123	+13,123	+109.4%
Total, Cybersecurity, Energy Security, and Emergency Response	156,000	156,000	202,143	+46,143	+29.6%
Federal Full Time Equivalent Employees (FTEs)	21	44	93	+72	+342.9%
Additional FE FTEs at NETL supporting CESER ^a	9	9	11	+2	+22.2%
Total CESER-funded FTEs	30	53	104	+74	+246.7%

^a CESER funds FTEs at FE's National Energy Technology Laboratory who are FE employees, but support CESER activities. The FTEs are in FE's FTE totals and are not included in the CESER's FTE totals shown on the "Federal Full Time Equivalent Employees (FTEs)" line.

**Cybersecurity, Energy Security, and Emergency Response
Funding by Congressional Control (\$K)
(Non-Comparable)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
Cybersecurity for Energy Delivery Systems	96,000	96,000	0	-96,000	-100.0%
Infrastructure Security and Energy Restoration	48,000	48,000	0	-48,000	-100.0%
Information Sharing, Partnerships, and Exercises	0	0	28,000	+28,000	+100.0%
Risk Management Tools & Technologies	0	0	125,020	+125,020	+100.0%
Response and Restoration	0	0	24,000	24,000	+100.0%
Program Direction	12,000	12,000	25,123	+13,123	+109.4%
Total, Cybersecurity, Energy Security, and Emergency Response	156,000	156,000	202,143	+46,143	+29.6%
Federal Full Time Equivalent Employees (FTEs)	21	44	93	+72	+342.9%
Additional FE FTEs at NETL supporting CESER ^a	9	9	11	+2	+22.2%
Total CESER-funded FTEs	30	53	104	+74	+246.7%

SBIR/STTR:

- FY 2021 Enacted: SBIR/STTR: \$1077
- FY 2023 Request: SBIR/STTR: \$1301

Bipartisan Infrastructure Law and Programmatic Realignment

CESER was appropriated funds through the Bipartisan Infrastructure Law (BIL) (P.L. 117-58). In FY 2023, CESER will continue to execute the following funded BIL programs:

- Rural and Municipal Utility Advanced Cybersecurity Grant and Technical Assistance Program (Section 40124)
- Cybersecurity for The Energy Sector Research, Development, And Demonstration Program (Section 40125(b))

^a CESER funds FTEs at FE's National Energy Technology Laboratory who are FE employees, but support CESER activities. The FTEs are in FE's FTE totals and are not included in the CESER's FTE totals shown on the "Federal Full Time Equivalent Employees (FTEs)" line.

- Energy Sector Operational Support for Cyberresilience Program (Section 40125(c)) (note that funds from this provision will be provided all in FY2022)

In addition to the funded BIL provisions listed above, CESER will also continue to support other offices where resources are made available to CESER for implementation of programs where CESER was not appropriated specific funding, including State Energy Plans (Section 40108), Modeling and Assessing Energy Infrastructure Risk/Advanced Energy Security Program to Secure Energy Networks (Section 40125(d)), and Cybersecurity Plan (Section 40126). Finally, CESER will continue its existing work on existing programs that have been funded under regular appropriations under Enhancing Grid Security Through Public-Private Partnerships (Section 40121), Energy Cyber Sense (Section 40122), and Incentives for Advanced Cyber Technology Investment (Section 40123).

Future Years Energy Program (FYEP)

(\$K)

	FY 2023 Request	FY 2024	FY 2025	FY 2026	FY 2027
Cybersecurity, Energy Security, and Emergency Response	\$202,143	\$207,000	\$211,000	\$216,000	\$221,000

Major Outyear Priorities and Assumptions

In the FY 2012 Consolidated Appropriations Act (P.L. 112-74), Congress directed the Department to include a future-years energy program (FYEP) in subsequent requests that reflects the proposed appropriations for five years. This FYEP shows outyear funding for each account for FY 2024 - FY 2027. The outyear funding levels use the growth rates from and match the outyear account totals published in the FY 2023 President’s Budget for both the 050 and non-050 accounts. Actual future budget request levels will be determined as part of the annual budget process.

CESER priorities in the outyears include the following:

- Invest in industry and state capacity building to manage risk
- Establish training and exercises to address real-world threats
- Overcome cyber workforce challenges
- Promote energy justice through studies of economically disadvantaged communities for response and recovery
- Development of risk management tools, and advanced threat information sharing tools for sector wide awareness
- Expanded regional approach to emergency response efforts
- Development of Cyber-Physical emergency response expertise

Risk Management Tools and Technologies (RMT)

Overview

The U.S. Department of Energy (DOE) is the Sector Risk Management Agency (SRMA) for the energy sector and the Office of Cybersecurity, Energy Security, and Emergency Response (CESER) is responsible for carrying out the duties and responsibilities of that role, which include identifying, analyzing, and addressing risks to energy systems. CESER's Risk Management Tools and Technologies (RMT) division works closely with the energy sector to reduce risks from cyber and non-cyber hazards by researching, developing, demonstrating, and deploying tools and technologies that will be essential to fostering a clean and secure energy supply chain.

RMT will partner with National Laboratories, private sector, and academia to advance tool development, demonstration, and deployment projects in the private sector. These initiatives will leverage emerging technologies and techniques for critical energy infrastructure security to test and identify vulnerabilities; monitor, detect, and protect critical energy infrastructure and networks from threats; and enable automated assessment, situational awareness, and response to the threats to the sector. RMT will develop tools and technologies that incorporate rapid dissemination and processing of energy sector data for identification and characterization of threats for intelligence analysis, assessments, products, and services in unclassified and classified environments required to support CESER's operational cyber and energy security responsibilities. These specialized tools will use analytics to understand, enrich, and fuse data and enable intelligence-driven action to improve resilience for the energy sector. Further, RMT will work to address risks through tool development and intra-agency coordination on risks such as wildfires, hurricanes, and other natural hazards. The dynamic threat landscape, climate crisis, advances in energy system technologies, and the use of legacy devices in an aging infrastructure underscore the importance of this program.

The DOE is instituting cybersecurity by design approach across DOE's science and applied energy offices. This approach means that offices that perform research and development of energy delivery system will integrate cybersecurity requirements in their R&D activities. CESER will coordinate this integration and continue research and development for securing legacy and emerging energy delivery systems where there are unmet needs (e.g., addressing cybersecurity needs stemming from the proliferation of EV infrastructure and other distributed energy resources). Improved coordination and integration of cybersecurity R&D will also enable CESER to prioritize Research, Development and Demonstration of tools and technologies that apply across multiple energy systems (e.g., renewables, fossil, nuclear domains) and focus on activities such as encryption, forensics, and monitoring.

Highlights of the FY 2023 Budget Request

Working closely with energy sector and government partners, the budget request for CESER RMT supports a more economically competitive, environmentally responsible, secure, and resilient U.S. energy infrastructure focusing on following activities:

- **ADVANCE TOOLS TO SUPPORT CYBER THREAT SITUATIONAL AWARENESS AND ANALYTICS (\$45M)**
 - **R&D on Cyber Tools and Technologies for Energy Systems (\$35M)**

Research, develop, demonstrate and transition to practice next generation cyber tools that provide industry protection, monitoring, detection, response, containment, forensics, and recovery capabilities. Furthermore, these efforts will leverage grid and pipeline operational data and physics of energy delivery to inform owners and operators of anomalous cyber activities on their networks. These efforts will primarily be executed through funding opportunity announcements (FOA) that we require energy company, academia, national laboratory, and/or manufacturers.

Situational Awareness & Analytics (\$10M) Research, develop, demonstrate, deploy, and transition to practice next generation cyber situational awareness tools and technologies that enable information sharing, and U.S. Government awareness of cyber threats through correlation with intelligence community information.

- **RISK MITIGATION TOOLS AND SITUATIONAL AWARENESS FOR NON-CYBER THREATS AND HAZARDS (\$30M)**

- **EAGLE-I, Situational Awareness & Response Capabilities (\$10M)**

To ensure that CESER can fulfill DOE's responsibilities as the SRMA for the energy sector and as the coordinating agency for Emergency Support Function (ESF) #12, CESER needs to maintain continuous situational awareness of threats and incidents impacting, or potentially impacting, U.S. energy systems, as well as capabilities to support timely preparedness, response, and recovery efforts. The necessary capabilities include modeling of potential power outages from severe weather (e.g. hurricanes) and remote sensing to quickly identify damaged energy sector infrastructure. To fulfill these requirements, the department uses EAGLE-I Platform to provide situational awareness across the energy sector and collaboration during a response.

The FY 2023 budget request will enable CESER to continue to develop and maintain the EAGLE-I platform, including efforts to expand near real-time situational awareness of both electricity and oil and natural gas systems, as well the development and integration of new and/or update capabilities, including situational awareness of retail fuel availability, as well as remote sensing and modeling to support energy sector preparedness, response, and recovery effort related to wildfire, flooding, and no-notice incidents (e.g. earthquakes). Efforts will also focus on ensure existing capabilities are seamlessly integrated into EAGLE-I and support awareness of interdependent impacts across FEMA Lifeline Additionally, the EAGLE-I Platform is being advanced to enhanced collaboration between deployed responders, personnel at DOE Headquarters, as well as industry, state, and interagency partners. Finally, CESER will work to integrate relevant situational awareness from CESER cyber programs into EAGLE-I to ensure that EAGLE-I supports response efforts across all-hazards.

- **EMP and GMD (\$5M)**

DOE will continue to engage in efforts to address the risks associated with electromagnetic pulse (EMP) and geomagnetic disturbances (GMD). These will include activities such as performing EMP vulnerability assessments of critical assets and identifying and estimating the cost of several mitigation options for each asset; performing EMP and GMD system assessments; testing critical generation components (setting up future testing on the most expensive critical components) to determine withstands to EMP and GMD; and partnering with industry (through cost shares) to field deploy an increased number of innovative cost-effective mitigation options for EMP and GMD based on results of vulnerability assessments.

- **Non-Cyber Risk Mitigation Tools and Technologies (\$15M)**

Additionally, RMT will tackle other risks and hazards to the energy sector due to the impacts of climate change such as wildfires, severe hurricanes, flooding, and droughts. RMT will focus on the development of tools and risk characterization effort for early detection and mitigation from these types of risks to energy infrastructure. Finally, the RMT work will also address physical threats to infrastructure such as the Metcalf Substation physical attack.

- **SUPPLY CHAIN RISK MANAGEMENT (\$30M)**

- **Cybersecurity Testing for Resilient Industrial Control Systems (CyTRICS) (\$20M)**

CyTRICS is DOE's program for cybersecurity supply chain vulnerability testing, digital subcomponent enumeration, forensic analysis, and mitigation. CyTRICS partners across energy sector manufacturers and asset owners to apply classified threat intelligence, identify high priority operational technology (OT) components, perform expert testing, share information about vulnerabilities in the digital supply chain, and inform improvements in component design and manufacturing. CyTRICS leverages best-in-class test facilities and analytic capabilities at six DOE National

Laboratories (INL, PNNL, SNL, NREL, ORNL, and LLNL) and strategic partnerships with technology developers, manufacturers, asset owners and operators, and interagency partners.

FY2023 funding will enable RMT and CESER to more broadly address supply chain risks to the energy sector as part of the Energy Cyber Sense program that was required as part of the Infrastructure Investment and Jobs Act (IIJA). This will include efforts such as the development of a software bill of materials (SBOM) and hardware bill of materials framework, furthering efforts related to Cyber-Informed Engineering (CIE), integrating supply chain research and testing with CESER's joint collaboration on threat analysis through the Energy Threat Analysis Center Pilot efforts, etc.

- **Cybersecurity of Distributed Energy Resources (\$5M)**

In FY2023, CESER will continue to prioritize efforts to improve the cybersecurity of distributed energy resources (DERs) and DER management systems. As introduction of DERs into the grid continues to accelerate, energy sector stakeholders must increase investment in the cybersecurity of those components (e.g., solar, storage, controllable loads, etc. based on risk and technology landscape). In some communities across the U.S., DERs will begin to supply 100% of generation by 2030; consequently, it is a priority to research and address cyber risks and the impacts to broader resilience to the grid.

- **Cybersecurity of Electric Vehicle Charging Infrastructure (\$5M)**

In FY2023, CESER's RMT program will continue its work to improve the cybersecurity of electric vehicle supply equipment (EV) charging infrastructure. The industry-led, whole-of-government-supported proliferation of EV charging infrastructure is a once in a generation opportunity to build cybersecurity and cyber resilience into a system that will serve Americans for decades. Therefore, it is critical for CESER's RMT program to understand the cyber risks, potential mitigation measures, and plausibility for implementation in communities. This can be affected through establishment of a program, continuing the pilot and demonstration of cybersecurity measures directed by FY 2021 appropriations, and developing a research and development strategy to pursue cybersecurity within this multi-program, multi-agency infrastructure deployment.

- **CYBER RISK ASSESSMENTS, FRAMEWORKS, AND R&D COORDINATION (\$20M)**

- **Cyber-Informed Engineering and Consequence-Driven Cyber-Informed Engineering (CCE) (\$5M)**

CESER/Risk Management Tools and Technology will continue maturing cyber resilience of the nation's most critical energy infrastructure through engineering protections by way of CIE and CCE efforts, which has proven immensely successful in helping energy companies secure and guarantee critical functions even in the face of successful adversary cyber intrusions. CCE includes a crown jewel analysis and links it with known threat actor behavior/reporting to help energy companies better prioritize and protect those critical functions. CESER will implement recommendations from the National Cyber Informed Engineering (CIE) Strategy. CIE includes foundational principles to help lead the nation's effort to integrate cybersecurity and engineering practices. Widespread adoption of these security and engineering principles in both the private and public sectors, as well as in academia to develop the cyber/engineering workforce of the future, is critical to ensure hardening of the nation's energy infrastructure against catastrophic cyber-enabled sabotage.

- **Tools leveraging methodologies and frameworks (\$5M)**

CESER/Risk Management Tools and Technology will leverage methodologies like the Cybersecurity for Operational Technology Environment (CyOTE) to further research and innovation to enable early detection of anomalous behavior and threats in OT network.

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- **Quantification of Cyber Risk and Cyber Risk Profiles for Critical Systems and Technologies (\$5M)**

Develop and transition to practice tools, guidance, and practices that help energy organizations' understanding and management of cybersecurity risk to systems, people, assets, data, and capabilities. CESER will advance cybersecurity risk profiles for cloud environments and other applications. CESER will also work with energy system owners and operators to develop cyber risk quantification efforts, and support energy sector Cybersecurity Capability Maturity Model (C2M2) user community with guidance and facilitated cyber maturity evaluations.

- **Grid Modernization Laboratory Consortium and Department-Wide Coordination on Cyber R&D (\$5M)**
Support Grid Modernization Laboratory Consortium (GMLC) initiatives. GMLC employs an integrated approach to ensure DOE funded study efforts are efficiently coordinated for the greatest return on taxpayer dollars. CESER has a central role in the Department's plan for integration of cybersecurity activities across CESER will coordinate with DOE offices through the GMLC to engage experts and resources at DOE National Laboratories.

**Risk Management Tools & Technologies
Funding (\$K)**

	FY 2021 Enacted	FY 2022 Enacted Annualized CR^a	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
Risk Management Tools & Technologies					
Advance Tools to Support Cyber Threat Situational Awareness and Analytics	59,925	59,925	45,000	-14,925	-24.9%
Risk Management Tools and Situational Awareness for Non-Cyber Threats and Hazards	11,295	11,295	30,000	+18,705	+165.6%
Supply Chain Risk Management	8,395	8,395	30,000	+21,605	+257.4%
Cyber Risk Assessments, Frameworks, and R&D Coordination	47,000	47,000	20,020	-26,980	-57.4%
Total, Risk Management Tools & Technologies	126,615	126,615	125,020	-1,595	-1.3%

SBIR/STTR:

- FY 2021 Enacted: SBIR/STTR: \$0
- FY 2023 Request: SBIR/STTR: \$1,301

^a FY 2022 amounts shown reflect the P.L. 117–95 continuing resolution (CR) level annualized to a full year. These amounts are shown only at the “congressional control” level and above; below that level, a dash (–) is shown.

Risk Management Tools & Technologies
Explanation of Major Changes (\$K)

FY 2023 Request vs FY 2021 Enacted

<ul style="list-style-type: none"> • Advance Tools to Support Cyber Threat Situational Awareness and Analytics - R&D focus areas are informed by risk and threat landscape. Coordination and integration of cybersecurity by design will enable prioritization of cross-cutting tools and technologies and any unmet needs for legacy or emerging energy delivery systems. • Risk Management Tools and Situational Awareness for Non-Cyber Threats and Hazards - Expands the depth and scope of work to research, develop, demonstrate, deploy, and transition to practice tools and technologies. • Supply Chain Risk Management - More broadly address supply chain risks to the energy sector as part of the Energy Cyber Sense program that was required as part of the Infrastructure Investment and Jobs Act (IIJA). • Cyber Risk Assessments, Frameworks, and R&D Coordination - DarkNet transitioned to the Office of Electricity. Initial research has been completed and methodology published, activities such as CyOTE will transition to implementation across the DOE enterprise. • Total, Risk Management Tools & Technologies 	<p>-14,925</p> <p>+18,705</p> <p>+21,605</p> <p>-26,980</p> <hr/> <p>-1,595</p>
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**Risk Management Tools and Technologies
Funding**

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
Risk Management Tools and Technologies \$126,615,000	\$125,020,000	-\$1,595
<i>Advance Tools to Support Cyber Threat Situational Awareness and Analytics \$59,925,000</i>	<i>\$45,000,000</i>	<i>-\$14,925</i>
<ul style="list-style-type: none"> • Research and develop cybersecure energy delivery systems • Advance threat information sharing initiatives to additional utilities to broaden the base to operationalize lessons learned • Continue to develop and deploy analytics for emerging adversary tools, techniques, and procedures under OT-focused initiatives • Appropriation included congressionally required \$14M for Academia focused R&D activities 	<ul style="list-style-type: none"> • Work with National Labs, industry, and academia to research, develop, demonstrate, deploy and transition to practice next generation cyber risk management technology and tools for broad adoption in energy industry 	<ul style="list-style-type: none"> • R&D focus areas are informed by risk and threat landscape. Coordination and integration of cybersecurity by design will enable prioritization of cross-cutting tools and technologies and any unmet needs for legacy or emerging energy delivery systems • Reduced funding will result in fewer research and development awards

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
<i>Risk Management Tools and Situational Awareness for Non-Cyber Threats and Hazards</i> \$11,295,000	\$30,000,000	+\$18,705,000
<ul style="list-style-type: none"> Work with National Labs, industry, and academia to research, develop, demonstrate, deploy, and transition to practice tools and technologies that reduce or mitigate risks from non-cyber risks such as physical hazards, wildfires, floods, impacts of climate change, EMP and GMD. This work includes outlays to maintain the EAGLE-I platform and develop/ update capabilities for situational awareness and enhanced collaboration between deployed responders, personnel at DOE Headquarters, as well as industry, state, and interagency partners 	<ul style="list-style-type: none"> Expand scope of work with National Labs, industry, and academia to research, develop, demonstrate, deploy, and transition to practice tools and technologies that reduce or mitigate risks from non-cyber risks such as physical hazards, wildfires, floods, impacts of climate change, EMP and GMD. This work includes outlays to maintain the EAGLE-I platform and develop/ update capabilities for situational awareness and enhanced collaboration between deployed responders, personnel at DOE Headquarters, as well as industry, state, and interagency partners 	<ul style="list-style-type: none"> Increase expands the depth and scope of work to research, develop, demonstrate, deploy, and transition to practice tools and technologies
<i>Supply Chain Risk Management</i> \$8,395,000	\$30,000,000	+\$21,605,000
<ul style="list-style-type: none"> Establish Energy Cyber Sense program including research, testing, analysis, and reporting to address cyber supply chain risks in the energy sector. Support government policies and orders to strengthen sector supply chain risk management capabilities and expand reach of supply chain risk management initiatives. This work includes demonstration of security practices for emerging technologies such as in Distributed Energy Resources or other key parts of the energy sector 	<ul style="list-style-type: none"> Expand scope of work with Energy Cyber Sense program including research, testing, analysis, and reporting to address cyber supply chain risks in the energy sector. Support government policies and orders to strengthen sector supply chain risk management capabilities and expand reach of supply chain risk management initiatives. This work includes demonstration of security practices for emerging technologies such as in Distributed Energy Resources or other key parts of the energy sector 	<ul style="list-style-type: none"> The increase will more broadly address supply chain risks to the energy sector as part of the Energy Cyber Sense program that was required as part of the Infrastructure Investment and Jobs Act (IIJA)

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
<i>Cyber Risk Assessments, Frameworks, and R&D Coordination \$47,000,000</i>	<i>\$20,020,000</i>	<i>-\$26,980,000</i>
<ul style="list-style-type: none"> Continue the Advanced Threat Mitigation initiatives such as CYOTE supporting cybersecurity projects that use advanced and emerging technologies to protect and secure the energy delivery systems Development and maintenance of the Cybersecurity Capability Maturity Model (C2M2) to improve transparency, cybersecurity preparedness and provide a better understanding of the cybersecurity capabilities, gaps and challenges facing utilities Appropriation included congressionally required \$10M for DarkNet, \$5M for Consequence based Cyber Informed Engineering, and \$2M for a pilot on electric vehicle charging facilities 	<ul style="list-style-type: none"> Develop, increase adoption, and measure adoption and impact of cybersecurity frameworks and methodologies in the energy sector. Work across applied energy and science offices to integrate cybersecurity into the R&D across DOE enterprise to ensure cybersecurity is designed in from ideation to execution. This work includes development of additional resources, profiles, and tools to support C2M2, CSF, and CYOTE user community 	<ul style="list-style-type: none"> DarkNet transitioned to the Office of Electricity Initial research has been completed and methodology published, activities such as CyOTE will transition to implementation across the DOE enterprise

Response and Restoration

Overview

The U.S. Department of Energy (DOE) is the coordinating agency for Emergency Support Function (ESF) #12, under the National Response Framework, and the Sector Risk Management Agency (SRMA) for the energy sector, pursuant to Presidential Policy Directive (PPD) 21, PPD 41, Executive Order 13636, and the FAST Act. The Office of Cybersecurity, Energy Security, and Emergency Response's (CESER) Response and Restoration division leads efforts related to ESF-12, PPD-41, and other energy sector response-related functions for the Department.

As the lead for ESF #12, CESER works with partners to: assess the impacts of a disaster on local and regional energy infrastructure; provide situational awareness updates to Federal, state, and private sector partners; facilitate legal and regulatory waivers to accelerate restoration of damaged energy systems; provide technical expertise on energy damage assessment, restoration, and logistical assistance. During an incident requiring a coordinated federal response, the Response and Restoration program activates the Energy Response Organization to manage ESF #12 and SRMA activities, including deployment of responders and sector engagement. DOE also serves as a primary agency for the Infrastructure Systems Recovery Support Function, under the National Disaster Recovery Framework. Within DOE, these responsibilities are managed by the Response and Restoration program in CESER, which supports preparedness, response, restoration, and recovery efforts in the energy sector, across federal, state, local, territorial, and tribal governments, private industry, trade associations, and non-governmental organizations.

To fulfill the Department's ESF #12 responsibilities, CESER trains and coordinates a cadre of volunteer responders from across DOE. Upon activation, DOE deploys responders to the FEMA National Response Coordination Center, FEMA Regional Response Coordination Centers, and/or FEMA Joint Field Offices and State Emergency Operations Centers. Each FEMA Region is represented by a Regional Coordinator, who maintains regular contact and supports planning efforts with regional and state counterparts. Additionally, a subset of responders is part of the ESF #12 Catastrophic Incident Response Team (CIRT) to respond to catastrophic incidents and remote locations.

In addition, the Response and Restoration division coordinates DOE's response to cyber incidents impacting or potentially impacting the energy sector that require a coordinated response with industry and interagency partners. The Department follows the National Cyber Incident Response Plan, representing the energy sector as the SRMA and supporting the Department of Homeland Security's (DHS) government-wide approach. DOE can support DHS Cyber Assessment Teams, Federal Bureau of Investigation (FBI) and industry with subject matter expertise when needed, leveraging the world-class capabilities of the DOE National Laboratories.

To ensure that CESER can fulfill DOE's responsibilities, the Response and Restoration division maintains and develops capabilities to coordinate response operations, enhance situational awareness, and provide analysis of threats and incidents affecting the energy sector, including cyber during steady state and response operations. Overall, the Response and Restoration division works closely with the electricity and oil and natural gas industries; other Federal agencies; State, Local, Tribal, and Territorial communities; and DOE's National Laboratories to advance national energy security and to prepare for, respond to, and recover from evolving threats and incidents.

Highlights of the FY 2023 Budget Request

The FY 2023 Request will enable CESER to maintain existing capabilities, while continuing to improve operational response coordination and collaboration; situational awareness across the energy sector; and analysis of threats and incidents affecting the sector. Additionally, the FY 2023 Request supports further development of CESER's cyber incident analysis and response capabilities as the Nation's energy infrastructure continues to face evolving and increasing threats.

ALL-HAZARDS INCIDENT RESPONSE, REGIONAL SUPPORT, AND SITUATIONAL AWARENESS (\$12M)

CESER must maintain an emergency all-hazards response baseline capability that ensures adequate resources and training are available to facilitate the reestablishment of damaged energy systems and components with potential impact to national and economic security. To fulfill this mission, CESER trains and coordinates a cadre of approximately 120 volunteer responders, from across DOE. The cadre is organized into Regional Response Teams, aligned to the 10 FEMA regions, each led by an experienced Regional Coordinator. This concept has enabled CESER to respond to multiple, simultaneous, and

back-to-back events. Long term commitment to the regionalization concept as an organizing structure for deployment coordination and annual refresher training will solidify current response capabilities, and provide a foundation for the expansion of skills, tools and products that improve responder effectiveness and add value and energy expertise at the regional, state, and local levels.

The FY 2023 Budget Request will enable the Response and Restoration division to maintain baseline activities while continuing to develop long term relationships at the regional level, a day-to-day regional presence to work side-by-side with regional FEMA, interagency, and states partners during steady state operations: enabling more efficient response capabilities. The Response and Restoration division will also continue to recruit, train, and expand the Catastrophic Incident Response Team cadre to better support FEMA's Incident Management and Assessment Teams, and provide technical expertise in damage assessment and energy system restoration; specifically, to support island, earthquake, and other catastrophic response and restoration requiring federal assistance. The program will also build a retired reserve cadre – recruited from recently retired ESF#12 responders – available to support long term, remote, and/or catastrophic incidents that require additional subject matter expertise and support

The FY 2023 Budget Request will continue the expansion of the Office's Situational Awareness Team, and feasibility study to develop the concept of operations and physical build out of a 24/7 CESER Watch Office at Headquarters, which will provide continuous monitoring, initial incident reporting, and communication coordination with field elements, deployed personnel, and interagency partners. The CESER Watch will also serve as the primary point of contact to manage information, requests, and assist with response activations on behalf of the U.S. energy sector.

CYBER INCIDENT RESPONSE AND CYBER SITUATIONAL AWARENESS (\$12M)

CESER is the lead for cybersecurity for the energy sector as the SRMA, pursuant to the FAST Act, Executive Order 13636, and Presidential Policy Directive-41 (PPD-41). PPD-41 and interagency cyber response documents that were developed in partnership with Department of Homeland Security (DHS)/Cybersecurity and Infrastructure Security Agency (CISA), FBI, and other agencies that outline the roles of sector specific agencies and the ability to provide subject matter expertise during cyber response efforts. To fulfill DOE's responsibilities, CESER will continue to develop and expand capabilities commensurate with the threat landscape, to support the energy sector, to provide cyber response technical assistance and expertise unique to the energy sector. Additionally, as the Nation's energy infrastructure faces consciously evolving threats that require interdisciplinary expertise and coordination, DOE is looking to develop capabilities that will enable collaboration across multiple DOE Offices, leveraging subject matter experts from the DOE National Labs, as well as industry and interagency partners to help ensure the security of the energy sector and to support the DHS Joint Collaborative Environment to look at threats across other critical infrastructure sectors, such as water and communications. The FY 2023 budget will expand the current responder training program to focus on a deeper knowledge of energy management systems (e.g., distributed energy resources, grid supervisory control and data acquisition controls, etc.). Additionally, CESER will continue work to establish a mechanism to quickly leverage technical resources and capability of DOE's National Laboratories, Power Marketing Administrations, and other resources to be utilized during a cyber incident response that requires federal support.

Further, the FY 2023 Budget will continue enhancement of energy sector cyber threat situational awareness and build upon the results of a cybersecurity mission needs and capabilities study undertaken in FY 2021. Leveraging this enhanced cyber situational awareness, CESER will continue to support Analysis of Risks in the Energy Sector Reports for provide timely and actionable cybersecurity information to trusted industry partners. Additionally, CESER will strengthen its cyber situational awareness capabilities and processes so that it can pull in and share data streams from and to energy sector owners and operators, other departments, and agencies (e.g., DHS/CISA, FBI), the intelligence community, along with data from CESER's other tools such as CyTRICS, NAERM, CRISP, etc. In FY 2023, CESER will establish the Energy Threat Analysis Center (ETAC), in partnership with CISA Joint Cyber Defense Collaborative, to advance industry-government threat situational awareness, mitigation, and response. The ETAC goals will be: 1) establish a government and industry operational collaborative environment to develop actionable operational intelligence and offer meaningful threat mitigation advice and actions to change the trajectory of our collective (government and industry) defense, response, and resilience of the U.S. energy sector; 2) enable an information exchange among government and industry to address a shared problem, a process to connect the dots for national security, public health, safety and economy; 3) improve detailed understanding of national security risks associated with the energy sector which are or could be exploited by adversaries, including nation-states; 4)

achieve a deeper understanding of threat actor tactics, capabilities, and activities with potential to impact systemic risks to the energy sector; and 5) facilitate increased intelligence-sharing between industry and government of actual acute threat activity, including incidents, in a secure setting, both physical and virtual, to ensure U.S. energy security and resilience for all Americans.

**Response and Restoration
Funding (\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR^a	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
Response and Restoration					
All-Hazards Incident Response, Regional Support, and Situational Awareness	5,683	5,683	12,000	+6,317	+111.2%
Cyber Incident Response and Cyber Situational Awareness	300	300	12,000	+11,700	+3,900.0%
Total, Response and Restoration	5,983	5,983	24,000	+18,017	+301.1%

^a FY 2022 amounts shown reflect the P.L. 117–95 continuing resolution (CR) level annualized to a full year. These amounts are shown only at the “congressional control” level and above; below that level, a dash (–) is shown.

Response and Restoration
Explanation of Major Changes (\$K)

	FY 2023 Request vs FY 2021 Enacted
• All-Hazards Incident Response, Regional Support, and Situational Awareness	+12,000
- Sustain current response capabilities while expanding regional steady state and response presence in accordance with the 2021 Regional Response Operations Strategic Plan (2021-2026). Continue the development of collaboration tools and products to provide enhanced energy sector situational awareness to interagency and industry partners, and the CESER Response Team. Further develop operational concepts for a CESER Watch Office, and conduct feasibility studies for a physical facility	
• Cyber Incident Response and Cyber Situational Awareness	+12,000
- Continue implementation of recommendations made in the 2021 CESER Cybersecurity Needs and Capabilities Assessment, a third-party study that identified 27 recommendations to improve CESER’s cybersecurity and cyber incident response posture. Continue development of the ETAC operational concepts and begin feasibility studies for an ETAC facility. Identify and equip dedicated CESER classified space for cyber response operations	
Total, Response and Restoration	+24,000

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
Response and Restoration \$5,983,000	\$24,000,000	+\$18,017,000
<i>All-Hazards Incident Response, Regional Support, and Situational Awareness \$5,683,000</i>	<i>\$12,000,000</i>	<i>+\$6,317,000</i>
<ul style="list-style-type: none"> • <i>ESF 12 Responsibilities:</i> Maintain and expand cadre of trained volunteer emergency responders, focusing efforts on: <ul style="list-style-type: none"> ○ Conduct a strategic review of the Response and Restoration Program to guide programmatic improvements over a 3-5 year period ○ Expanding regionalization of emergency response cadre to ensure established regional relationships and understanding ○ Develop critical incident response responder team to provide initial support challenging incidents and incidents in remote locations ○ Educating responders to evolving adversarial threats and energy sector interdependencies ○ Maintain availability of DOE to provide subject matter expertise, from DOE’s Power Marketing Administrations • <i>Situational Awareness and Emergency Response Tools:</i> Enhance EAGLE-I™ to expand near real-time situational awareness capabilities and make it platform for integration energy infrastructure situational awareness tools • Support development, operationalization, and integration of modeling and tools, such as predicted power outage restoration timelines and remote sensing to provide damage assessments to further improve response efforts 	<ul style="list-style-type: none"> • Maintain current capabilities and expand the regional knowledge, skills, and abilities of the ESF#12 cadre of trained volunteer emergency responders, focusing efforts on hurricanes, wildfires, earthquakes, and cyber-attacks. • Focus on expanding training and capability to support remote and rural location responses, educating responders on regionally specific energy infrastructure in order to improve emergency response to ever changing energy and cross sector interdependencies. Expand access to available subject matter expertise across the DOE enterprise, to include the National Labs • Continued focus on and commitment to CESER’s Regionalization model by expanding the Office’s regional operations and Catastrophic Incident Response Team (CIRT). Expand steady-state operational capabilities to support regional and state day-to-day operations and preparedness efforts • Develop the operational concepts for a dedicated CESER Watch Office to provide daily energy sector monitoring, reporting, and support to emergency response operations • Fully understand and integrate CESER’s emergency authorities (DPA, Jones Act, FPA 202c) into standard operational processes and procedures 	<ul style="list-style-type: none"> • Increasing emergency responder capabilities and steady state regional working relationships to improve response effectiveness in an all hazards environment through enhanced multi modal training, situational awareness products and tools, and continuity of the Federal missions and mission essential functions

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
<i>Cyber Incident Response and Cyber Situational Awareness \$300,000</i>	\$12,000,000	+\$11,700,000
<ul style="list-style-type: none"> Conduct a third party assessment of CESER’s cybersecurity mission needs and capabilities focused on current capacity to conduct energy sector cyber incident response, CESER roles and responsibilities, and capability needs to support the cyber response mission 	<ul style="list-style-type: none"> Funding will build on DOE’s ESF#12 catastrophic response capabilities to add cybersecurity and cyber incident response capacity that better supports energy sector entities impacted by a cyber event. The enhanced capability will also improve and expand DOE’s support to the Federal Government’s coordinated cyber incident response as mandated by PPD-41 and the National Cyber Incident Response Plan Implement the findings and recommendations in the 2021 CESER Cybersecurity Needs and Capabilities Study, through contract support, looking at the national lab capabilities to support cyber incident response, and conducting follow on feasibility studies for physical watch offices and secure space to support cyber operations. Develop Energy Sector Cybersecurity Response capabilities that can support CISA and FBI cyber incident response teams to provide energy sector subject matter expertise about energy systems. <i>Identify</i> and equip dedicated CESER classified space to support cyber response operations Deploying a feasibility study for a physical ETAC capabilities 	<ul style="list-style-type: none"> The change included implementing corrections to the findings and recommendations in the 2021 CESER Cybersecurity Needs and Capabilities Study, which focused on identifying and clarifying cyber roles and responsibilities, and leveraging capability across CESER and the DOE enterprise to support cyber response operations In 2021, a study was commissioned, focusing on identifying and clarifying cyber roles and responsibilities, and leveraging capability across CESER and the DOE enterprise to support cyber response operations. In 2023, focus will change to implementing the suggested changes In 2021, initial operational concepts for the ETAC were developed, and in 2023, the concept will be expanded to include a feasibility study A reorganization is included in FY 2023, including the addition of ETAC

Information Sharing, Partnerships, and Exercises

Overview

The U.S. energy sector is characterized by widely diverse infrastructure components, a multifaceted operational environment, and complex ownership and regulatory structures. As one of the priority enabling functions upon which all other critical infrastructure sectors rely, the Nation's security, public health and safety, and economy depend on energy. With the sector facing evolving threats and risks, such as natural disaster events, cyber and physical security threats, aging/failing infrastructure, and the potential shortage of a skilled workforce, this budget is aimed at assessing security risk, securing critical infrastructure, enhancing infrastructure resilience, sharing information, and promoting learning and adaptation through strategic partnerships with the energy sector. The hazards to the energy system, including cyber, can only be effectively addressed through partnerships across all levels of government, private industry, and academia. The Office of Cybersecurity, Energy Security, and Emergency Response's (CESER) Preparedness, Policy, and Risk Analysis division at CESER is focused on cultivating these trusted partnerships to share information, manage risk, and increase the security and resilience of critical infrastructure in the energy sector.

CESER's partnerships—with energy owners and operators, manufacturers, and trade associations; with other Federal agencies; across States, local governments, tribes, territories (SLTT); with academia and the National Labs; and with the energy information sharing and analysis centers—help to advance collective preparedness and resilience to the growing landscape of threats, technology developments, and energy system trends. This budget is directed at: 1) continuing to build capacity and guidance for energy sector and SLTT partners to advance critical energy infrastructure security and resilience from all-hazards; and 2) managing key DOE authorities and responsibilities, including serving as the Sector Risk Management Agency (SRMA) for the energy sector and fulfilling DOE responsibilities under the Fixing America's Surface Transportation Act and the National Defense Authorization Act. True public-private partnership is integral to meeting CESER's cybersecurity, energy security, and emergency response objectives. As the SRMA for energy, the Department is currently assessing the following risks that are a priority for the energy sector, including, but not limited to, hurricanes/severe weather, wildfires, earthquakes, cyber-attacks and electromagnetic interference.

This program is the point of entry for SLTT and energy private sector partners when collaborating with DOE and the Federal Government on critical infrastructure protection and resilience, energy security, and emergency response and recovery. The Department is placing emphasis on supporting Section 9 companies^a, Defense Critical Electric Infrastructure companies, investor owned, municipal, and cooperative utilities in addition to SLTT energy entities.

Highlights of the FY 2023 Budget Request

The budget request supports a continued expansion of energy sector security and resilience in coordination with government and industry partners. By seeding public-private partnerships and cultivating trusted relationships, this program will advance the Department's efforts to support SLTT and industry in preparing for, mitigating, and recovering from all threats and hazards facing the U.S. energy sector through information sharing, risk assessments, capacity building in planning and resilience, and targeted training and exercises. The budget request is focused on the President's priorities for combating climate change, creating clean energy jobs, and promoting energy justice. Activities will include studies of economically disadvantaged and underserved communities for emergency preparedness, response and recovery, the vulnerability of energy assets, and training, exercise, and workforce development opportunities.

Training the next generation workforce on energy sector risks and developing a cyber-educated workforce will be an overall emphasis in both Planning, Preparedness, and Resilience and Exercises and Training activities.

^a The Department of Homeland Security (DHS), in coordination with relevant SRMAs, annually identifies and maintains a list of critical infrastructure entities that meet the criteria specified in Executive Order (EO) 13636, *Improving Critical Infrastructure Cybersecurity*, Section 9(a) ("Section 9 entities") utilizing a risk-based approach. Section 9 entities are defined as "critical infrastructure where a cybersecurity incident could reasonably result in catastrophic regional or national effects on public health or safety, economic security, or national security."

Planning, Preparedness, and Resilience (\$19M)

- **Manage Energy Sector Risk (\$10M):** Establish new and build on existing mechanisms to work with energy companies to identify systemically important entities and perform intelligence-informed risk analysis, in close coordination with other DOE offices and through the National Labs, as well as in coordination with other Federal agencies and critical infrastructure sectors. As the SRMA energy sector lead, CESER will develop a robust capacity to better support the energy sector (e.g., owners and operators, trade organizations, subsector coordinating councils, SLTT, Section 9) need for a cohesive and coordinated set of resources and provide for more collaborative engagement opportunities to inform risk analysis. CESER will prepare and provide action-oriented, intelligence-informed threat briefings to support energy system investment and decision-making. CESER will also establish new coordination and relationship-building opportunities to identify and eliminate barriers to energy security information sharing across governments and industry.
- **Post Disaster Recovery and Resilience (\$2M):** When a major disaster strikes, the restoration of energy systems depends on the planning and coordinated response effectiveness of local, State, multi-State, tribal, territorial, and national responses. In FY 2023, the SLTT Energy Assurance and Resilience program will continue to support technical assistance engagement for coordinated risk analysis and energy security and resilience planning with States and territories to improve preparedness to all hazards, including hurricanes, wildfires, fuel emergencies, and cyber events, and impacts from the growing threat of climate change. CESER will expand, aggregate, and deliver analyzed data to SLTT energy and emergency officials via dynamic risk analyses that build on lessons learned from exercises and real-world energy disruptions and informs SLTT policy and investment decisions. CESER will support communities during the recovery phase following major disasters by facilitating access to resources that will help to build resilience, protect critical energy infrastructure, and reduce or avoid impacts from future incidents.
- **Provide State Energy Security Planning Technical Assistance (\$5M):** Mitigating the impacts of climate change and cyber-attacks on critical energy infrastructure is a priority for state governments. Cybersecurity is also top of mind for many states who are aggressively pursuing new renewable distributed energy resources deployments. Enabling states to analyze and manage risk, coordinate across state agencies and with industry, and providing guidance and training to support these activities will bolster the states' energy security capabilities and national security overall. CESER will support state energy security and assurance planning through technical assistance and guidance on planning, designing and implementing robust energy security programs, and by continuously updating security planning training. CESER will also incorporate inclusion and energy justice as a key component in resources developed. These methods, approaches will enable SLTT governments to enhance and exercise their energy assurance plans and regulatory models, incorporating cybersecurity, hardening, and other resilience measures and incentives at the local level.
- **Defense Critical Electric Infrastructure (DCEI) (\$2M):** The DCEI program will identify, evaluate, prioritize, and assist in developing executable strategies to strengthen the energy infrastructure systems that supply critical infrastructure needed to ensure continuity of defense activities following severe natural and manmade disasters. Specifically, these investments will enable an increased confidence that necessary energy resources will be available to designated Defense Critical Infrastructure. The DCEI program's objective is to strengthen energy infrastructure systems for national security purposes. In FY 2023, CESER will continue to implement DOE's DCEI strategic plan by applying successful methods validated in FY 2021 to a larger group of critical defense facilities, increasing national defense and security readiness against power supply interruptions.

Training and Exercises (\$9M)

Exercises are critical to planning and evaluating a coordinated response to emergencies. CESER prepares for all hazards that could affect energy delivery alongside federal, state, and local government entities, partners from the oil and natural gas and the electricity subsectors, and representatives from other critical infrastructure sectors. By conducting senior-level policy discussions and operationally focused tactical preparedness exercises, CESER is preparing the nation to effectively mitigate any threat to reliable energy. After each exercise, CESER undergoes improvement planning based on a thorough after-action review of the actions or discussions from the exercise. The lessons learned from the improvement planning are integrated into CESER's emergency response plans and procedures as well as into future exercises for training and validation. Exercise results are shared with participants through after-action reports, providing participants with ways in

which they can augment their own preparedness plans. These recommendations often include ways in which participants can better utilize mutual assistance networks and government resources, should an incident affect the energy infrastructure.

- **Cyber Exercises, Training, and Cyber Workforce Development (\$7M):** In support of CESER’s energy disruption and emergency response efforts from a cyber incident, this program will conduct cyber exercises with interagency stakeholders, SLTT partners, and industry through leading events such as Liberty Eclipse, as well as by providing technical training such as CyberStrike. CESER will expand other training opportunities to offer middle and senior-level OT security managers in the U.S. energy sector an opportunity to more fully understand the cyber strategies and tactics that adversaries use in targeting U.S. energy infrastructure. CESER will design training, exercises and experimentation focused on cyber grid incident recognition, cyber mitigation and electric restoration, and resilience, leveraging a testbed of power and industrial control system assets in conjunction with the energy sector asset owners and the National Labs. CESER will also continue to expand the CyberForce Competition to include at least three events throughout the year and enhance the ability for CyberForce participants to network and look at potential internship and job opportunities. The CyberForce Competition works with U.S. universities, colleges, and technical schools across the country to advance cybersecurity in the OT/industrial controls systems environment to train the next generation of energy sector cybersecurity experts in the U.S. The program includes an annual cyber defense competition and “Conquer the Hill” skill-based cybersecurity competitions.
- **Non-cyber Exercises and Training (\$2M):** In support of the response to natural disasters and other non-cyber physical incidents, CESER will host exercises with interagency stakeholders, SLTT partners and industry that focus on the impacts to energy infrastructure from terrorism, hurricanes, wildfires, earthquakes, etc. Clear Path is CESER’s annual cornerstone all-hazards energy security and resilience exercise series. The Clear Path series is the principal forum for enhancing the energy sector’s ability to work together in response to catastrophic incidents. The series examines the energy sector’s response and restoration roles, responsibilities, and plans and procedures following a major incident, stressing interdependencies between multiple critical infrastructure sectors. Each year, Clear Path presents response officials from a diverse array of challenging exercise scenarios, allowing them to build upon and validate improvements made in response to lessons learned from previous exercises and real-world incidents. CESER strives to ensure that each iteration of Clear Path presents an increasingly realistic and challenging experience for all participants. The continued success of Clear Path is predicated on the resolute support and involvement from federal, state, and local municipality government partners, cross-sector entities, and private sector organizations. To date, CESER has engaged over 1200 energy sector and cross-infrastructure sector partners.

**Information Sharing, Partnerships and Exercises
Funding (\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
Information Sharing, Partnerships and Exercises					
Planning, Preparedness, and Resilience	7,322	0	19,000	+11,678	+159.0%
Training and Exercises	4,080	0	9,000	+4,920	+120.6%
Total, Information Sharing, Partnerships and Exercises	11,402	0	28,000	+16,598	+145.6%

SBIR/STTR:

FY 2021 Enacted: SBIR/STTR: \$0

FY 2023 Request: SBIR/STTR: \$0

**Information Sharing, Partnerships and Exercises
Explanation of Major Changes (\$K)**

	FY 2023 Request vs FY 2021 Enacted
• Planning, Preparedness, and Resilience - Identify systemically important entities and perform intelligence-informed risk analysis, prepare and provide action-oriented, intelligence-informed threat briefings and eliminate barriers to government-industry information sharing and operational coordination, inform state and industry, including DCEI, investment decisions and improve mitigation and emergency through dynamic risk analyses, and provide technical assistance in support of state energy security planning.	+19,000
• Training and Exercises - Conduct internal and external exercises with the interagency, SLTT governments, and industry on cyber and natural hazards, provide cybersecurity training for operational technology and industrial control systems, and expand the scope of the CyberForce Competition.	+9,000
Total, Information Sharing, Partnerships and Exercises	+28,000

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
Information Sharing, Partnerships and Exercises \$11,402,000	\$28,000,000	+\$16,598,000
<i>Planning, Preparedness, and Resilience</i> \$7,322,000	\$19,000,000	+\$11,678,000
<ul style="list-style-type: none"> • Develop grid resilience tools and analyses to help State electricity officials promote prudent, strategic decision-making • Provide technical assistance to Federal, SLTT and regional entities to address key challenges in the energy system • Continue to implement regulatory responsibilities and evaluate regulatory reform to reduce federal burden • Support for technical assistance work to provide stakeholders an in-depth understanding of the resilience of the electric grid and related infrastructure • Provide institutional support to potential critical electric infrastructure investments that address the vulnerabilities of the North American energy system 	<ul style="list-style-type: none"> • Identify systemically important entities and perform intelligence-informed risk analysis, prepare and provide action-oriented, intelligence-informed threat briefings and eliminate barriers to government-industry information sharing and operational coordination, inform state and industry, including DCEI, investment decisions and improve mitigation and emergency through dynamic risk analyses, and provide technical assistance in support of state energy security planning 	<ul style="list-style-type: none"> • Scale DOE’s DCEI risk efforts by applying successful methods incubated and validated in FY22 to more critical defense facilities from DOE’s designated list, increasing national defense and security readiness against power supply interruptions. Expand, aggregate, and deliver intelligence-informed and actionable data and analysis to SLTT energy and emergency officials and industry via dynamic risk analyses • Incorporate inclusion and energy justice in methods, approaches and tools that will enable SLTT governments to enhance and exercise energy assurance plans and regulatory models, incorporating cybersecurity, hardening, and other resilience measures and incentives • Expand CyberForce competition and scale CyberStrike workshops through virtual and in person opportunities. Support the President’s Cup Cybersecurity Competition. Expand cyber exercises and training by enhancing and leveraging existing testbed environments which can provide realistic simulation capabilities, allowing for advanced training and efficiencies
<i>Training and Exercises</i> \$4,080,000	\$9,000,000	+\$4,920,000

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
<ul style="list-style-type: none"> • Exercises, Competitions and Workshops: Conduct Clear Path and Liberty Eclipse exercises with a focus on the connection between emergency response of a cyber nature and consequence management <ul style="list-style-type: none"> ▪ Continue to host the CyberForce energy sector cyber defense and “Conquer the Hill” competitions and CyberStrike workshops ▪ Support the President’s Cup Cybersecurity Competition 	<ul style="list-style-type: none"> • Training and Exercises: Conduct internal and external exercises with the interagency, SLTT governments, and industry on cyber and natural hazards, provide cybersecurity training for operational technology and industrial control systems, and expand the scope of the CyberForce Competition 	<p>Through exercise efforts such as Clear Path and Liberty Eclipse, examine improvement items from past preparedness events and real world responses.</p> <p>Continue leveraging simulated cyber environments (at National Labs) to enhance SESER and industry partner’s collective response capabilities to cyber-attack scenarios.</p> <p>Develop cyber training opportunities for energy sector partners to increase awareness on current activities, techniques, and procedures.</p> <p>Expands the CyberForce Competition to include a multi-day event, mini competitions, virtual career fair, and lead-up activities in support of energy sector workforce development.</p>

Program Direction

Overview

Program Direction provides for costs associated with federal workforce staffing to include salaries, benefits, travel, training, and other related expenses. Program Direction funds also provide for costs associated with contractor services managed under the direction of the federal workforce. Contractors support the Office of Cybersecurity, Energy Security, and Emergency Response (CESER) mission.

Salaries and Benefits support federal employees who provide executive management, programmatic oversight, and analysis for the effective implementation of the CESER program. This includes staff at Headquarters and the National Energy Technology Laboratory (NETL) to support the overall mission of CESER. While CESER funds NETL staff within its budget, the NETL Federal employees are included within the full-time equivalent (FTE) total within the Fossil Energy Research and Development account.

CESER federal staff provide oversight for a wide range of energy security, resilience, cyber, and emergency response functions and programs. These programs and functions include: guiding a multi-million dollar Risk Management Tools (RMT) program; staffing and managing the Department's all hazard energy sector emergency response function (ESF #12); training and coordinating a cadre of more than 100 volunteer energy sector emergency responders; overseeing annual programs of energy sector exercises, workshops, interagency and industry engagement, and coordination with states and localities before and during emergencies; and the development of reports and analyses on threats and hazards to the energy sector. Increased need is seen in the area of cyber preparedness and incident response. CESER is working closely with the Office of the Chief Information Officer, the Office of the Chief Human Capital officer (OCHO) and other program offices across DOE to provide cyber pay incentives, similar to those already implemented at the Cybersecurity and Infrastructure Security Agency (CISA) to retain and recruit highly-skilled cyber talent at the Department. The cybersecurity field is in high demand across both public and private sectors. The Federal government salary in this filed is significantly lower than the industry standard; we are finding it increasingly more difficult to recruit and retain qualified candidates. Federal staff also support crosscutting functions which include budget, procurement, contracts, and human resources.

When Presidential Disaster Declarations are issued, CESER staff are called upon under the National Response Framework. Trained staff provide support for Federal Emergency Management Agency (FEMA) Emergency Support Function 12 (ESF #12) missions. Some of these trained responders may be ordinarily employed in other parts of DOE, such as the Office of Energy Efficiency and Renewable Energy or the Power Marketing Administrations. During ESF #12 activations CESER is reimbursed by FEMA for overtime expenses while CESER responder base pay is funded from the CESER Program Direction budget.

CESER in coordination with the OCHO has developed a detailed staffing plan to identify staffing requirements across the organization. CESER's staffing efforts will continue to focus on building core capabilities of partnerships with industry as the energy sector SRMA, capability building in the energy sector, risk analysis of cyber, physical, and natural hazard risks, and emergency response activities. Further, the program direction will help strengthen CESER's budget and human resources staff to growing programmatic activities.

Travel includes transportation, per diem, and incidental expenses allowing CESER to effectively deliver on its mission. Major drivers of travel include the need to oversee development and deployment of risk management tools, programs, and projects in the field; attendance at industry, interagency and regional state government energy sector emergency response coordination meetings; and conducting emergency response training for responders in conjunction with Department of Homeland Security regional response centers. FEMA reimburses DOE for all travel associated with Presidential Disaster Declarations. CESER will continue to utilize virtual meetings and training to achieve savings.

Support Services include contractor support directed by Federal staff to perform administrative tasks and provide analysis to management. Additional support services may include support from Internship programs utilized through Oak Ridge Institute for Science and Education and DOE's Minority Educational Institution Student Partnership Program assignments.

Other Related Expenses include equipment purchases, upgrades, and replacements, office furniture, commercial credit card purchases using simplified acquisition procedures when possible, and miscellaneous expenditures.

Highlights of the FY 2023 Budget Request

This budget request provides additional FTEs for support mission critical work.

**Program Direction
Funding (\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
Program Direction Summary					
Washington Headquarters					
Salaries and Benefits	6,459	6,459	15,195	+8,736	+135.3%
Travel	347	347	295	-52	-15.0%
Support Services	1,430	1,430	4,211	+2781	+194.5%
Other Related Expenses	876	876	1,763	+887	+101.3%
Total, Washington Headquarters	9,112	9,112	21,464	+12,352	+135.6%
National Energy Technology Laboratory					
Salaries and Benefits	1,282	1,282	1,754	+472	+36.8%
Travel	120	120	116	-4	-3.3%
Support Services	438	438	333	-105	-24.0%
Other Related Expenses	1,048	1,048	1,456	+408	+38.9%
Total, National Energy Technology Laboratory	2,888	2,888	3,659	771	+26.7%
Total Program Direction					
Salaries and Benefits	7,741	7,741	16,949	+9,208	+119.0%
Travel	467	467	411	-56	-12.0%
Support Services	1,868	1,868	4,544	+2,676	+143.3%
Other Related Expenses	1,924	1,924	3,219	+1,295	+67.3%
Total, Program Direction	12,000	12,000	25,123	+13,123	+109.4%
Federal FTEs	21	44	93	+72	+342.9%
Additional FE FTEs at NETL supporting CESER ^a	9	9	11	+2	+22.2%
Total CESER-funded FTEs	30	53	104	+74	+246.7%

^a CESER funds FTEs at FE's National Energy Technology Laboratory who support CESER activities. These 10.4 FTEs are in FE's FTE totals and are not included in the CESER FTE totals shown on the "Federal FTEs" line.

FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
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Support Services and Other Related Expenses

Support Services

Technical Support	1,180	1,180	3,906	+2,726	+231.0%
Management Support	688	688	638	-50	-7.3%
Total, Support Services	1,868	1,868	4,544	+2,676	+143.3%

Other Related Expenses

Other Services	701	701	1,580	+879	+125.4%
EITS Desktop Services	223	223	639	+416	+186.5%
WCF	1,000	1,000	1,000	0	0.0%
Total, Other Related Expenses	1,924	1,924	3,219	+1,295	+67.3%

Program Direction

Activities and Explanation of Changes

FY 2021 Enacted (Comparable)	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
Program Direction \$12,000,000	\$25,122,000	+\$13,123,000
<i>Salaries and Benefits \$7,741,000</i>	<i>\$16,949,000</i>	<i>+\$9,208,000</i>
<ul style="list-style-type: none"> Salaries and benefits for executive management, programmatic oversight, and analysis for the effective implementation of the CESER program 	<ul style="list-style-type: none"> Salaries and benefits for executive management, programmatic oversight, and analysis for the effective implementation of the CESER program 	<ul style="list-style-type: none"> The increase is due to requesting additional FTEs
<i>Travel \$467,000</i>	<i>\$411,000</i>	<i>-\$56,000</i>
<ul style="list-style-type: none"> Travel includes transportation, subsistence, and incidental expenses that allow CESER to effectively facilitate its mission 	<ul style="list-style-type: none"> Travel includes transportation, subsistence, and incidental expenses that allow CESER to effectively facilitate its mission 	<ul style="list-style-type: none"> The decrease is due to an increased use of virtual meeting options and virtual training

FY 2021 Enacted (Comparable)	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
<i>Support Services \$1,868,000</i>	<i>\$4,544,000</i>	<i>+\$2,676,000</i>
<ul style="list-style-type: none"> Support Services includes contractor support directed by the federal staff to provide analysis to management 	<ul style="list-style-type: none"> Support Services includes contractor support directed by the federal staff to provide analysis to management 	<ul style="list-style-type: none"> The increase is due to an increase in contractual costs
<i>Other Related Expenses \$1,924,000</i>	<i>\$3,219,000</i>	<i>+\$1,295,000</i>
<p>Other Related Expenses includes equipment upgrades and replacements, office furniture, minor construction, commercial credit card purchases using simplified acquisition procedures when possible, and miscellaneous expenditures</p>	<ul style="list-style-type: none"> Includes equipment upgrades and replacements, office furniture, minor construction, commercial credit card purchases using simplified acquisition procedures when possible, and miscellaneous expenditures 	<ul style="list-style-type: none"> The increase is for additional support for staff, including increased telework and transition from desktop computers to laptops and mobile devices

Cybersecurity, Energy Security, and Emergency Response

Research and Development (\$K)^{ab}

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
Basic	5,139	5,139	0	-\$5,139	-100.0%
Applied	48,120	48,120	105,000	+\$56,880	+118.2%
Development	11,664	11,664	20,000	+\$8,336	+71.5%
Total, R&D	64,923	64,923	125,000	+\$60,077	+92.5%

Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR) (\$K)

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
Risk Management Tools	1,077	1,077	912	-165	-15.3%

^a Development reporting includes a proportional share of program direction funding in addition to direct Development funding.

^b The Basic and Applied R&D conducted by CESER in FY 2021 will be performed by the Office of Electricity in FY 2023.

Federal Energy Management Program

Federal Energy Management Program

Federal Energy Management Program

Proposed Appropriation Language

For Department of Energy expenses including the purchase, construction, and acquisition of plant and capital equipment, and other expenses necessary for federal energy management activities in carrying out the purposes of the Department of Energy Organization Act (42 U.S.C. 7101 et seq.), including the acquisition or condemnation of any real property or any facility or for plant or facility acquisition, construction, or expansion, \$169,661,000, to remain available until expended: Provided, That of such amount, \$14,511,000 shall be available until September 30, 2024, for program direction.
P.L. 95-91, "Department of Energy Organization Act" (1977)

P.L. 109-58, "Energy Policy Act of 2005"

P.L. 110-140, "Energy Independence and Security Act of 2007"

P.L. 115-246, "Department of Energy Research and Innovation Act" (2018)

Energy Act of 2020, Section 1012 (42 U.S.C. 8253(i))

Explanation of Changes

The newly created Federal Energy Management Program (FEMP), within the Office of the Under Secretary for Infrastructure, helps Federal agencies meet sustainability goals by providing technical assistance, financial assistance, training, and other resources. FEMP works with stakeholders to enable Federal agencies to identify affordable solutions, facilitate public-private partnerships, and provide energy leadership to the country through government best practices. FEMP was previously funded within the Office of Energy Efficiency and Renewable Energy (EERE).

Federal Energy Management Program

Overview

The Federal Energy Management Program (FEMP) within the Office of the Under Secretary for Infrastructure helps federal agencies meet federal sustainability goals by accelerating the implementation of energy and water conservation measures, implementing deep retrofits, improving energy resilience, and transitioning to zero-emission fleets. The program provides technical assistance and financial assistance to agencies and works with its stakeholders to enable federal agencies to identify affordable solutions, facilitate public-private partnerships, and provide energy leadership to the country by identifying and leveraging government best practices. These activities were previously funded within the Office of Energy Efficiency and Renewable Energy (EERE). The FY 2023 Budget requests \$170 million for FEMP, including \$60 million for the Assisting Federal Facilities with Energy Conservation Technologies (AFFECT) Grant Program under the Federal Energy Efficiency Fund (FEEF) authority and \$57.5 million to launch the Net Zero Labs Initiative.

The Federal Government is the single largest U.S. energy consumer with more than 360,000 buildings and structures comprising 3 billion square feet and 600,000 fleet vehicles. FEMP, in accordance with the Energy Act of 2020, Section 1012 (42 U.S.C. 8253(i)), is tasked to facilitate the implementation by the Federal Government of cost-effective energy and water management and energy-related investment practices; (A) to coordinate and strengthen Federal energy and water efficiency and resilience; and (B) to promote environmental stewardship.

The federal government has successfully reduced its energy use and carbon footprint since 2008. In FY 2020, the Federal Government used 1.2 quads of primary energy at a cost of \$16.4 billion, which represents a reduction in consumption of 21.8 percent since 2008.¹ Energy used in buildings and facilities represents about 59 percent of the total energy use of the Federal Government, and vehicle and equipment energy use accounts for 41 percent.² In FY 2020, the emissions from onsite building fuels, electricity use, and vehicle fuels (grouped as scope 1 and 2 emissions) from standard and non-standard Federal operations³ totaled 68.6 million metric tons of carbon dioxide equivalent (MTCO₂e), which represents a 33.8 percent reduction in emissions.⁴

However, there is a significant opportunity and responsibility for the Federal Government to make further improvements: agencies estimated and reported just over \$7 billion⁵ of potential cost-effective efficiency investments that would result in energy and water savings. Federal agencies have a tremendous opportunity and responsibility to lead by example, both in sharing practices and approaches that state, local and private sector actors can adopt and by demonstrating and deploying technologies at scale to drive market transformation.

FEMP's activities are responsive to Administration priorities, statutory requirements, and Federal agency needs. Federal agencies are required to comply with Executive Order and statutory mandates while maintaining resilient, efficient, and secure installations for mission assurance. Federal agencies' needs include technology development and integration; infrastructure improvements; energy project development and implementation assistance; and workforce development.

FEMP works with its stakeholders to build federal agencies' capacity to meet those goals by supplying agencies with the information, tools, and assistance they need to meet and track their energy- and sustainability related requirements and goals. In addition, FEMP provides financial assistance to agencies through the Assisting Federal Facilities with Energy Conservation Technologies (AFFECT) Grant Program under its Federal Energy Efficiency Fund (FEEF) Program authority.

¹ Table A-4 and Table A-2 <http://ctsedweb.ee.doe.gov/Annual/Report/Report.aspx>.

² In terms of primary (source) energy use.

³ Standard operations include the operation of Federal buildings and fleet vehicles while non-standard operations are primarily military and law enforcement operations.

⁴ Table E-2 <https://ctsedweb.ee.doe.gov/Annual/Report/Report.aspx>

⁵ \$7.2 billion identified by agencies in their evaluations of facilities comprising 75 percent of Federal facility square footage;

https://ctsedweb.ee.doe.gov/CTSDataAnalysis/Default.aspx?ReturnUrl=%2fCTSDataAnalysis%2fReports%2fPublicAgencyReport_ComprehensiveEvaluationFindings.aspx

Highlights of the FY 2023 Request

The FY 2023 Request reflects the realignment within DOE. The Federal Energy Management Program (FEMP) control point, currently in the Energy Efficiency and Renewable Energy (EERE) appropriation account, functionally transfers to the new Federal Energy Management Program (FEMP) appropriation account organizationally within the Office of the Under Secretary for Infrastructure.

In FY 2023, FEMP will continue to leverage the FEEF Program/AFFECT grants providing competitive funding to Federal agencies to invest in energy and water infrastructure improvements, including decarbonization, electrification and resilience of federal operations. At the same time, FEMP will implement its federal building decarbonization strategy through coordinated agency engagements to develop replicable solution sets. FEMP will encourage agencies to leverage performance contracting in the form of an Energy Savings Performance Contracts (ESPC), ESPC ENABLE contracts, and Utility Energy Service Contracts (UESC) to implement energy conservation measures at federal facilities

In FY 2023, the program will launch the Net-Zero Labs Initiative competitively selecting clean energy and decarbonization projects across the National Laboratory complex. The Net Zero Lab initiative will play a critical role in using the lab's extensive research and analytical capabilities to develop and deploy critical climate and clean energy solutions, becoming an early adopter of key technologies, and serving as an exemplar for large institutions seeking to reduce their total carbon emissions and equivalent energy and water usage.

Contributions to DOE-wide Crosscutting Investments

FEMP is involved in several crosscuts, including the following:

- **Energy Storage (\$1,000,000)**—FEMP will provide technical assistance to Federal agencies to integrate energy storage technologies into their decarbonization and climate adaptation strategies. Additional funding may be associated with energy storage AFFECT grant awards.
- **Historically Black Colleges and Universities (HBCUs) (\$250,000)**—FEMP will continue to coordinate with EERE for their inclusive innovation prize to increase opportunities for innovation and entrepreneurial activities within Federal government energy management. In addition, FEMP will incorporate equity, energy, and environmental justice considerations into AFFECT grant award criteria.
- **Science, Technology, Engineering, and Mathematics (STEM) activities (\$500,000)**—FEMP actively participates in fellowship programs to increase agility and skills related to energy and water management in the Federal government. FEMP will partner with Federal agencies to implement a Climate Professionals Internship Program.

**Federal Energy Management Program
(\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR¹	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
Federal Energy Management Program				
Federal Energy Management	27,000	27,000	38,150	+11,150
Federal Energy Efficiency Fund	13,000	13,000	60,000	+47,000
Net-Zero Laboratory (NZL) Initiative	0	0	57,000	+57,000
Program Direction ²	13,635	13,635	14,511	+876
Total, Federal Energy Management Program	53,635	53,635	169,661	+116,026

Future Years Energy Program

	FY 2023 Request	FY 2024 Estimate	FY 2025 Estimate	FY 2026 Estimate	FY 2027 Estimate
Federal Energy Management Program					
Federal Energy Management Program	169,661	174,000	178,000	182,000	186,000
Total, Federal Energy Management Program	169,661	174,000	178,000	182,000	186,000

Outyear Priorities and Assumptions

In the FY 2012 Consolidated Appropriations Act (P.L. 112-74), Congress directed the Department to include a future-years energy program (FYEP) in subsequent requests that reflects the proposed appropriations for five years. This FYEP shows outyear funding for each account for FY 2024 - FY 2027. The outyear funding levels use the growth rates from, and match the outyear account totals published in, the FY 2023 President's Budget for both the 050 and non-050 accounts.

FEMP priorities in the outyears include the following:

- Provide technical assistance to support implementation of statutory and regulatory building and fleet electrification and decarbonization goals.
- Support federal facilities in advancing energy efficiency, clean energy, and operational resilience across the federal building stock and fleets, optimize energy and water management systems.

¹ The FY 2022 Annualized CR amounts reflect the continuing resolution level annualized to a full year. PD was prorated based on the EERE Program Direction line, so the funding is non-comparable.

² PD Request for FY23 includes \$500K to support NZL, \$300K for National Environmental Policy Act (NEPA), and \$76K for pay raise assumption.

- Develop and implement performance contracting strategies to support technology and equipment purchases, deep energy and water retrofits, and life-cycle cost buy-downs and/or bundling within performance contracts.
- Support large-scale federal fleet electrification and building decarbonization by facilitating the deployment of renewable resources and energy storage at federal facilities.

Federal Energy Management Program

Description

As part of the Department of Energy's (DOE) Under Secretary for Infrastructure, the Federal Energy Management Program's (FEMP) priority is to facilitate strategic energy management across the Federal Government. FEMP's efforts enable Federal agencies to meet energy-related goals, comply with statutory and Executive Order requirements, and provide energy leadership to the country by addressing climate change, increasing fleet electrification, and reducing greenhouse gas emissions (GHG) from the federal footprint.

FEMP is authorized per Sec. 1012 of the Energy Act 2020 (EA 2020) to facilitate the implementation by the Federal Government of cost-effective energy and water management and energy-related investment practices to coordinate and strengthen Federal energy and water resilience and promote stewardship. FEMP supports the Executive Office of the President–Council on Environmental Quality and the Office of Management and Budget in the development of Federally focused policy, implementation guidance, agency performance targets, and tracking agency performance.

FEMP activities address Federal agency needs for spurring technology innovation and integration; leveraging performance contracting for infrastructure improvements; developing a skilled workforce; and fulfilling statutory requirements. FEMP strengthens agencies' ability and agility to strategically manage their energy and water infrastructure, while meeting critical mission objectives, through technical assistance focused on federal building decarbonization, climate adaptation for mission assurance, federal fleet electrification, and workforce development. FEMP seeks feedback from agencies, through the Interagency Energy Management Task Force, to inform prioritized activities.

Federal Energy Management:

In FY 2023, FEMP is requesting \$38.2 million for Federal Energy Management activities, including: Technical Assistance, Reporting and Statutory Requirements, and Workforce Development.

Technical Assistance: FEMP utilizes DOE's National Laboratory subject matter experts to support the development of tools and resources needed to advance carbon free electricity procurement, performance contracting, federal building decarbonization, and the transition to a zero emission vehicle federal fleet. These efforts support implementation of federal sustainability projects and strategies, resulting in viable, replicable, energy and water projects. FEMP shares technical solution sets and resources that enable agencies to meet their statutory, regulatory, and executive order requirements. Specifically, in FY 2023:

FEMP will provide technical assistance to enhance development and execution of:

- Carbon Free Electricity: Per Executive Order 14057: *Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability*, it is the policy of the United States that the Federal Government achieve a carbon pollution-free electricity sector by 2035 and net-zero emissions economy-wide by no later than 2050. In addition, FEMP will enhance the REopt tool to support Federal agency site assessments of the techno-economic viability of distributed energy resource (DER) opportunities, including solar, wind, water, biomass, combined heat and power, geothermal, and electrical and thermal storage in support of federal building decarbonization objectives.
- Performance Contracting: FEMP will assist Federal agencies in implementing energy savings performance contracts (ESPCs), utility energy service contracts (UESCs), and other project financing options in pursuit of energy and water efficiency improvements, distributed energy projects, and demand response strategies. In conjunction with its AFFECT grant program design exploration and stakeholder engagement, FEMP will be prioritizing assisting agencies with statutory compliance with ESPC implementation requirements set by EA 2020 and advancing the inclusion of electrification and decarbonization measures within performance contracting. Specifically, FEMP will provide training and technical resources, such as Energy Service Company (ESCO) Selector and eProject Builder, project support regarding implementation ESPCs and UESCs to implement energy efficiency and DER deployment in support of energy management and decarbonization strategies.

- **Federal Buildings:** FEMP will provide technical assistance to federal agencies for their portfolio of buildings, campuses, and installations to achieve net-zero emissions by 2045 and reduce greenhouse gas emissions by 50 percent from buildings, campuses, and installations by 2032 from 2008 levels. Specifically, FEMP will support Federal agencies in areas such as, Decarbonization Technology Evaluation and Validation, Zero Energy Installations, Federal Smart Buildings, and Waste-to-Energy Conversion.
- **Federal Fleet:** FEMP will provide technical assistance to Federal agencies around fleet optimization to identify EV conversion pathways and implement model business case methodologies in support of fleet electrification strategies. Specifically, FEMP will provide technical assistance to support the widespread adoption of the Zero Emission Vehicle Planning and Charging (ZPAC) planning tool developed in FY 2022, which identifies EV opportunities and prioritizes EV installations. In addition, FEMP will develop resources to integrate EV charging infrastructure into building decarbonization strategies. In FY 2023, FEMP will deploy pilots of EV-to-building and EV-to-grid interaction to optimize building decarbonization opportunities as well as identify revenue streams to sites for demand response management and grid system support.

Reporting and Statutory Requirements: In FY 2023, FEMP is requesting \$4.15 million to support statutory and EO reporting requirements. DOE is statutorily required to carry out specific functions related to tracking and implementing effective energy and water management throughout the Federal Government. FY 2023 efforts will continue to focus on tracking statutory, regulatory, and EO requirements. FEMP will implement enhanced reporting system capabilities to achieve these requirements as well as deploy system upgrades to support decarbonization tracking.

FEMP develops annual reports for the Office of Management and Budget and Congress. These analytical reports track Federal progress towards goals on energy efficiency (42 U.S.C. § 8258(a), renewable energy use (42 U.S.C. § 15852(d)), and vehicles (42 U.S.C. § 6374e(a)). In addition, FEMP issues guidance and tracks compliance with the Energy Act of 2020 and the requirements of Section 432 of the Energy Independence and Security Act of 2007 (EISA), Management of Energy and Water Efficiency in Federal Buildings, including the completion of comprehensive evaluations of designated covered facilities and reporting potential and initiated efficiency measures, and annually benchmarking metered buildings.

Workforce Development: In FY 2023, FEMP is requesting \$2.3 million to improve the capabilities and skills of the Federal energy and water management workforce through training aligned with agency core competency needs and Federal Building Personnel Training Act (FBPTA) of 2010 requirements. FEMP will provide internationally accredited training courses for energy and water management professionals through a coordinated training program that includes on-demand and in person (currently virtual) training sessions, including the annual Energy Exchange training event. In addition, FEMP will assess opportunities to leverage the EERE Education Material for Professional Organizations Working on Efficiency and Renewable Energy Developments (EMPOWERED) workforce FOA to develop training content for the Federal energy and water management communities.

Federal Energy Efficiency Fund (FEEF):

AFFECT grants are authorized under Section 152 (f) of the Energy Policy Act of 1992 (EPAct 1992), Public Law 102-486, as codified in 42 U.S.C. § 8256 (b). This statute authorized FEEF to provide competitive grants to Federal agencies to help meet requirements of the National Energy Conservation Policy Act (NECPA), 42 U.S.C. § 8253(a)-(b). AFFECT grants have been provided most years since 2014.

In FY 2023, FEMP is requesting \$60 million in Assisting Federal Facilities with Energy Conservation Technologies (AFFECT) grant funding for Federal agencies to drive decarbonization of the federal building stock, enable fleet electrification, and optimize energy and water management systems. AFFECT grants will be used to develop energy and water conservation measures and deep energy retrofits across the federal government, prioritizing high-impact projects that reduce GHG emissions and advance market transformation. These projects may include technology and equipment purchases for decarbonization and electrification technologies, life-cycle cost buy-downs and/or bundling with performance contracts.

AFFECT recipients must demonstrate why the grant is needed to implement the project or why the grant is needed to include specific energy conservation measures that would not be possible otherwise. Recipients are encouraged to identify small businesses, especially Minority, Woman, Veteran-Owned, or Disadvantaged Business Enterprise for participation and/or to solicit as vendors and sub-contractors in support of building an inclusive clean energy economy. Historically, AFFECT funds have resulted in a public to private gross investment ratio of 1:30.

Net Zero Lab Initiative

In FY 2023, FEMP will launch the Net-Zero Labs Initiative (NZL), with the goal of competitively selecting decarbonization projects across the National Laboratories. DOE Labs are energy-intensive research facilities with substantial 24/7 energy demands. DOE labs face challenges in all the major sectors of emissions: facilities, industry, transportation, and even agriculture. The NZL initiative will demonstrate major advancements in all sectors, and use technology innovations and partnerships, increased efficiencies, and novel approaches to demonstrate the path forward for establishing a clean energy economy. Several labs, including the National Energy Technology Lab, Idaho National Laboratory, National Renewable Energy Laboratory, and Pacific Northwest National Laboratory have already initiated in-depth analyses of how to transition to net-zero emissions while leveraging resident expertise and innovations progressing through their research and development portfolios.

**Federal Energy Management Program
Activities and Explanation of Changes**

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
Federal Energy Management Program \$53,635,000¹	\$169,661,000	+116,026,000
Federal Energy Management \$27,000,000	\$38,150,000	+\$11,150,000
Technical Assistance (\$20.4M) <ul style="list-style-type: none"> Completed establishment of the Performance Contracting National Resource Center (PCNRC) which will establish a PCNRC web resources center with technical and best practice guides, a training series and certificate program for owner’s representatives, related model procurement criteria, and enhancements to the eProject Builder database to facilitate project development and performance tracking for the State and Local sectors facilities. Identified Federal agency cybersecurity and resilience gaps. Developed and validated agency-universal systematic prioritized approach to energy and water portfolio planning. Provided technical project development assistance for energy savings performance contracts (ESPCs), utility energy service contracts (UESCs), and other contract structures in pursuit of energy and water efficiency improvements, distributed energy projects, energy storage, energy efficient product procurement, and demand reduction strategies. 	Technical Assistance (\$31.7M) <ul style="list-style-type: none"> Facility Decarbonization: Provide technical assistance to support implementation of building decarbonization goals and objectives leveraging FEMP integrated services. Areas of focus will include decarbonization technology evaluation and validation, zero energy installations, federal smart buildings, and waste-to-energy conversion. Continued technical assistance, training, and resources to support ESPC/UESC project development to support building decarbonization goals and objectives. Fleet Electrification: Provide technical assistance to support the widespread adoption of the ZPAC planning tool and integration of EV charging infrastructure into building decarbonization strategies 	<ul style="list-style-type: none"> Increased funding for technical assistance to Federal agencies to support federal building decarbonization, performance contracting and energy project procurement development, and technical assistance for Electric Vehicle (EV) charging and fleet electrification.

¹Program Direction is described in a later section of this document. FY 2021 PD funding was part of the EERE appropriation account in FY 2021 and is non-comparable

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
<p>Reporting & Statutory Requirements (\$4.9M)</p> <ul style="list-style-type: none"> • Provided statutorily required reporting and technical guidance. Completed reporting requirements for Agency-level energy intensity, EISA 432 CTS Support, GHG Annual Reporting, FEMP Project Tracking System (PTS), FAST Fleet Reporting, and Energy Act 2020 requirements • Coordinated with Council on Environmental Quality (CEQ) and Office of Management & Budget (OMB) on Executive Order implementation 	<p>Reporting & Statutory Requirements (\$4.2M)</p> <ul style="list-style-type: none"> • Implement enhanced reporting system capabilities to achieve statutory, regulatory, and EO requirements as well as deploy system upgrades and analysis to support decarbonization tracking. Develop training and resources to assist agencies in implementing facility design rules. 	<ul style="list-style-type: none"> • Decreased funding needed due to increased efficiency from implementation of reporting capabilities and prior year increases in training and resources for agency implementation of rules.
<p>Workforce Development (\$1.7M)</p> <ul style="list-style-type: none"> • Provided training content through free internationally accredited training program for energy and water management professionals via on-demand and in person (virtual) training sessions, including the annual Energy Exchange training workshop. 	<p>Workforce Development (\$2.3M)</p> <ul style="list-style-type: none"> • The Request initiates support for the EMPOWERED Workforce Funding Opportunity. Funding will support centralizing the development of educational modules relevant to clean energy technologies and their integration into existing career training and education pathways. FEMP will coordinate and direct funding toward overlapping skillsets and educational topics that support the deployment of relevant clean energy technologies. 	<ul style="list-style-type: none"> • Increase funding to support this new effort. FY 2023 is the first year of funding for this activity.
<p>Federal Energy Efficiency Fund \$13,000,000</p>	<p>\$60,000,000</p>	<p>+\$47,000,000</p>
<ul style="list-style-type: none"> • Awarded \$13 million in funding under the Assisting Federal Facilities with Energy Conservation Technologies (AFFECT) grant program to catalyze the adoption renewable energy and efficiency strategies in areas with carbon-intensive utilities, and electrification at sites served by utilities with low-carbon fuel mix through privately financed performance contract projects. 	<ul style="list-style-type: none"> • Award up to \$60 million in funding under the AFFECT grant program to drive decarbonization of the federal building stock and fleet electrification, optimize energy and water management systems, and fund technology and equipment purchases for established decarbonization and electrification technologies. 	<ul style="list-style-type: none"> • Increased funding to expand number of awards and progress towards building decarbonization and fleet electrification targets.

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
Net Zero Lab Initiative \$0 <ul style="list-style-type: none"> No request 	\$57,000,000 <ul style="list-style-type: none"> NEW: Competitively select decarbonization projects across the National Laboratories 	+\$57,000,000 <ul style="list-style-type: none"> FY 2023 is the first year of funding for this activity.

Program Direction

Overview

Program Direction provides for the costs associated with the Federal workforce, including salaries, benefits, travel, support services, and other related expenses.

Salaries and Benefits support Federal employees who provide executive management, programmatic oversight, and analysis for the effective implementation of FEMP authorities.

Travel includes transportation, subsistence, and incidental expenses that allow FEMP to effectively provide technical assistance and outreach to regions, states, and tribes regarding planning needs and issues, policies, siting protocols, and new energy facilities.

Support Services includes contractor support directed by the Federal staff to perform administrative tasks and provide analyses to inform management decisions.

Other Related Expenses includes corporate IT support (for DOE's Energy Information Technology Services [EITS] desktop services and IT equipment) and working capital fund (WCF) expenses, such as rent, supplies, copying, graphics, mail, printing, and telephones. It also includes office safety requirements, equipment upgrades and replacements, commercial credit card purchases using simplified acquisition procedures where possible, security clearance expenses, and other needs.

Highlights of the FY 2023 Budget Request

0 3

a new proposed Control Point within FEMP for increased staffing to
0 3.

**Program Direction
Activities and Explanation of Changes**

FY 2021 Enacted	FY 2023 Request Level	Explanation of Changes FY 2023 Request Level vs. FY 2021 Enacted
Program Direction N/A– funding is non-comparable		\$14,511,000
Salaries and Benefits	<ul style="list-style-type: none"> \$8,300,000 - Salaries and Benefits support 45 FTEs that provide executive management, programmatic oversight, and analysis for the effective implementation of the program. Funding also provides support for S3 operations. 	<ul style="list-style-type: none"> New request in FY 2023.
<ul style="list-style-type: none"> PD was prorated based on the EERE Program Direction line, so the funding is non-comparable. 		
Travel & Training	<ul style="list-style-type: none"> \$168,000 - Travel includes transportation, subsistence, and incidental expenses to effectively facilitate its mission 	<ul style="list-style-type: none"> New request in FY 2023.
<ul style="list-style-type: none"> PD was prorated based on the EERE Program Direction line, so the funding is non-comparable 		
Support Services	<ul style="list-style-type: none"> \$2,543,000 - Support Services includes contractor support directed by the Federal staff to perform administrative tasks and provide analysis to management. Support Services may include support for post-doctoral fellows 	<ul style="list-style-type: none"> New request in FY 2023.
<ul style="list-style-type: none"> PD was prorated based on the EERE Program Direction line, so the funding is non-comparable 		
Other Related Expenses	<ul style="list-style-type: none"> \$3,500,000 - Other Related Expenses includes EITS desktop services and WCF expense, such as rent, supplies, copying, graphics, mail, printing, and telephones. It also includes equipment upgrades and replacements, commercial credit card purchases using the simplified acquisition procedures to the maximum extent possible, security clearance expenses and other needs. \$500k is provided for 2 FTEs to support the NZL Initiative in addition to the 45 FTEs and \$300k is requested for NEPA compliance activities. 	<ul style="list-style-type: none"> New request in FY 2023
<ul style="list-style-type: none"> PD was prorated based on the EERE Program Direction line, so the funding is non-comparable 		

Bipartisan Infrastructure Law (BIL) Investments

EERE was appropriated funds through the Bipartisan Infrastructure Law (BIL) (P.L. 117-58), which includes activities realigned to the new Office of Federal Energy Management Program (FEMP). In FY 2022, approximately \$250 million of activities related to assisting federal facilities with energy conservation grant program will be managed by the new FEMP office. In FY 2023, no further funding is provided to continue implementing these activities. Please refer to EERE's Overview section for additional information on these BIL activities.

(\$K)

	FY 2022 BIL Appropriation	FY 2023 BIL Appropriation	Managing Organization
Energy Efficiency and Renewable Energy			
FEMP - Assisting Federal Facilities with Energy Conservation Grant Program	250,000	0	FEMP
Total, Energy Efficiency and Renewable Energy	250,000	0	

**Grid
Deployment
Office**

**Grid
Deployment
Office**

Grid Deployment Office
Proposed Appropriation Language

For Department of Energy expenses including the purchase, construction, and acquisition of plant and capital equipment, and other expenses necessary for grid deployment activities in carrying out the purposes of the Department of Energy Organization Act (42 U.S.C. 7101 et seq.), including the acquisition or condemnation of any real property or any facility or for plant or facility acquisition, construction, or expansion, \$90,221,000, to remain available until expended: Provided, That of such amount, \$5,521,000 shall be available until September 30, 2024, for program direction.

Public Law Authorizations

- Public Law 95–91, “Department of Energy Organization Act”, 1977
- Public Law 109-58, “Energy Policy Act of 2005”
- Public Law 110-140, “Energy Independence and Security Act, 2007”
- Public Law 114-94, “Fixing America’s Surface Transportation Act,” 2015
- Public Law 116-260, Division Z, “Energy Act of 2020”
- Public Law 117-58, Division D, “Infrastructure Investment and Jobs Act,” 2021

**Grid Deployment Office
(\$K)**

FY 2021 Enacted	FY 2021 Enacted (Comparable) ^a	FY 2022 Enacted Annualized CR ^b	FY 2022 CR (Comparable) ^a	FY 2023 Request
0	10,000	0	10,000	90,221

Overview

The Grid Deployment Office (GDO) serves as the catalyst for the development of new and upgraded high-capacity electric transmission lines nationwide and the deployment of transmission and distribution technologies to improve the resilience of our Nation’s electric infrastructure. A robust transmission system is the backbone of the Nation’s economic, energy, and national security and a strong distribution system is critical for consumer resilience. To combat climate change, massive deployment of renewable energy and build out of transmission infrastructure is necessary for 100% clean electricity by 2035 and net-zero emissions economy-wide by 2050. GDO works in strong partnership with energy sector stakeholders on a variety of grid initiatives to achieve a clean, reliable, resilient, and equitable grid. Within the Department, GDO takes a holistic view of the electricity system by closely collaborating with the Offices of Electricity, Energy Efficiency and Renewable Energy, Clean Energy Demonstrations, Cybersecurity Energy Security and Emergency Response, Power Marketing Administrations, and other relevant DOE offices.

GDO fully utilizes its unique tools and authorities for coordination, planning, financing, and permitting to drive transmission investment. These tools and authorities are critical to overcoming transmission challenges and addressing opportunities including, but not limited to:

- Insufficient transmission capacity—especially transmission that facilitates transfer of power across regions
- Increasingly vulnerable aging and poorly maintained transmission infrastructure
- Energy supply disruptions due to physical and cyber-attacks or climate-induced extreme weather
- Long permitting and review times for transmission projects
- Transmission interconnection-specific challenges, such as with offshore wind
- Cost allocation issues
- Integration of grid-scale renewable energy resources
- Increasing electrification of transportation and other new and emerging sectors
- Implications of energy interdependencies to improve the alignment and integration of generation, distribution, and transmission planning, with appropriate consideration for flexibility-providing resources including energy storage
- Climate and extreme weather impacts to infrastructure investments
- Load growth and infrastructure needs for electric vehicle deployments
- Market failures for grid investments
- Affordability, evolving customer expectations and behaviors, electricity access, and equity issues, all with a focus on energy justice

Investments in the distribution system must accompany transmission deployment to modernize, harden, and expand the grid. GDO provides technical assistance to inform the formulation and implementation of policies, programs, and strategies for electricity system planning, design, and operation for all levels of a decarbonized grid. In addition, GDO will carry out the provisions provided from the Infrastructure Investment and Jobs Act (IIJA)/Bipartisan Infrastructure Legislation (BIL).

^a The FY 2023 Budget Request to Congress proposes to split the Electricity appropriation account into two accounts: Electricity and Grid Deployment Office (GDO). To allow an apples-to-apples comparison with the FY 2023 request, the comparable amounts for GDO in FY 2021 and FY 2022 include all funding (\$7,000,000) from OE’s Transmission Permitting and Technical Assistance program and \$3,000,000 from OE’s Program Direction funding, equivalent to what would have been in GDO had the proposed structure been in place in FY 2021 and FY 2022.

^b FY 2022 amounts shown reflect the P.L. 117–95 continuing resolution level through March 15, 2022, annualized to a full year.

Through these lines of effort, GDO will make the U.S. power grid more resilient to the impacts of climate change, increase access to affordable and reliable clean energy, and create American jobs across industry sectors.

Within the Request, GDO funds activities that supports 4 key priorities:

- Coordination – early, frequent, and collaborative engagement with government entities, including States, American Indian Tribes, and Alaska Natives, and other stakeholders throughout the process of evaluating needed transmission and distribution infrastructure to meet energy goals and deploying the Department's tools and authorities to accelerate the infrastructure deployment, integrating energy justice principles.
- Planning – modernize distribution and transmission planning processes to drive the development of highest-need grid projects that provide largest long-term benefits to consumers.
- Financing – deploy BIL authorities and coordinate existing financial tools within the Department to help accelerate interregional transmission builds
- Permitting – coordinate with States and Federal permitting agencies to help facilitate and streamline siting and permitting processes.

Grid Modernization Initiative and Grid Modernization Laboratory Consortium: The Grid Modernization Initiative (GMI) works across the U.S. Department of Energy (DOE) to create the modern grid of the future. The Grid Modernization Laboratory Consortium (GMLC) is a crosscutting strategic partnership between DOE and the national laboratories to bring together leading experts, technologies, and resources to collaborate on the goal of modernizing the Nation's grid. GDO activities will support the GMI and GMLC.

Highlights and Major Changes in the FY 2023 Budget Request

Grid Planning and Development (\$16,200,000; +\$16,200,000) accelerates the planning and development of transmission infrastructure to achieve a clean, reliable, resilient, and equitable grid. In FY 2023, the Request supports the National Transmission Planning Study, a long-term transmission planning analysis done in concert with the industry to identify transmission that will provide broad-scale benefits to electric customers, inform regional and interregional transmission planning processes, and identify interregional and national strategies to accelerate decarbonization while maintaining system reliability and resilience.

Grid Technical Assistance (\$29,500,000; +\$22,500,000) provides data, tools, analyses, and other solutions to address the challenges and opportunities driven and impacted by the modernization of the North American grid. In FY 2023, the Request greatly increases grid technical assistance activities, focusing on transmission, energy justice, and rural electric utilities, enabling stakeholders to make catalyzing electricity system decisions in support of Federal and State clean energy goals.

Wholesale Electricity Market Technical Assistance and Grants (\$19,000,000; +\$19,000,000) provides technical assistance to States and regions to establish and improve centrally organized market components and bilateral market arrangements to ensure a clean, reliable, resilient, and equitable grid. In FY 2023, the program will provide grants to investigate market improvements, specifically to evaluate wholesale market opportunities such as expansion of energy imbalance markets.

Interregional and Offshore Transmission Planning (\$20,000,000; +\$20,000,000) addresses the development of electricity transmission and offshore wind transmission planning through convening relevant stakeholders and conducting planning, modeling, and analysis. The Request focuses on transmission planning and financial mechanisms that help identify forward-looking transmission development for offshore wind integration on the Atlantic coast and other locations.

FY 2021 Key Accomplishments

Presidential Permits: Led the review and consultation for two transmission Presidential permits resulting in issuance of both permits. These two projects culminated in the potential for adding nearly 500 miles of transmission line (over 60% underground) and 2,450 megawatt of electric transmission capacity, reducing carbon dioxide emissions by 7.5 million metric tons annually.

Regulatory And Permitting Information Desktop (RAPID) Toolkit: Expanded the RAPID Toolkit to include information on Clean Air Act (CAA) compliance for bulk transmission project development in all 50 States. The Toolkit facilitates communication between project developers, permitting agencies at all jurisdiction levels, and project stakeholders—

including the public. The expansion will enhance understanding of CAA permitting processes and compliance for constructing electric transmission facilities in the United States.

Emergency Orders Issued Pursuant to Section 202(c) of the Federal Power Act:^a Led the development and authorization for two orders for emergency authorizations to allow for excess generation to be utilized in response to grid emergencies occurring in Texas in February and California in September. This helped keep the electricity flowing to many homes and businesses during extreme weather events.

^a 16 U.S.C. 824a(c)

**Grid Deployment Office
Funding by Congressional Control (\$K)**

	FY 2021 Enacted	FY 2021 Enacted (Comparable)^a	FY 2022 Enacted Annualized CR^b	FY 2022 CR (Comparable)^a	FY 2023 Request	FY 2023 Request vs FY 2021 Comp. (\$)	FY 2023 Request vs FY 2021 Comp. (%)
Grid Planning and Development	0	0	–	0	16,200	+16,200	N/A
Grid Technical Assistance	0	7,000	–	7,000	29,500	+22,500	+321.4%
Wholesale Electricity Market Technical Assistance and Grants	0	0	–	0	19,000	+19,000	N/A
Interregional and Offshore Transmission Planning	0	0	–	0	20,000	+20,000	N/A
Program Direction	0	3,000	–	3,000	5,521	+2,521	+84.0%
Total, Grid Deployment Office	0	10,000	0	10,000	90,221	+80,221	+802.2%
Federal Full Time Equivalent Employees (FTEs)	0	7	–	–	17	+10	+142.8%
Additional FE FTEs at NETL supporting GDO ^c	0	1	–	–	1	0	0.0%
Total GDO-funded FTEs	0	8	–	–	18	+10	+125.0%

^a The FY 2023 Budget Request to Congress proposes to split the Electricity appropriation account into two accounts: Electricity and Grid Deployment Office. To allow an apples-to-apples comparison with the FY 2023 request, the comparable amounts for FY 2021 and FY 2022 include amounts from the OE Transmission Permitting and Technical Assistance program, plus a portion of Program Direction funding, equivalent to what would have been in the Grid Deployment Office had the proposed structure been in place in FY 2021 and FY 2022.

^b FY 2022 amounts shown reflect the P.L. 117–95 continuing resolution level annualized to a full year. These amounts are shown only at the “congressional control” level and above; below that level, a dash (–) is shown.

^c GDO funds FTEs at FE’s National Energy Technology Laboratory who are FE employees, but support GDO activities. The FTEs are included in FE’s FTE totals and not in the GDO FTE totals shown on the “Federal Full Time Equivalent Employees (FTEs)” line.

Comparability Matrices

The tables below show the funding allocation between OE and GDO in FY 2021 through FY 2023 under the prior and the proposed budget structures.

**FY 2021 Enacted Appropriation Comparability Matrix
(\$K)**

FY 2023 Proposed Budget Structure				Total
Electricity	Grid Deployment Office			
	Grid Technical Assistance	Program Direction	Total, GDO	

FY 2022 and Prior Budget Structure

Transmission Permitting & Technical Assistance	0	7,000	0	7,000	7,000
Program Direction	15,000	0	3,000	3,000	18,000
Other on-going OE programs	186,720	0	0	0	186,720
Total	201,720	7,000	3,000	10,000	211,720

**FY 2022 Annualized CR Comparability Matrix
(\$K)**

FY 2023 Proposed Budget Structure				Total
Electricity	Grid Deployment Office			
	Grid Technical Assistance	Program Direction	Total, GDO	

FY 2022 and Prior Budget Structure

Transmission Permitting & Technical Assistance	0	7,000	0	7,000	7,000
Program Direction	15,000	0	3,000	3,000	18,000
Other on-going OE programs	186,720	0	0	0	186,720
Total	201,720	7,000	3,000	10,000	211,720

**FY 2023 Request to Congress Comparability Matrix
(\$K)**

FY 2023 Proposed Budget Structure							Total
Electricity	Grid Deployment Office					Total, GDO	
	Grid Planning & Development	Grid Technical Assistance	Wholesale Electricity Market TA & Grants	Interregional & Offshore Transmission Planning	Program Direction		

FY 2022 and Prior Budget Structure

Transmission Permitting & Technical Assistance	0	16,200	29,500	0	0	0	45,700	45,700
Program Direction	17,586	0	0	0	0	5,521	5,521	23,107
Other on-going OE programs	279,800	0	0	0	0	0	0	279,800
New GDO programs in FY 2023	0	0	0	19,000	20,000	0	39,000	39,000
Total	297,386	16,200	29,500	19,000	20,000	5,521	90,221	387,607

Bipartisan Infrastructure Law and Programmatic Realignment

In FY 2023, GDO will continue to implement the authorities provided in the BIL:

- Preventing Outages and Enhancing the Resilience of the Electric Grid (Section 40101)
- Transmission Facilitation Fund (Section 40106)
- Deployment of Technologies to Enhance Grid Flexibility (Section 40107)
- Civil Nuclear Credit Program (Section 40323)
- Maintaining and Enhancing Hydroelectricity Incentives (Section 40333)

GDO will also continue execution during FY 2023 for BIL appropriations provided in FY 2022 only:

- Advanced Energy Security Program to Secure Energy Networks, Modeling and Assessing Energy Infrastructure Risk (Section 40125(d))
- Hydroelectric Production Incentives (Section 40331)
- Hydroelectric Efficiency Improvement Incentives (Section 40332)

The new Office of Under Secretary for Infrastructure (S-3) focuses on deploying clean energy infrastructure in pursuit of national goals for affordable and reliable energy, creating high quality jobs, enhancing U.S. manufacturing, and addressing the climate crisis. Its efforts support achieving carbon-free electricity in the United States by 2035 and a net zero economy by 2050 and delivering substantial benefits to the communities that are frequently left behind. DOE created new offices under the Under Secretary for Infrastructure and realigned other existing offices and components to better execute the BIL appropriation and the overall DOE mission. As part of this realignment, the Grid Deployment Office was created, shifting activities from the Office of Electricity’s Transmission Permitting and Technical Assistance program, as well as a corresponding portion of the Program Direction program.

Future Years Energy Program (\$k)

	FY 2023 Request	FY 2024	FY 2025	FY 2026	FY 2027
Grid Deployment Office	90,221	92,000	94,000	96,000	99,000

In the FY 2012 Consolidated Appropriations Act (P.L. 112–74), Congress directed the Department to include a future-years energy program (FYEP) in subsequent requests that reflects the proposed appropriations for five years. This FYEP shows outyear funding for each account for FY 2024–FY 2027. The outyear funding levels use the growth rates from and match the outyear account totals published in the FY 2023 President’s Budget for both the 050 and non-050 accounts. Actual future budget request levels will be determined as part of the annual budget process.

GDO in priorities in the outyears include the following:

- Working with regions, States, and other stakeholders to help operationalize results of the National Transmission Planning Study, which will also support BIL provisions
- Providing grid technical assistance to stakeholders to make grid decisions to meet Federal and State clean energy goals, such as developing offshore wind transmission and cost-effective clean energy integration.
- Continuing to focus on energy justice to ensure the future grid is clean and equitable

Grid Planning and Development

Overview

The Grid Planning and Development (GPD) program accelerates the planning and development of transmission infrastructure to achieve a clean, reliable, resilient, and equitable grid. The program supports the Administration's and Congress' objectives:

- Demonstrate measurable improvements in energy resilience in the United States and mitigate climate-related risk
- Invest in clean energy and decarbonization solutions to achieve a carbon-free power sector by 2035 and net-zero greenhouse gas emissions economy-wide by 2050
- Invest in modernized grid infrastructure that can accommodate increased electrification, consumer preferences, and other evolving system needs over the coming decades

To ensure that this new vision of the grid serves all, regardless of socio-economic background, the Department commits to robust engagement on energy justice and collaboration with States, U.S. Territories, American Indian Tribes and Alaska Natives, industry, unions, local communities, and other stakeholders.

A robust transmission system is the backbone of the Nation's economic, energy, and national security and a strong distribution system is critical for consumer resilience. A decarbonized grid requires massive deployment of renewable energy and buildout of transmission infrastructure. New, deliberate, and different planning processes are needed to build a cost-effective transmission network that offers access to a diversity of energy resources within and across geographic regions for a reliable, resilient, and affordable electricity system. GPD leads with way to a carbon-free future by helping to facilitate this new type of transmission planning.

The National Transmission Planning Study (NTP Study), initiated in FY 2021 and formally launched in FY 2022, analyzes national-scale, long-term transmission planning scenarios to identify areas transmission that can provide broad-scale benefits to electric customers, inform interregional transmission planning processes, and identify interregional and national strategies to accelerate decarbonization while maintaining system reliability and resiliency.^a GPD continues the second phase of the NTP study in FY 2023 to identify pathways for necessary large-scale transmission system buildouts that meet regional and national interests.

The FY 2023 Request invests, as part of the NTP Study, in transmission planning tools such that those tools are optimized given retail and wholesale markets, instead of optimized by a central planner. This results in transmission planning models that more closely resemble real practice and help planning entities and State governments analyze modifications to their power markets.

GPD convenes and collaborates with different regions, planning bodies, and other decision-makers to develop sound interregional transmission plans, utilizing expertise from subject matter experts and outcomes from the NTP Study. Recognizing that the United States is not one energy monolith, each region receives specific consideration and targeted assistance to address their unique electricity system issues and needs. These interregional planning studies provide the foundation for a future national transmission plan as well as a blueprint to connect the regions in a resilient, reliable, and economic manner.

GPD is conducting the National Electric Transmission Needs Study (Transmission Needs Study) which identifies high priority transmission needs in FY 2022. The Bipartisan Infrastructure Law (BIL) directed the Department to conduct assessments of historic and anticipated transmission capacity constraints and congestion at least every three years. Results of this study will inform the process to designate National Interest Electric Transmission Corridors (NIETC) in FY 2023.

Highlights of the FY 2023 Budget Request

In FY 2023, GPD significantly invests in the next phase of the NTP Study, additional transmission planning tools in support of the NTP Study, interregional plans, and NIETC designation processes to catalyze transmission planning and development.

^a <https://www.energy.gov/oe/national-transmission-planning-study>

NTP Study

The request prioritizes the continued scenario analysis development and transmission modeling in the NTP Study. In its second year of development, the NTP Study will continue to refine and model new scenarios to reach grid decarbonization goals cost effectively and under new high-stress conditions. Several scenarios, informed by robust stakeholder engagement and defined by transmission, demand, and generation drivers, will be compared against the baseline analysis developed in FY 2022. The purpose of the baseline analysis is to compare the currently planned transmission system to the Administration's 2035 goal. These scenarios, vigorously vetted by multiple power sector models (power flow, cost benefit, capacity expansion, North American Energy Resilience Model, etc.), will help identify potential future generation resources and transmission expansion options.

The results of the scenario study will:

- Link several long-term and short-term power system models to test a number of transmission buildout scenarios
- Inform the existing planning process
- Test transmission options that lie outside of current planning
- Prove a wide range of economic, reliability, and resilience indicators for each transmission scenario

Through the NTP Study, GPD will work with stakeholders to help identify viable future grid realization pathways to a large-scale transmission system buildout that would accomplish clean energy goals.

Additionally, the NTP Study will include an economic analysis of transmission solutions, including consideration of cost allocation principles for valuing the benefits of transmission. Quantifying the benefits of transmission for resource adequacy and reliability will offer a more holistic approach than current practices of allocating costs to consumers based on production costs alone.

In a parallel effort, the NTP Study team will work with experts and industry groups to consider alternative approaches to national planning. Some of the tools and methods used by the NTP Study may be unfamiliar and not validated by industry, including computationally heavy optimization approaches that do not fully utilize regional system knowledge accumulated from decades of studies. To mitigate these challenges to industry acceptance, scoping different national transmission planning approaches will ensure stakeholders are engaged meaningfully from a bottom-up approach instead of a Department-led top-down perspective

The FY 2023 request will also create an outward-facing data exchange which enables stakeholders to access NTP Study data. This will facilitate public-private collaboration, ensure that best-in-class tools are available to the national community, and that the data and models will be consistent and available to the stakeholder community for continued coordination and collaboration over the next decade to achieve the Administration's 2035 clean electricity goal.

NTP Study Transmission Planning Tools

In FY 2023, additional transmission planning tools will be developed to further vet the NTP Study scenarios for increased confidence and validation:

- **Clean Energy Zones:** Analyzing the location of clean energy zones provides a more realistic method for transmission planning. There are several clean energy technologies which are location dependent—solar, wind, geothermal, and carbon capture and sequestration—and thus require special attention in capacity expansion modeling. Current models site these clean energy technologies based on optimal resources without considering local market and regulatory conditions. By modifying lab tools to consider clean energy zones, future planning efforts will be more practical and viable.
- **Transmission-Generation Interconnection:** Study how generation interconnection queue processes and associated system upgrade costs impact the ability of both generators and transmission to interconnect to the power system. Analyze alternative interconnection processes that will result in lower cost burden and faster interconnection time.
- **Transmission Impacts on Resource Adequacy:** Resource adequacy modeling is a critical component of the overall transmission system planning process. Historically, resource adequacy models have relied on a series of simplifications, but a host of complexities associated with the ongoing power system transformation and extreme weather necessitate

improved resource adequacy modeling methods. Modeling enhancements are needed to better assess how interregional transmission will impact resource adequacy.

- Impacts of Distributed Energy Resources on the Bulk Electric System: The growth of distributed energy resources (DERs), flexible loads, and behind-the-meter generation and storage will require upgrades to the distribution system. These resources can provide much needed ancillary services to the bulk power system, but those services cannot be adequately managed without joint distribution-transmission system planning. This study will develop both tools and methodologies of joint distribution-transmission planning given the increased use of DERs in coordination with utilities and industry.
- Impacts of Wholesale Market on Transmission Planning: Transmission expansion has large impacts on wholesale electricity prices, but little is understood about how the structure of those electricity markets could impact the need for transmission expansion. This work will improve market enhancement tools—meant for use by stakeholders to compare the outcomes of different market structures—to include transmission expansion and planning.

Interregional Transmission Planning

To achieve a clean, reliable, resilient, and equitable grid, interregional transmission plans must be strategically developed with input from numerous planning organizations, each with their own perspective of the electricity system. The FY 2023 request supports GPD convening and leading regional grid planning workshops to develop interregional plans for renewable transmission development. GPD will work with experts around the country, including the national laboratories and Power Marketing Administrations (PMAs), and use the outcomes of the NTP Study to provide thought leadership and facilitate robust discussion at these regional planning workshops. The program will also work closely with State offices and other stakeholders to ensure that their interregional transmission needs, challenges, opportunities, and policy goals are aligned in the transmission plans. As an outcome of the workshops, GPD will develop a robust set of resources to support transmission planners and other stakeholders in advancing interregional transmission planning processes. This includes developing intertie blueprints to connect different regions, including the Texas Interconnection, in the U.S. that considers the total costs of connection, impacts on reliability and ratepayer costs, impacts on national integration of renewable energy, and equity considerations.

National Interest Electric Transmission Corridor Designation

GPD will develop a consultation process for designating a NIETC. The Department can designate a NIETC after taking into consideration the Transmission Needs Study, which was conducted in FY 2022. The Transmission Needs Study identified high-priority national transmission needs—specifically, where new or upgraded transmission facilities could relieve expected future constraints and congestion driven by deployment of clean energy consistent with Federal, State, and local policy and consumer preferences; higher electric demand as a result of building and transportation electrification; and insufficient transfer capacity across regions. To facilitate the efficient consideration of projects seeking a FERC-issued permit, GPD will develop a process for NIETC designation on a transmission route-specific, applicant-driven basis. Particular consideration will be given to proposed NIETCs that, to the greatest degree possible, overlap with or utilize existing highway, rail, utility, and Federal land rights-of-way. GPD will prioritize engaging with stakeholders early and often, ensuring that energy justice is considered when designating a NIETC.

**Grid Planning and Development
Funding (\$K)**

	FY 2021 Enacted	FY 2022 Enacted Annualized CR^a	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
Grid Planning and Development	0	-	16,200	+16,200	N/A

**Grid Planning and Development
Explanation of Major Changes (\$K)**

	FY 2023 Request vs FY 2021 Enacted
<ul style="list-style-type: none"> The significant increase supports the next phase of the NTP Study to develop and vet several transmission scenarios to help identify pathways for necessary large-scale transmission system buildouts that meet regional and national interests. In addition, the NTP Study will develop alternative approaches to national transmission planning and build additional models to enhance transmission planning. GPD will work with regions and States to develop interregional transmission plans and fund the NIETC designation process. 	+16,200

^a FY 2022 amounts shown reflect the P.L. 117-95 continuing resolution (CR) level annualized to a full year. These amounts are shown only at the “congressional control” level and above; below that level, a dash (-) is shown.

Grid Planning and Development

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
Grid Planning and Development \$0	\$16,200,000	+\$16,200,000
<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • The NTP Study will: <ul style="list-style-type: none"> ○ Work with regional transmission planning organizations, States, developers, and other stakeholders to build an interregional transmission scenario-based roadmap designed to identify needed transmission capacity to hit the 2035 clean energy goals ○ Develop alternative approaches to national transmission planning ○ Develop new transmission planning models to vet transmission scenarios • In consultation with key stakeholders, develop a process to designate NIETCs and make designations, as appropriate • Convene and lead several regional workshops to develop interregional transmission plans • As an outcome of the workshops, develop a robust set of resources to support transmission planners and other stakeholders in advancing interregional transmission planning processes 	<ul style="list-style-type: none"> • Significantly supports the second phase of the NTP Study, a cornerstone analysis that will result in a transmission needs roadmap to achieve a decarbonized power sector by 2035 • Supports development of new transmission planning tools • Supports the development of NIETC designation processes • Supports necessary workshops to convene multiple electricity system stakeholders to develop interregional transmission plans, critical to meeting the Administration’s 2035 decarbonization goals

Grid Technical Assistance

Overview

The electricity sector is responding to several complex challenges and opportunities that will have a transformative impact on the electric grid. Multiple pathways exist for the United States to meet both resilience and clean energy goals, but all require upgrading and expanding the Nation's transmission and distribution systems; significant investment in affordable new generation resources and energy storage; and efficiency, decarbonization, and demand flexibility investments in buildings, industry, and transportation. All these electricity system decisions must be balanced against the need for cost effectiveness and reliability, while ensuring energy justice remains a priority consideration. Regional, State, Tribal, and other entities may have limited resources or lack in-house expertise to fully consider the effects of these rapidly evolving policies and challenges.

Grid Technical Assistance (Grid TA) helps electricity system stakeholders overcome these challenges through its robust technical assistance program. Grid TA works with experts around the country, including the national laboratories and the Power Marketing Administrations (PMAs), to provide data, tools, analyses, and other solutions to address the challenges and opportunities driven and impacted by the modernization of the North American grid. Grid TA expects increased demand for technical assistance as issues surrounding State and interregional utility analytical needs, macro-economic benefit determinations, offshore wind interconnection, permitting and siting of transmission infrastructure, and energy justice considerations continue to grow in complexity and urgency.

Grid TA coordinates with other Department elements, such as the Offices of Electricity and of Energy Efficiency and Renewable Energy, to provide a holistic technical assistance framework, identify co-funding opportunities, and avoid duplication of work. Types of technical assistance offered by the Department include technical analysis, financial analysis, training, program assistance, policy and planning assistance, capacity building, and stakeholder engagement and coordination. Beyond the Department, Grid TA coordinates with other Federal agencies as appropriate to maximize efficiencies delivering technical assistance to key electricity stakeholders.

In all execution of technical assistance, Grid TA includes equity considerations and, to the greatest extent possible, uses its technical assistance to States, municipal utilities, rural electric cooperatives, independent system operators, and regional transmission organizations as a lever to better ensure that decisions made at all levels of the power system do not disproportionately negatively impact disadvantaged communities.

Grid TA also executes its legal responsibilities for authorizing the export of electric energy, permitting the construction of transmission infrastructure across international borders, and helping better coordinate permitting of transmission on Federal lands.

Highlights of the FY 2023 Budget Request

The FY 2023 Request transfers activities historically performed by the Office of Electricity's Transmission Permitting and Technical Assistance program to the Grid Deployment Office's Grid TA program. The Request significantly increases the amount of technical assistance provided to catalyze changes needed to achieve the Administration's goal of a carbon pollution-free electricity sector by 2035. With the increased funding, Grid TA will greatly accelerate and expand efforts to help electricity system decision makers transition to a clean, resilient, reliable, and equitable grid. Technical assistance will be provided by Grid TA's network of subject matter experts from the national laboratories, PMAs, and other electricity industry leaders. Grid TA will also provide direct support through cooperative agreements and other financial assistance mechanisms to regional and national associations whose membership represents different electricity stakeholders.

In FY 2023, Grid TA will focus on transmission, energy justice, and rural electric utilities.

Transmission

- Grid TA will engage in activities that will expand the Nation's transmission capacity.
- Grid TA will issue a funding opportunity announcement (FOA) or establish grants for states to pilot innovative approaches to facilitate transmission development.
 - Emphasis will be on multi-state applications to develop interstate or interregional transmission infrastructure.
 - The FOA/grant will strongly encourage State partnerships with relevant stakeholders and provide the awardees with technical and financial assistance.

- Grid TA will develop new transmission tools and continue to maintain its suite of transmission tools, focusing on improving permitting and siting.
 - New data analytical tools such as wind, solar, and climate forecasting will help give needed visibility to successfully integrate the large amounts of intermittent generation successfully.
 - Other tools, such as expanded benefit analysis, seams modeling, or investment decision making, will be developed.
 - Tools, analysis, and methodologies to help design transmission incentives to meet clean energy goals.
 - Outcomes from regional collaborations will further inform the types of tools needed to help develop transmission.
- Grid TA will track and, when necessary, coordinate DOE technical assistance for, all significant transmission projects within the United States.
 - This builds off the work conducted in FY 2022 that identified strategically important and shovel-ready transmission projects.
 - Utilizing that list, Grid TA will identify regulatory hurdles in Federal siting and permitting processes and seek to collaborate with others to remove barriers to accelerate transmission infrastructure development.

Energy Justice

- Grid TA will champion energy justice issues by providing technical assistance to stakeholders in this area. Federal, regional, State, Tribal, and other entities must consider and mitigate energy justice challenges when planning for the 2035 decarbonized grid.
- The future electric grid must not only be clean, reliable, and resilient, it must be equitable as well.
- Challenges include accessibility and affordability, infrastructure siting, environmental impacts, and inequitable distribution of benefits.
- The FY 2023 Request will provide technical assistance to ensure that communities will not be left behind in pursuit of a greener grid.
- Grid TA will build in energy justice considerations into the models as areas for clean energy transmission buildout are identified.

Rural electrification

- The Department will work with the U.S. Department of Agriculture (USDA) to support rural electricity utilities.
- In FY 2023, Grid TA will participate in a joint initiative with USDA's Rural Utilities Service (RUS) to provide technical assistance for rural electric utilities to achieve the President's de-carbonization goals and ensure clean energy funding is implemented effectively in rural areas.
- The RUS Electric Program provides funding to maintain, expand, upgrade, and modernize America's rural electric infrastructure. Grid TA will work in conjunction with RUS to align decarbonization and financing opportunities in rural communities.

Other Grid TA technical assistance areas include:

- Identifying regulatory, operations, and business models that align incentives for transmission development
- Identifying implications of energy interdependencies to improve the alignment and integration of generation, distribution, and transmission planning
- Integrating affordability, evolving customer expectations and behaviors, and electricity access and equity issues, all with a focus on energy justice
- Finding solutions to address aging and poorly maintained transmission infrastructure
- Exploring different approaches to climate resilience planning support to mitigate future risks
- Identifying interregional transmission needed to accommodate increases in demand, such as electrification of transportation and new or growing industries
- Modeling ways to achieve grid-scale renewable energy and distributed energy resource integration
- Identifying investment options to meet established and emerging grid needs and analysis for grid investment decision-making
- In coordination with the Office of Cybersecurity, Energy Security, and Emergency Response (CESER), assisting stakeholders in addressing cybersecurity issues in transmission infrastructure

Grid TA will also continue its regulatory activities to execute and carry out its statutory authorities and responsibilities to improve permitting and siting:

- Conducting environmental reviews and technical analyses needed for Federal authorization of transmission projects that cross U.S. international borders
- Coordinating Federal permitting by other agencies of new transmission infrastructure that involves Federal authorizations, as required by Section 216(h) of the Federal Power Act
- Evaluating any new applications under Section 1222 of the Energy Policy Act of 2005, which authorizes DOE to participate in third party-financed transmission projects within the Western Area Power Administration (WAPA) and the Southwestern Power Administration (SWPA) regions

In addition to the regulatory and statutory actions above, Grid TA will review projects associated with the Bipartisan Infrastructure Law (BIL) under the National Environmental Policy Act (NEPA) for the following provisions:

- Preventing Outages and Enhancing the Resilience of the Electric Grid (Section 40101)
- Transmission Facilitation Fund (Section 40106)
- Deployment of Technologies to Enhance Grid Flexibility (Section 40107)
- Advanced Energy Security Program to Secure Energy Networks, Modeling and Assessing Energy Infrastructure Risk (Section 40125(d))
- Civil Nuclear Credit Program (40323)
- Hydroelectric Production Incentives (Section 40331)
- Hydroelectric Efficiency Improvement Incentives (Section 40332)
- Maintaining and Enhancing Hydroelectricity Incentives (Section 40333)

**Grid Technical Assistance
Funding (\$K)**

	FY 2021 Enacted^a	FY 2022 Enacted Annualized CR^b	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
Grid Technical Assistance					
Electricity System Technical Assistance	6,500	–	23,500	+17,000	+261.5%
Rural Electric Utilities	0	–	5,000	+5,000	N/A
Regulatory Programs	500	–	1,000	+500	+100.0%
Total, Grid Technical Assistance	7,000	7,000	29,500	+22,500	+321.4%

**Grid Technical Assistance
Explanation of Major Changes (\$K)**

	FY 2023 Request vs FY 2021 Enacted
<ul style="list-style-type: none"> Electricity System Technical Assistance: Significantly increases the amount of technical assistance provided to catalyze changes needed to achieve the Administration’s goal of a carbon pollution-free electricity sector by 2035. Activities include FOA/grant to States, development of new tools, and addressing energy justice. 	+17,000
<ul style="list-style-type: none"> Rural Electric Utilities: New activity to provide technical assistance for rural electric utilities to support the transition to carbon-pollution-free electricity by 2035. 	+5,000
<ul style="list-style-type: none"> Regulatory Programs: Increase provides NEPA support and analysis to BIL program investments. 	+500
Total, Grid Technical Assistance	+22,500

^a FY 2021 funds were appropriated under Transmission Permitting and Technical Assistance in the Electricity appropriation.

^b FY 2022 amounts shown reflect the P.L. 117–95 continuing resolution (CR) level annualized to a full year. These amounts are shown only at the “congressional control” level and above; below that level, a dash (–) is shown.

Grid Technical Assistance

Activities and Explanation of Changes

FY 2021 Enacted ^a	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
Grid Technical Assistance \$7,000,000	\$29,500,000	+\$22,500,000
<i>Electricity System Technical Assistance \$6,500,000</i>	<i>\$23,500,000</i>	<i>+\$17,000,000</i>
<ul style="list-style-type: none"> • Provided technical assistance to Federal, State, Tribal, territorial, and regional entities for current and future electricity-related issues • Supported technical assistance work to provide stakeholders an in-depth understanding of the resilience of the electricity and related infrastructure • Developed grid resilience tools and analyses to help State electricity officials promote prudent, strategic decision-making 	<ul style="list-style-type: none"> • Issue a FOA or establish grants to States to pilot innovative approaches to facilitate transmission development <ul style="list-style-type: none"> • The FOA/grants will strongly encourage State partnerships with relevant stakeholders and provide the awardees with technical and financial assistance • Expand suite of tools for transmission development, such as tools for transmission data analytics, expanded benefit analysis, seams modeling, renewable zones, or investment decision making • Develop tools, analysis, and methodologies to help design transmission incentives to meet clean energy goals • Track and coordinate DOE technical assistance for all significant transmission projects within the United States • Provide technical assistance for energy justice and ensure energy justice considerations are built into new models • Provide technical assistance on topics outside of transmission and energy justice areas, such as on implications of energy interdependencies to improve the alignment and integration of generation, distribution, and transmission planning 	<ul style="list-style-type: none"> • Significantly accelerates transmission development by releasing FOA/grants to States and expanding the suite of new transmission tools • Ensure energy justice is a consideration and priority in all technical assistance activities, highlighting the Department’s commitment to equity • Continues to be responsive to States for technical assistance requests that may be outside the scope of transmission, such as comprehensive planning assistance for generation, transmission, and distribution

^a FY 2021 funds were appropriated under Transmission Permitting and Technical Assistance in the Electricity appropriation.

FY 2021 Enacted ^a	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
<i>Rural Electric Utilities \$0</i>	<i>\$5,000,000</i>	<i>+\$5,000,000</i>
	<ul style="list-style-type: none"> • As part of a joint initiative with USDA's RUS, provide technical assistance for rural electric utilities to support the transition to carbon pollution free electricity by 2035 • Work in conjunction with RUS to align decarbonization and financing opportunities in rural communities 	<ul style="list-style-type: none"> • New program established in FY 2023 to support rural communities transition to a decarbonized grid by 2035
<i>Regulatory Programs \$500,000</i>	<i>\$1,000,000</i>	<i>+\$500,000</i>
<ul style="list-style-type: none"> • Continued to implement regulatory responsibilities and evaluate regulatory reform to reduce Federal burden. 	<ul style="list-style-type: none"> • Conduct environmental reviews and technical analyses needed for Federal authorization of transmission projects that cross U.S. international borders • Provide NEPA support and analysis to BIL program investments, potentially totaling over \$10 billion dollars of funding 	<ul style="list-style-type: none"> • Increase supports NEPA review of BIL projects

Wholesale Electricity Market Technical Assistance and Grants

Overview

The mission of the Wholesale Electricity Market Technical Assistance and Grants (Market TAG) program is to work with electricity system partners and stakeholders to establish and improve centrally organized market components and bilateral market arrangements to ensure a clean, reliable, resilient, and equitable grid.

Over the past two decades, a diverse set of wholesale electricity markets has evolved in different regions of the United States. These wholesale markets can be divided into two broad categories: traditional bilateral markets (regions of the country that have not joined regional transmission organizations [RTOs] or Independent Systems Operators [ISOs]) and centrally organized markets.

In the Southeast and West, bilateral markets are dominated by vertically integrated electric utilities (VIEU) that operate under a regulated cost-of-service model. States in these regions retain strong control over electric utility resource decisions and oversee resource adequacy, and they consider non-market factors in their oversight of utility decisions through a utility's integrated resource planning process. Once approved by State regulators, ratepayers guarantee the cost recovery of VIEU generation investments through retail rates (or merchant generators through long-term purchase power agreements, or PPAs, with utilities).

In centrally organized markets, generators offer electricity bids on a day-ahead and real-time basis. The RTO/ISO then pools these bids into a single supply curve and calculates the clearing price that matches supply to demand, considering transmission limitations for the next interval. This calculation yields a set of market-clearing prices, one for each location and time horizon. Centrally organized markets also compensate resources that provide certain essential reliability services through ancillary service markets. Furthermore, in some cases, RTO/ISOs provide supplemental revenues to generators that are dispatched out-of-market, such as ones that are needed to ensure local reliability.

Highlights of the FY 2023 Budget Request

Market TAG is a new program in FY 2023 to provide technical assistance to States and regions to evaluate forming, expanding, or improving organized wholesale electricity markets. To combat climate change, massive deployment of renewable energy and build out of transmission infrastructure is necessary for 100% clean electricity by 2035 and net-zero emissions economy-wide by 2050. Wholesale electricity market designs need to reflect these increases in renewable energy and distributed energy resources (DERs) to achieve a clean, reliable, resilient, and equitable grid. The program will also make grants to procure data or technology systems to help support the exploration of innovative wholesale electricity market components.

The program will analyze requirements for wholesale market component formation and concerns regarding:

- **Resource Adequacy:** Some States require utilities to build new or subsidize specific power plants outside the RTO/ISO resource adequacy processes. Other centrally organized markets (PJM, ISO New England, and New York ISO) have implemented capacity markets as a mechanism to provide sufficient revenue for resources to ensure resource adequacy.
- **Wholesale market buildout,** including market governance, planning and policy, and regulatory development assistance related to RTO and ISO formation, expansion, or improvement.
- **Policy Coordination:** Technical capacity needed to address challenges related to the coordination and alignment of existing organized wholesale markets with state energy and climate priorities, governance, and interoperability.
- **Cost and Benefits of Market Components:** Studying the costs and benefits to consumers and the financial and operations impacts of joining an RTO or ISO, including regional and multi-state-level economic modeling of the benefits of interstate sharing of electric resources to provide reliable and affordable service; planning for significant additions of new variable electric resources, grid demands presented by State or Federal energy and climate policies; consideration of system and fuel interdependencies that create emergency conditions during extreme weather events; and accounting for generation production costs savings, fuel savings, transmission cost savings, reliability, resiliency, deferral of capital investments, and the effect on economic development and retention of industry.

- **Market Designs:** The ability of current market designs can be adapted to provide good long-term price signals to support investment in an efficient portfolio of generating capacity and storage consistent with public policy goals.
- **Reliability:** The development of short-term market mechanisms to provide energy and ancillary services and accommodate the supply variability and energy market price impacts associated with intermittent generation and energy storage deployment at scale.
- **DER Integration:** Technical assistance needed to accelerate understanding of State roles, decisions, and options in implementing FERC Order 2222, which enables DERs to participate alongside traditional resources in regional organized wholesale markets.

The program will be executed in two parts

- **Market Simulations and Analytics:** Funding will support national laboratory expertise in market simulations and analytics regarding market formation, wholesale and retail market relationships and future market design. Resource adequacy issues are continuing to grow across the electricity network and innovations around market structures to support resource adequacy across regions and balancing areas are opportunities for innovation. Specifically, the limited information on transmission loading relief could be utilized to better understand transmission congestion and priorities for tools such as dynamic line ratings. In addition, lessons learned from the Northeast ISOs could be modeled for using prices to identify transmission capacity resources. Other opportunities exist to review and update the appropriate minimum reserve margin based on estimates of the value of lost load for system reliability. With the transition to clean energy resources and energy storage, the design of reserve margins should be investigated.
- **Grants to States and ISO/RTOs:** Funding will be provided to regional entities and States for the purpose of investigating market improvements, specifically to evaluate wholesale market opportunities such as expansion of energy imbalance markets. The ISOs collect and release a variety of performance data as part of their normal operations. The importance of interregional power flows and regional markets will drive more data sharing and collaboration across market and ISO seams, which will be critical to enabling regional support in emergencies.

**Wholesale Electricity Market Technical Assistance and Grants
Funding (\$K)**

	FY 2021 Enacted	FY 2022 Enacted Annualized CR ^a	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
Wholesale Electricity Market Technical Assistance and Grants					
Market Simulations and Analytics	0	–	5,000	+5,000	N/A
ISO/RTO Grants	0	–	14,000	+14,000	N/A
Total, Wholesale Electricity Market Technical Assistance and Grants	0	0	19,000	+19,000	N/A

**Wholesale Electricity Market Technical Assistance and Grants
Explanation of Major Changes (\$K)**

<ul style="list-style-type: none"> ▪ Market Simulations and Analytics: The Request supports national laboratory expertise in market simulations and analytics regarding market formation, wholesale and retail market relationships, and future market design. ▪ State and ISO/RTO Grants: The request provides 3–4 grants for regional entities and States to investigate market improvements. 	<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">FY 2023 Request vs FY 2021 Enacted</div>
	+5,000
	+14,000
Total, Wholesale Electricity Market Technical Assistance and Grants	+19,000

^a FY 2022 amounts shown reflect the P.L. 117–95 continuing resolution (CR) level annualized to a full year. These amounts are shown only at the “congressional control” level and above; below that level, a dash (–) is shown.

Wholesale Electricity Market Technical Assistance and Grants

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
Wholesale Electricity Market Technical Assistance and Grants \$0	\$19,000,000	+\$19,000,000
<i>Market Simulations and Analytics \$0</i>	<i>\$5,000,000</i>	<i>+\$5,000,000</i>
	<ul style="list-style-type: none"> Conduct at least one major study on wholesale market challenges and potential solutions Efforts could focus on ancillary services and market components such as reserve requirements, resource adequacy, load following, dynamic scheduling and/or network stability services including black start capabilities to improve resilience and reliability 	<ul style="list-style-type: none"> New program established in FY 2023
<i>State and ISO/RTO Grants \$0</i>	<i>\$14,000,000</i>	<i>+\$14,000,000</i>
	<ul style="list-style-type: none"> Establish at least 3–4 grants to States and ISO/RTOs for evaluating new markets and market improvements Efforts will directly support market development opportunities and analysis of market power, cost allocation and support of innovative transmission pricing concepts 	<ul style="list-style-type: none"> New program established in FY 2023

Interregional and Offshore Transmission Planning

Overview

As the electric industry transitions from traditional carbon-producing generation resources toward net-zero generation resources for serving their customers, the electric transmission grid needs to transform as well. State carbon policies, coupled with Federal goals, are accelerating the rate at which the industry must shift. As we plan for the transition from the existing electric transmission grid to the grid of the future, multiple variables must be considered, including the integration of large volumes of clean generation and end-source electrification.

Transmission constraints are a potential impediment to reach the Administration's 30 GW by 2030 goal for offshore wind (OSW) deployment. As a result, the White House requested that DOE and U.S. Department of Interior's Bureau of Ocean Energy Management (BOEM) develop a plan for addressing these challenges. The effort also seeks to maximize benefits to the onshore transmission system by considering solutions that would reduce congestion and support system interconnection, including potential onshore transmission upgrades. This work will be closely aligned with the National Transmission Planning Study, which is looking at transmission upgrades needed on a national level. The OSW deployment targets are a critical steppingstone to meeting the carbon-pollution free electric grid by 2035 goal and the study areas will overlap for coastal States.

Since May 2021, leveraging activities initiated by the Office of Energy Efficiency and Renewable Energy's Wind Energy Technology Office (EERE WETO), DOE and BOEM have been engaged in the following transmission-focused activities:

- Consultation with FERC on the primary barriers to offshore transmission planning and developing a plan for addressing these challenges.
- Hosting in a series of discussions with respect to transmission needs and potential solutions with key stakeholders, including Tribal Nations, public utility commissions, State energy offices, transmission operators and regulators, utilities, OSW developers, cable and transmission providers, regional ocean coordinators, fisheries organizations, non-governmental organizations, and unions.
- Consulting with the National Oceanic and Atmospheric Administration, U.S. Coast Guard, U.S. Department of Defense, and U.S. Army Corps of Engineers on the above, as well as on ways that Federal transmission permitting could be coordinated as a Federal family.
- Completing a literature review and a gaps and data analysis regarding ongoing efforts on OSW transmission and potential barriers to adequate transmission.
- Developing a technical assistance and convening plan, including articulation of specific challenges that will be addressed and proposed solutions for discussion.
- Initiating an OSW transmission study for the Atlantic interconnect region.

The new Interregional and Offshore Transmission Planning (IOTP) program will build upon this foundation to facilitate collaborative and coordinated planning for phased transmission development that allows for the grid interconnection, integration, and interoperability of OSW along U.S. coasts in a way that:

- Identifies a coordinated generation and transmission pathway to meeting the Administration's 2030 and 2050 offshore wind deployment goals
- Improves grid reliability and resilience and minimizes congestion and curtailment
- Aligns with near-term and long-term State and Federal decarbonization goals, and utility resource needs
- Seeks to minimize environmental and community impacts, institutionalizes energy justice and equity in transmission planning, promotes ocean co-use, and aligns with Tribal equities
- Identifies potential system benefits, cost allocation approaches, and cost efficiencies to maximize the utility of existing points of interconnection and future shared transmission infrastructure

Within the Department, the IOTP program closely collaborates with EERE WETO to ensure OSW technologies align with transmission needs.

Highlights of the FY 2023 Budget Request

The IOTP requests resources to expand the work started on the Atlantic coast in FY 2022 under 3 coordinated efforts: Technical Assistance, Convening, and Analysis.

- *Technical Assistance:* provide funding mechanisms to encourage OSW electricity transmission and forward-looking transmission development for offshore wind integration. In FY 2023, IOTP will issue a funding opportunity announcement (FOA) or grants that will provide technical assistance to help future-proof the transmission system and reduce the overbuild risk for developers specifically to facilitate offshore wind deployment.
- *Analysis:* conduct planning, modeling, and analysis regarding OSW electricity transmission and transmission of electricity that is generated by offshore wind, taking into account the local, regional, and national economic, reliability, resilience, security, public policy, and environmental benefits of OSW electricity transmission and transmission of electricity that is generated by offshore wind. IOTP will extend OSW transmission analysis beyond the Atlantic coast, to include the Pacific, Great Lakes, and Gulf coasts. The program will partner with national organizations, such as the National Governors Association (NGA), National Association of Regulatory Utility Commissioners (NARUC), and National Association of State Energy Officials (NASEO), as well as Federal Agencies, national laboratories, and Tribal Nations to provide needed research and educational resources. Potential analytical products could include system benefits, cost allocation, cost efficiencies, and other topics requested by stakeholders.
- *Convening:* Host workshops for stakeholder engagement and pay expenses associated with convening relevant stakeholders, including States, generation and transmission developers, regional transmission organizations, independent system operators, environmental organizations, Indian Tribes, and other stakeholders the Secretary determines appropriate, to address the development of OSW electricity transmission and transmission of electricity that is generated by offshore wind. The purpose of these workshops will be to codify a radial and network-ready strategy for OSW development in the Northeast.

**Interregional and Offshore Transmission Planning
Funding (\$K)**

	FY 2021 Enacted	FY 2022 Enacted Annualized CR^a	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
Interregional and Offshore Transmission Planning					
Technical Assistance	0	–	15,000	+15,000	N/A
Analysis	0	–	2,500	+2,500	N/A
Convening	0	–	2,500	+2,500	N/A
Total, Interregional and Offshore Transmission Planning	0	0	20,000	+20,000	N/A

**Interregional and Offshore Transmission Planning
Explanation of Major Changes (\$K)**

	FY 2023 Request vs FY 2021 Enacted
• Technical Assistance: Provides funding mechanisms to encourage OSW electricity transmission	+15,000
• Analysis: Supports planning, modeling, and analysis regarding OSW electricity transmission	+2,500
• Convening: Supports travel expenses for stakeholders to attend convenings for OSW transmission discussions to ensure robust participation	+2,500
Total, Interregional and Offshore Transmission Planning	+20,000

^a FY 2022 amounts shown reflect the P.L. 117–95 continuing resolution (CR) level annualized to a full year. These amounts are shown only at the “congressional control” level and above; below that level, a dash (–) is shown.

Interregional and Offshore Transmission Planning

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
Interregional and Offshore Transmission Planning \$0	\$20,000,000	+\$20,000,000
<i>Technical Assistance \$0</i>	<i>\$15,000,000</i>	<i>+\$15,000,000</i>
	<ul style="list-style-type: none"> Issue FOA/grants to facilitate transmission development to connect OSW 	<ul style="list-style-type: none"> New program in 2023
<i>Analysis \$0</i>	<i>\$2,500,000</i>	<i>+\$2,500,000</i>
	<ul style="list-style-type: none"> Conduct planning, modeling, and analysis regarding OSW electricity on topics informed by stakeholders and industry groups 	<ul style="list-style-type: none"> New program in 2023
<i>Convening \$0</i>	<ul style="list-style-type: none"> <i>\$2,500,000</i> 	<ul style="list-style-type: none"> <i>+\$2,500,000</i>
	<ul style="list-style-type: none"> Conduct 5 stakeholder workshops and codify a radial and network-ready strategy for OSW development in the Northeast 	<ul style="list-style-type: none"> New program in 2023

Program Direction

Overview

Program Direction provides for the costs associated with the Federal workforce, including salaries, benefits, travel, training, building occupancy, IT services, security clearance, and other related expenses. It also provides for the costs associated with contractor services that, under the direction of the Federal workforce, support the Grid Deployment Office (GDO) mission.

Salaries and Benefits support Federal employees who provide executive management, programmatic oversight, and analysis for the effective implementation of the GDO program. This includes staff at Headquarters and at the National Energy Technology Laboratory (NETL). While GDO funds NETL staff within its budget, the NETL Federal employees are included within the full-time equivalent (FTE) total for the Fossil Energy Research and Development account.

Travel includes transportation, subsistence, and incidental expenses that allow GDO to effectively provide the Department's electricity-related outreach to regions, states, and tribes regarding planning needs and issues, policies, siting protocols, and new energy facilities.

Support Services includes contractor support directed by the Federal staff to perform administrative tasks and provide analyses to management. These efforts include issue-oriented support on science, engineering, environment, and economics that benefit strategic planning; technology and market analysis to improve strategic and annual goals; development of management tools and analyses to improve overall office efficiency; assistance with communications and outreach to enhance GDO's external communication and responsiveness to public needs; development of program-specific information tools that consolidate corporate knowledge, performance tracking and inventory data, improve accessibility to this information, and facilitate its use by the entire staff.

Other Related Expenses includes corporate IT support (for DOE's Energy Information Technology Services [EITS] desktop services and IT equipment) and working capital fund (WCF) expenses, such as rent, supplies, copying, graphics, mail, printing, and telephones. It also includes office safety requirements, equipment upgrades and replacements, commercial credit card purchases using simplified acquisition procedures where possible, security clearance expenses, and other needs.

Highlights of the FY 2023 Budget Request

The FY 2023 Program Direction Request reflects increased staffing to support the new and expanded program activities requested for GDO in FY 2023.

**Program Direction
Funding (\$K)**

	FY 2021 Enacted	FY 2021 Enacted (Comparable)^a	FY 2022 Enacted Annualized CR^b	FY 2022 CR (Comparable)^a	FY 2023 Request	FY 2023 Request vs FY 2021 Comp. (\$)	FY 2023 Request vs FY 2021 Comp. (%)
Program Direction Summary							
Washington Headquarters							
Salaries and Benefits	0	1,960	–	–	2,856	+896	+45.7%
Travel	0	50	–	–	50	0	0.0%
Support Services	0	363	–	–	885	+522	+143.8%
Other Related Expenses	0	297	–	–	1,244	+947	+318.8%
Total, Washington Headquarters	0	2,670	–	–	5,035	+2,365	+88.6%
National Energy Technology Laboratory							
Salaries and Benefits	0	232	–	–	232	0	0.0%
Travel	0	30	–	–	30	0	0.0%
Support Services	0	51	–	–	51	0	0.0%
Other Related Expenses	0	17	–	–	173	+156	+1070.5%
Total, National Energy Technology Laboratory	0	330	–	–	486	+156	+47.2%
Total Program Direction							
Salaries and Benefits	0	2,192	–	–	3,088	+896	+40.9%
Travel	0	80	–	–	80	0	0.0%
Support Services	0	414	–	–	936	+522	+126.0%
Other Related Expenses	0	314	–	–	1,417	+1,103	+351.2%
Total, Program Direction	0	3,000	0	3,000	5,521	+2,521	+84.0%

^a The FY 2023 Budget Request to Congress proposes to split the Electricity appropriation account into two accounts: Electricity and Grid Deployment Office (GDO). To allow an apples-to-apples comparison with the FY 2023 Request, the comparable amounts for FY 2021 and FY 2022 include a portion of OE Program Direction funding equivalent to what would have been in GDO had the proposed structure been in place in FY 2021 and FY 2022.

^b FY 2022 amounts shown reflect the P.L. 117–95 continuing resolution (CR) level annualized to a full year. These amounts are shown only at the “congressional control” level and above; below that level, a dash (–) is shown.

	FY 2021 Enacted	FY 2021 Enacted (Comparable) ^a	FY 2022 Enacted Annualized CR ^b	FY 2022 CR (Comparable) ^a	FY 2023 Request	FY 2023 Request vs FY 2021 Comp. (\$)	FY 2023 Request vs FY 2021 Comp. (%)
Federal FTEs	0	7	–	–	17	+10	+142.8%
Additional FE FTEs at NETL supporting GDO ^a	0	1	–	–	1	0	0.0%
Total GDO-funded FTEs	0	8	–	–	18	+10	+125.0%
Support Services and Other Related Expenses							
Support Services							
Technical Support	0	220	–	–	496	+276	+125.4%
Management Support	0	194	–	–	440	+246	+126.8%
Total, Support Services	0	414	–	–	936	+522	+126.0%
Other Related Expenses							
Other Services	0	16	–	–	371	+355	+221.8%
EITS Desktop Services	0	62	–	–	334	+272	+438.7%
WCF	0	236	–	–	712	+476	+201.6%
Total, Other Related Expenses	0	314	–	–	1,417	+1,103	+351.2%

^a GDO funds FTEs at FE's National Energy Technology Laboratory who support GDO activities. The FTEs are included in FE's FTE totals and not in the GDO FTE totals shown on the "Federal FTEs" line.

Program Direction

Activities and Explanation of Changes

FY 2021 Enacted (Comparable)	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
Program Direction \$3,000,000	\$5,521,000	+\$2,521,000
<i>Salaries and Benefits \$2,192,000</i>	<i>\$3,088,000</i>	<i>+\$896,000</i>
<ul style="list-style-type: none"> Salaries and Benefits support 8 FTEs at HQ and NETL that provide executive management, programmatic oversight, and analysis for the effective implementation of the GDO program 	<ul style="list-style-type: none"> Salaries and Benefits support 18 FTEs at HQ and NETL that provide executive management, programmatic oversight, and analysis for the effective implementation of the GDO program 	<ul style="list-style-type: none"> Supports the 2023 Federal pay increase and 10 new FTE's
<i>Travel \$80,000</i>	<i>\$80,000</i>	<i>\$0</i>
<ul style="list-style-type: none"> Travel includes transportation, subsistence, and incidental expenses that allow GDO to effectively facilitate its mission 	<ul style="list-style-type: none"> Travel includes transportation, subsistence, and incidental expenses that allow GDO to effectively facilitate its mission 	<ul style="list-style-type: none"> No increase projected
<i>Support Services \$414,000</i>	<i>\$936,000</i>	<i>+\$522,000</i>
<ul style="list-style-type: none"> Support Services includes contractor support directed by the Federal staff to perform administrative tasks and provide analysis to management. Support Services may include support for post-doctoral fellows and IPA assignments 	<ul style="list-style-type: none"> Support Services includes contractor support directed by the Federal staff to perform administrative tasks and provide analysis to management. Support Services may include support for post-doctoral fellows and IPA assignments 	<ul style="list-style-type: none"> Increase in support services to support due to the 10 new FTE's
<i>Other Related Expenses \$314,000</i>	<i>\$1,417,000</i>	<i>+\$1,103,000</i>
<p>Other Related Expenses includes EITS desktop services and WCF expense, such as rent, supplies, copying, graphics, mail, printing, and telephones. It also includes equipment upgrades and replacements, commercial credit card purchases using the simplified acquisition procedures to the maximum extent possible, security clearance expenses and other needs</p>	<ul style="list-style-type: none"> Other Related Expenses includes EITS desktop services and WCF expense, such as rent, supplies, copying, graphics, mail, printing, and telephones. It also includes equipment upgrades and replacements, commercial credit card purchases using the simplified acquisition procedures to the maximum extent possible, security clearance expenses and other needs 	<ul style="list-style-type: none"> Other Related Expenses increases due to 10 new FTE's

Indian Energy Policy and Programs

Indian Energy Policy and Programs

**Office of Indian Energy
(\$K)**

FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request
\$22,000	\$22,000	\$150,039

Overview

The Office of Indian Energy Policy and Program’s (IE) financial and technical assistance are beneficial to: promoting tribal energy development, efficiency, and use; reducing or stabilize energy costs; enhancing and strengthening tribal energy and economic infrastructure; and bringing electrical power and service to Indian land and homes -- with the ancillary benefit of providing employment on Tribal Lands and Alaska Native communities. IE achieves the mission through financial assistance, technical assistance, education, and outreach. This assistance is intended to overcome barriers to energy development, increase energy reliability and resiliency, and electrify lands and homes.

Financial Assistance will continue to provide funding toward energy development and electrification in Native American and Alaska Native communities. The FY 2023 Budget provides a major increase in funding for IE to support the two multi-year initiatives begun in FY 2022: 1) transition all of the nation’s tribal colleges and universities to renewable energy; and 2) electrify the roughly 30,000 tribal homes that currently lack electricity. Both efforts will include supporting a substantial interagency coordinated tribal energy job training component. DOE will work together with USDA and DOI to ensure that incentives are properly aligned, the right mix of loans, grants, and technical assistance is deployed, and the objectives are achieved as cost-effectively as possible, while fully respecting tribal sovereignty and self-determination. The FY 2023 Budget also provides funding increases to expand its current efforts for the transition of Indian Country to clean energy.

Since 2010, DOE's Office of Indian Energy has invested over \$114 million in more than 200 tribal energy projects. Recipient cost share of over \$80 million has leveraged Indian energy investments to have resulted in immediate and tangible impacts in American Indian and Alaska Native communities. Seventy-five percent of those investments have been in hardware installation projects which have resulted in more than 43-megawatts (MW) of new generation, and more than 10-megawatthours (MWh) of new battery storage, providing electricity to over 8,600 tribal buildings across the Nation. These investments have saved over \$13.7 million annually and are estimated to save over \$295 million over the life of these systems, resulting in \$3.46 saved for every DOE dollar invested.

In FY 2021, Indian Energy provided \$12 million across 13 different American Indian and Alaska Native communities. These Project included over 3.5 MW in clean energy generation and over 3.5 MW in battery storage in Indian Country, with savings of over \$1.8 million annually. Indian Energy also provided \$14.8 million in cost share reductions to 27 grantees to provide some financial relief to Native communities struggling with COVID.

Technical Assistance leverages DOE laboratories and partner organizations to facilitate expeditious energy deployment. By building internal technical capability , local support is being provided, and tribal capacity is increased. Technical assistance is provided at no cost to address a specific technical or financial barrier or to assist with energy planning. Since 2010, nearly 400 technical assistance requests have been completed, providing technical, financial and energy planning expertise to bear on overcoming barriers to Indian energy development.

**Office of Indian Energy
Appropriation Level and Program Level Funding (\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
Assistance Programs¹					
Financial Assistance	15,810	15,810	123,212	107,402	679%
Technical Assistance	1,190	1,190	6,524	5,334	448%
Total, Assistance Programs	17,000	17,000	129,736	112,736	663.2%
Program Direction					
Salaries and Benefits	1,986	1,986	4,856	2,870	145%
Travel	75	75	265	190	253%
Support Services	2,579	2,579	11,879	9,300	361%
Other Related Expenses	360	360	3,303	2,943	817%
Total, Program Direction	5,000	5,000	20,303	15,303	306.1%
Total, Office of Indian Energy	22,000	22,000	150,039	128,039	582%
Federal FTEs	12	15	29	14	93.3%

¹ Formerly named Tribal Energy Program which was an EERE Program

Outyear Funding

(\$K)

	FY 2023 Request	FY 2024	FY 2025	FY 2026	FY 2027
Office of Indian Energy Policy and Program	150,039	153,000	157,000	161,000	167,000

Major Outyear Priorities and Assumptions

Outyear funding levels for 2023 Appropriation total \$635,000,000 for FY 2024 through FY 2027. 2023 Appropriation priorities include the following:

- deployment/grants management (tribal building energy efficiency retrofit, new generation/construction, net-zero tribal college campuses)
- capacity building/workforce development (participation in education (traditional students)), worker training, workforce transition, tribal leader capacity-building, energy leader social capital investment),
- policy analysis and support (state/tribal utility commission policy portfolio integration analysis, examination of the policy implications of new technologies, improving access to capital)

Office of Indian Energy Assistance Programs

Overview

The Office of Indian Energy Policy and Programs (IE) serves all federally recognized Indian tribes, which include Alaska Native Regional Corporations and Village Corporations, as well as tribal and intertribal organizations, and tribal energy development organizations. Numerous factors burden Indian tribes interested in developing their vast energy resources. Energy and infrastructure development in Indian Country is constrained due to limited funding and financing, inadequate infrastructure, limited technical capacity, and a complicated legal and regulatory structure governing Indian lands. As a result, Native Americans are three times as likely to live in overcrowded housing and with inadequate infrastructure, about one in four (25%) of American Indians and Alaska Natives lives in poverty² and unemployment rates are twice as high as those among non-Indians nationally³. Additionally, more than 175 Alaska Native villages rely almost exclusively on diesel fuel for electricity and oil for heat. In some communities, electricity costs exceed \$1.00/kilowatt-hour, more than eight times the national average of \$0.12/kilowatt-hour⁴.

In consultation with Tribal Leaders, Alaska Native Regional Corporations and other constituents, IE achieves its mission by promoting Indian energy development, electrifying Indian Country, and helping to reduce or stabilize the cost of electricity. IE achieves the mission through financial assistance, technical assistance, and education and outreach.

Financial assistance, primarily through competitive grants to Indian tribes and other eligible tribal entities, supports the deployment of energy infrastructure, efficiency and electrification projects, reducing energy costs, increasing reliability and resiliency, and building human capacity within and among tribes.

In the area of technical assistance, IE is transitioning to become more effective and efficient using local Subject Matter Experts (SME's) to assist Native American and Alaska Native communities in developing energy projects and providing support for energy planning. In Alaska, this was implemented through an interagency agreement with the Denali Commission for local SME's.

Policy initiatives include coordination and collaboration with various sectors of government that are critical to investment, job creation, project development, and operation of energy systems throughout Indian Country, including the Indian Country Energy and Infrastructure Working Group (ICEIWG). ICEIWG advises the Secretary of Energy on behalf of Indian tribes on their policy priorities. Policy analysts survey energy needs and energy resources on Indian lands, including available infrastructure support, and develop strategies for electrification and energy deployment and development. Policy initiatives also include coordination and collaboration through a Memorandum of Understanding with the Department of the Interior on issues including electrification and energy development in Indian Country.

Highlights and Major Changes in the FY 2023 Budget Request

² U.S. Census Bureau. Macartney, S., Bishaw, A., Fontenot, K. Poverty Rates for Selected Detailed Race and Hispanic Groups by State and Place: 2007 – 2011.

<https://www.census.gov/library/publications/2013/acs/acsbr11-17.html>. Accessed April 2017.

³ U.S. Department of Housing and Urban Development. Public and Indian Housing, Native American Housing Block Grants 2017 Summary Statement and Initiatives. https://portal.hud.gov/hudportal/documents/huddoc?id=11-Nat.Am_HSNG_BIK_Grants.pdf. Accessed April 2017.

⁴ Schwabe, P. (2016). *Solar Energy Prospecting in Remote Alaska: An Economic Analysis of Solar Photovoltaics in the Last Frontier State* (No. NREL/TP-6A20-65834; DOE/IE-0040). NREL (National Renewable Energy Laboratory (NREL), Golden, CO (United States). <https://energy.gov/sites/prod/files/2016/02/f29/Solar-Prospecting-AK-final.pdf>. Accessed April 2017.

IE's FY 2023 budget priorities are continuing and expanding efforts towards (1) universal energy access for Indian country, (2) 100% renewable tribal colleges and universities; (3) transitioning Indian Country to clean energy; and (4) building capacity in Indian Country.

Universal Energy Access for Indian Country

Tens of thousands of U.S. citizens living on tribal reservations currently live in homes without electricity. Without electricity, these families lack access to what many consider basic necessities like wired lights, computers, and refrigeration. The Department of Energy, working through the Office of Indian Energy, seeks to remedy this inequitable situation and bring clean energy to every tribal home that wants it. IE will work in partnership with the US Department of Agriculture (USDA), the Department of the Interior (DOI), States, Tribes, and local utilities to ensure that incentives are properly aligned, the right mix of loans, grants, and technical assistance is deployed, and that universal electrification is achieved as cost-effectively as possible, while fully respecting tribal sovereignty and self-determination.

100% Renewable Tribal Colleges and Universities

Tens of thousands of tribal students study at the nation's 37 tribal colleges and universities each year⁵ – seeking an education that will lead to meaningful work that will help their homelands and provide good paying jobs for their families. This initiative will combine the ingenuity of tribal students with the vast energy potential of tribal lands to bring renewable energy projects to every tribal college and university in the nation, with the ultimate goal of those schools being powered by 100% renewable energy. Students will be engaged in hands-on learning, with opportunities to help plan, design, and install renewable projects at their schools – helping to equip them to go on to good paying jobs in the renewable energy sector.

Transitioning Indian Country to Clean Energy

Building on past successes, IE will expand efforts to transition Native American and Alaska Native communities to clean energy while building local economies, stabilizing and reducing energy costs and building local capacity. Native communities pay some of the highest energy costs in the Country. By transitioning to clean energy Native Nations can tap into their vast energy resources, build local economies and internal capacity and increase resiliency for future generations.

Capacity Building

Indian country has only just barely tapped into its vast energy resources. IE will work through technical assistance, education, and outreach to build skills and knowledge in Indian country to take advantage of these energy resources, provide good paying jobs, and power Indian country with renewable energy. IE will partner with tribal climate and energy education programs to train and build capacity of community members, college students, and professionals in Indian Country – and – expand IE's local network of technical assistance providers to improve effectiveness and efficiency and to target the needs of tribes using local experts.

⁵ American Council on Education Issue Brief (C. Nelson and J. Frye). *Tribal College and University Funding: Tribal Sovereignty at the Intersection of Federal, State, and Local Funding* (2016). <https://www.acenet.edu/Documents/Tribal-College-and-University-Funding.pdf#:~:text=Tribal%20colleges%20and%20universities%20%28TCUs%29%20continue%20to%20provide,enroll%20nearly%2028%2C000%20full-%20and%20part-time%20students%20annually>. Accessed March 25, 2022.

**Indian Energy
Assistance Programs
Activities and Explanation of Changes**

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
Assistance Programs \$17,000,000	\$129,736,000	\$112,736,000
Financial Assistance \$15,810,000	\$123,211,563	\$107,401,563
Competitive grant program supporting energy development and electrification in Indian Country, and associated support contracts.	Competitive grant program supporting energy development and energy access in Indian Country, and associated support contracts. Financial Assistance: Maximize available funding for financial assistance awards and expand opportunities for historically underserved populations, including those who have not received funding from IE.	Continue to provide grants for energy development, energy cost savings, and energy access in Indian Country. Increase energy access into tribal homes and partner with tribal colleges and universities to transition to clean energy.
Technical Assistance \$1,190,000	\$6,524,437	\$5,334,437
Technical Assistance disseminates information to Indian Country through in-person and on-line training, internships, regional/national workshops, webinars, and printed guides and materials.	Technical Assistance: Reconfigure technical assistance by expanding the network of local service providers to improve effectiveness and efficiency and to target needs of tribes.	Continue to expand technical assistance focused on energy development, energy cost savings, and energy access in Indian Country.
On-request assistance efforts provides high-level support for electrification and energy development in Indian Country.	Education and Outreach: Expand STEM ⁶ education and internship programs, vocational/technical opportunities, and non-traditional students, and increase outreach efforts to engage American Indian and Alaska Native communities and better educate the public on tribal energy potential, development challenges, and viable deployment solutions.	Partner with tribal climate and energy education programs to train and build capacity of community members, college students, and professionals in Indian Country.
Efforts will also focus on building partnerships and leveraging resources to maximize education, training, and technical assistance.		

⁶ Science, technology, engineering, and mathematics (STEM) is a broad term used to group together these academic disciplines.

**Office of Indian Energy
Program Direction**

Overview

Program direction provides federal staff responsible for the management and execution of IE's programs and activities, as well as the associated support contractors, rent, supplies, travel, and other related expenses. The staff is responsible for providing overall guidance and direction for DOE program offices on tribal energy activities and initiatives necessary to achieve IE's program objectives and provides day-to-day management of financial assistance, technical assistance, and outreach and capacity building efforts. Program direction also provides managerial support for the reporting, compliance, and other statutory responsibilities.

The FY 2023 Budget anticipates 29 federal staff: 10 FTEs in Washington, D.C., 5 FTEs in Anchorage, Alaska, and 14 FTEs in Golden, Colorado. The Washington, D.C. staff includes executive leadership, operations, and policy analysis. The Anchorage, Alaska staff provides education and technical assistance for the nearly 230 Alaska Native villages, over 200 Alaska Native Village Corporations, and 13 Alaska Regional Corporations. The Golden, Colorado staff provides management and oversight for approximately 80 existing financial assistance awards throughout the nation, while delivering technical assistance within the contiguous U.S. for nearly 340 Indian tribes and dozens of tribal and intertribal organizations.

Highlights and Major Changes in the FY 2023 Budget Request

- Energy access: Expand efforts towards achieving 100% universal energy access for Indian country and address the inequities to provide basic necessities like wired lights, computes, and refrigeration.
- Education and Outreach: Expand STEM education and internship programs to include vocational/technical opportunities, and non-traditional students, as well as increasing stakeholder outreach efforts to better educate the public on tribal energy development challenges. Develop partnership with tribal climate and energy education programs to train and build capacity of community members, college students, and professionals in Indian Country;
- Increase outreach efforts to engage American Indian and Alaska Native communities and better educate the public on tribal energy potential, development challenges, and viable deployment solutions;
- Support project management and procurement across IE's portfolio of projects, including closing out completed financial assistance awards; and
- Maximize the efficient and effective use of additional resources to accomplish IE's new initiatives and core mission while reducing overall expenses and improving the delivery of IE's services in Indian Country.

**Program Direction Funding
(\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	FY 2023 Request vs FY 2021 Enacted (%)
Program Direction Summary					
Indian Energy Federal Salaries and Expenses					
Salaries and Benefits	1,986	1,986	4,856	2,870	145%
Travel	75	75	265	190	253%
Support Services	2,579	2,579	11,879	9,300	361%
Other Related Expenses	360	360	3,303	2,943	817%
Total, Washington Headquarters	5,000	5,000	20,303	15,303	306.1%
Federal FTEs	12	15	29	14	93.3%

**Office of Indian Energy
Program Direction
Activities and Explanation of Changes**

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
Program Direction \$5,000,000	\$20,303,000	\$15,303,000
Salaries and Benefits \$1,986,000	\$4,856,000	\$2,870,000
Federal Salaries and benefits to implement program activities, monitor 70 active projects, generally 15-20 TA requests in process, up to 10 contractor support activities, and provide program management functions.	31 Federal Salaries and benefits to implement new initiatives program activities, monitor 80 active projects, and increase in TA requests related to education/outreach environmental justice, energy access, and energy poverty.	The Increase in the federal staff will support the new initiatives and funding level.
Travel \$75,000	\$265,000	\$190,000
Travel required for Federal staff delivery of program management and Office of Indian Energy deployment activities, including outreach and education, technical assistance, and project management to support the 574 federally recognized Indian tribes throughout the nation, many of which are located in remote and rural areas.	Travel required for Federal staff delivery of program management and Office of Indian Energy deployment activities, including outreach and education, technical assistance, and project management to support the 574 federally recognized Indian tribes throughout the nation, many of which are in remote and rural areas.	Travel to support new initiatives, additional TA support, energy access, and education/outreach.
Support Services \$2,579,000	\$11,879,000	\$9,300,000
Management, administrative, mission and technical support.	Management, administrative, and operations support.	Contractual staff to support operations.
Other Related Expenses \$360,000	\$3,303,000	\$2,943,000
Computer hardware and software provided through the OCIO, Working Capital Fund, office space, registration fees, supplies, and small purchases through the micro-purchase credit card.	Computer hardware and software provided through the OCIO, Working Capital Fund, additional office space, registration fees, supplies, and small purchases through the micro-purchase credit card.	Other related expenses to support additional office space and operations.

**Loan
Programs
Office**

**Loan
Programs
Office**

**Loan Programs Office
Overview**

**Appropriation Summary by Program
\$K**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
Advanced Technology Vehicles Manufacturing Loan Program	5,000	5,000	9,800	+4,800	96%
Title 17 Innovative Technology Loan Guarantee Program					
Administrative Expenses	32,000	32,000	66,206	+34,206	107%
Title XVII Credit Subsidy	0	0	150,000	+150,000	N/A
Offsetting Collections	-3,000	-3,000	-48,000	-45,000	1500%
Total, Title 17 Innovative Technology Loan Guarantee Program	29,000	29,000	168,206	+139,206	480%
Tribal Energy Loan Guarantee Program	2,000	2,000	1,860	-140	-7%
Total, Loans Programs Office	36,000	36,000	179,866	+143,866	400%

The Loan Programs Office (LPO) FY 2023 Budget is \$179,866,000, an increase of \$143,866,000 above the FY 2022 Annualized CR and FY 2021 Enacted Level. LPO’s FY 2023 Budget will catalyze investment in innovative technologies across energy and manufacturing sectors supporting good paying jobs and promoting technological advances that increase energy affordability, performance, and efficiency.

**Future-Years Energy Program
\$K**

	FY FY2023 Request	FY 2024	FY 2025	FY 2026	FY 2027
Advanced Technology Vehicles Manufacturing Loan Program	9,800	10,000	10,000	11,000	11,000
Title 17 Innovative Technology Loan Guarantee Program					
Administrative Expenses	66,206	68,000	69,000	71,000	72,000
Title XVII Credit Subsidy	150,000	153,000	157,000	161,000	164,000
Offsetting Collections	-48,000	-49,000	-50,000	-51,000	-53,000
Total, Title 17 Innovative Technology Loan Guarantee Program	168,206	172,000	176,000	181,000	183,000
Tribal Energy Loan Guarantee Program	1,860	2,000	2,000	2,000	2,000

Outyear Priorities and Assumptions

In the FY 2012 Consolidated Appropriations Act (P.L. 112-74), Congress directed the Department to include a future-years energy program (FYEP) in subsequent requests that reflects the proposed appropriations for five years. This FYEP shows outyear funding for each account for FY 2024 - FY 2027. The outyear funding levels use the growth rates from and match the outyear account totals published in the FY 2023 President’s Budget for both the 050 and non-050 accounts. Actual future budget request levels will be determined as part of the annual budget process.

LPO’s Future-Years Energy Program (FYEP) will continue LPO’s proven track record of catalyzing the deployment of new energy technology and advanced technology vehicles while creating jobs.

LPO currently has over 77 formally submitted active applications for loans. The cumulative dollar amount of LPO financing

requested in these active applications is approximately \$70.8 billion as of February 2022. The interest in the LPO loan programs exceeds current and requested loan authority. The FYEP projects consistent resources for LPO to replenish direct loan and loan guarantee authority as existing authority is exhausted. The specific amount and allocation of resources for LPO programs will be refined in future Budget requests.

Overview

LPO's mission is to finance next-generation U.S. energy infrastructure, serving as a bridge to bankability for breakthrough projects and technologies and de-risking them at early stages of investment so they can be developed at commercial scale and achieve market acceptance. With more than \$40 billion of loan and loan guarantee authority available, LPO can provide access to debt not typically available in the commercial sector. LPO seeks to upgrade American infrastructure and develop a clean energy economy, in turn these achievements spur well-paying, union jobs and equitable economic growth through clean technology innovation, commercialization, manufacturing, and deployment; and bolsters domestic supply chains and promoting globally competitive American clean energy exports.

Title 17 Innovative Technology Loan Guarantee (Title 17) Program – Authorized by Title XVII of the Energy Policy Act of 2005. The program offers loan guarantees to accelerate the commercial deployment of innovative energy technology that avoid, reduce, or sequester anthropogenic greenhouse gas emissions or other air pollutants.

The Title 17 Loan Guarantee Program provides loan guarantees for innovative energy projects that include energy efficient and renewable energy systems, advanced nuclear facilities, advanced fossil and carbon capture, sequestration, utilization and storage systems, energy storage, virtual power plants, and various other types of projects. Through the Title 17 program, the Loan Programs Office (LPO) provides access to debt capital for high-impact and large-scale energy infrastructure projects and first-time commercial deployments in the United States.

The FY 2023 Budget supports the Administration's objectives by bolstering deployment of domestic clean energy projects through newly expanded authorities in the Bipartisan Infrastructure Law (BIL). This includes (1) supporting eligible projects that bolster the domestic critical minerals supply chain and (2) financing to support State, Tribal, and Alaska Native corporation-backed energy projects.

In FY 2023, LPO requests \$150 million for Title 17 credit subsidy costs, associated with an additional \$5 billion of loan guarantee authority open to a range of eligible projects. The Budget would increase available Title 17 loan authority by \$5 billion from \$22.4 billion to \$27.4 billion. The Department expects to obligate approximately \$6 billion of loan authority in FY 2022 and \$4.5 billion of loan authority in FY 2023. The FY 2023 Budget also includes \$66 million, offset by an estimated \$48 million in offsetting collections, for administrative expenses to continue originating loans for the Title 17 Loan Guarantee Program, as well as to effectively monitor the existing portfolio.

Advanced Technology Vehicles Manufacturing Program (ATVM) – Authorized by Section 136 of Energy Independence and Security Act of 2007, P.L. 110-140 as amended. ATVM provides loans to advanced technology vehicle and part manufacturers for the cost of re-equipping, expanding, or establishing manufacturing facilities in the United States to produce advanced technology vehicles or qualified components and for associated engineering integration costs.

LPO has \$17.7 billion in loan authority to support the manufacture of eligible light-duty vehicles and qualifying components under the Advanced Technology Vehicles Manufacturing Loan Program (ATVM). To date, vehicles manufactured with support from ATVM are estimated to have saved over 19 billion gallons of gasoline since 2009, and maintained more than 35,000 direct jobs across eight states. LPO's ATVM loan program has played a key role in helping the American auto industry propel the resurgence of manufacturing in the United States.

LPO is receiving considerable interest in loans to finance the manufacturing of medium- and heavy-duty vehicles and their components. The FY 2023 Budget proposes a new general provision to allow existing loan authority and previously appropriated funds to be used to support newly expanded advanced technology vehicle modes authorized in the Bipartisan Infrastructure Law (BIL). These include advanced medium- and heavy-duty vehicles, locomotives, maritime vessels, aircraft, and hyperloop technology.

While the FY 2023 Budget does not request new loan authority, LPO anticipates utilizing all remaining \$17.7 billion ATVM loan authority by the end of FY 2023 -- closing approximately \$5 billion in loans in FY 2022, and \$13 billion in FY 2023 – and

justifying the requested increase for administrative expenses to originate loans while effectively monitoring the existing portfolio.

Tribal Energy Loan Guarantee Program (TELGP) – Authorized by Title XXVI of the Energy Policy Act of 1992, as amended. The program allows DOE to guarantee up to 90 percent of the unpaid principal and interest due on any loan made to a federally recognized Indian tribe or Alaska Native Corporation for energy development.

The Tribal Energy Loan Guarantee Program (TELGP) is a partial loan guarantee program that can guarantee up to \$2 billion in loans to support economic opportunities to tribes through energy development projects and activities. Due to the timing of FY 2022 appropriations and FY 2023 Budget formulation, the Budget appendix and credit supplement report were unable to reflect the direct loan authority. However, the Administration supports continuing in FY 2023 the language enacted by Congress in the Consolidated Appropriations Act, 2022, that broadens TELGP authority to allow applicants to apply to LPO for direct loans via the United States (U.S.) Treasury Federal Financing Bank guaranteed by the Department, in addition to partial loan guarantees. In addition to planned changes in FY 2022 to the TELGP solicitation to clarify ownership requirements, lending obligations, and fees – is expected to increase interest in and accessibility to TELGP loans.

Organization

The Loan Programs Office (LPO) is currently organized in seven divisions: Outreach and Business Development Division, Origination Division, Portfolio Management Division, Risk Management Division, Technical and Project Management Division, Legal Division, and Management Operations Division.

The Outreach and Business Development Division is charged with identifying and establishing relationships with potential applicants and other external stakeholders deemed necessary to help meet LPO's strategic objectives.

The Origination Division is responsible for coordinating the assessments of applications and leads the credit underwriting of transactions and the negotiating, closing, and first disbursements of loans or loan guarantees.

The Portfolio Management Division (PMD) leads LPO's monitoring functions by approving disbursements, repayments, operating budgets, and long-term forecasts. In the event of non-payment and/or default, PMD leads activities to maximize recoveries to the government.

The Risk Management Division conducts continuous risk assessments of the assets in the portfolio to comply with regulatory requirements such as OMB Circular No. A-129 of the Federal Credit Reform Act.

The Technical and Project Management Division (TPMD) evaluates the technical performance of assets and project management throughout the entire lifecycle of the loan to ensure that the technical requirements of the loan agreement are met. TPMD also ensures that applicants' projects meet federal environmental regulatory standards by helping applicants navigate through required reviews and consultations prior to loan closing.

The Legal Division supports legal aspects of any project origination and all on-going monitoring activities, negotiations and documentations of waivers, consents, routine loan amendments, approvals and denials of transfer withdrawals, and. The division participates in business development and outreach activities.

The Management and Operation Division is responsible for LPO employee resources, administrating and monitoring LPO administrative and working capital funds, providing enterprise architecture and information technology support, and providing contract administration to obtain services.

**Advanced Technology Vehicles Manufacturing Loan Program
Proposed Appropriation Language**

For Department of Energy administrative expenses necessary in carrying out the Advanced Technology Vehicles Manufacturing Loan Program, [\$5,000,000] *\$9,800,000*, to remain available until September 30, [2023] 2024.
(Continuing Appropriations Act, 2022 (Division A of P.L. 117-43, as amended))

Explanation of Changes

The FY 2023 Budget requests \$9.8 million for Administrative Expenses to continue to support portfolio monitoring and the anticipated increased loan origination activities under the Advanced Technology Vehicles Manufacturing Loan Program. The proposed language above shows changes from the FY 2022 annualized continuing resolution. The Budget proposes, in the Department of Energy General Provisions language, to amend and contravene the BIL provisions that prohibit using existing ATVM loan authority for the expanded technology areas. These include advanced medium- and heavy-duty vehicles, locomotives, maritime vessels, aircraft, and hyperloop technology.

Public Law Authorizations

- P.L. 110-140, Energy Independence and Security Act of 2007, as amended
- P.L. 110-329, Consolidated Security, Disaster Assistance, and Continuing Appropriations Act of 2009
- P.L. 117-58, Infrastructure Investment and Jobs Act

Overview

The Budget proposes \$9.8 million for Administrative Expenses to originate Advanced Technology Vehicle Manufacturing (ATVM) Loan Program direct loans and continue the program's portfolio monitoring responsibilities. While the FY 2023 Budget Request does not request new loan authority, LPO anticipates utilizing all remaining \$17.7 billion ATVM loan authority by the end of FY 2023 -- closing an estimated \$5 billion in loans in FY 2022, and \$13 billion in FY 2023 -- which this increase for Administrative Expenses in FY 2023 would support.

ATVM provides loans to advanced technology vehicle and component part manufacturers for the cost of re-equipping, expanding, or establishing manufacturing facilities in the United States (U.S.) to produce advanced technology vehicles or qualified components and for associated engineering integration costs.

The program has been key in propelling the resurgence of the American auto manufacturing industry and accelerating U.S. electric vehicle (EV) manufacturing. The Budget will allow LPO to continue growing the portfolio of this crucial program, and achieve the Administration's goal of reaching net-zero emissions, economy-wide, by 2050. This includes providing access to capital for domestic manufacturers revitalizing U.S. manufacturing, creating good-quality jobs, electrifying vehicles, securing domestic supply chains from raw materials to parts, and retooling factories to compete globally. This effort is directly responsive to the need to address critical advanced technology vehicle supply chain vulnerabilities as identified in Executive Order 14017, America's Supply Chains, and the subsequent 100-Day Reviews, both of which call for investment in advanced technology vehicle components including EV batteries and critical minerals manufacturing and processing.

The FY 2023 Budget supports the Administration's objectives by bolstering domestic advanced technology vehicle supply chains through newly expanded advanced technology vehicle modes authorized in the Bipartisan Infrastructure Law (BIL). These include advanced medium- and heavy-duty vehicles, locomotives, maritime vessels, aircraft, and hyperloop technology. Prior to the passage of the BIL, ATVM authorities were limited to supporting manufacturing of light-duty vehicles and components. While BIL authorities expanded the types of advanced technology vehicles that could be considered for financing, it prohibited LPO from using existing loan authority to finance such projects. The FY 2023 Budget requests authority to use the existing funds to support these expanded activities. The Budget proposes, in the Department of Energy General Provisions language, to amend and contravene the BIL provisions that prohibit using existing ATVM loan authority for the expanded technology areas. LPO believes the expanded authorities provided through BIL can be leveraged by the ATVM program to reduce transportation emissions and create good paying jobs that provide the free and fair choice to join a union.

Through ATVM, LPO will focus on projects that support the transition to zero-emission vehicles by excluding projects that manufacture gas-only light duty vehicles. Under the expanded definition of advanced technology vehicle, highly efficient fossil fueled medium- and heavy- duty vehicle manufacturing projects would be permitted to pursue a loan, though zero-emission vehicles would be encouraged.

History

Section 136 of the Energy Independence and Security Act of 2007 established the Advanced Technology Vehicles Manufacturing (ATVM) Loan Program, consisting of direct loans of up to \$25 billion in total loan authority to support the development and manufacturing of advanced technology vehicles and qualifying components in the U.S. The ATVM Loan Program has issued 5 total loans, of which over \$8 billion has been obligated¹ and disbursed to borrowers including Tesla, Nissan, and Ford. Together, these borrowers have repaid a collective \$6 billion in principal, plus \$1 billion in interest. Tesla and Nissan have repaid their loans in full; Ford continues to make active and on-time principal and interest payments.

The Loan Programs Office can provide first-of-a-kind projects and other high-impact ventures with access to debt capital that private lenders cannot or will not provide, given the lack of history with new technology that is considered cutting edge. LPO is a committed partner in the early stages of development and throughout the lifetime of the project while monitoring the loans provided. The advanced technologies being proposed and developed will contribute to the reduction of carbon emissions and create new job opportunities with a free and fair choice to join a union.

¹ Net of recoveries

To date, projects that have been financed in part by ATVM loans have produced vehicles that are estimated to have saved over 19 billion gallons of gasoline. Projects supported by the program currently produce approximately 250,000 low-emission vehicles annually, with over 20 million vehicles produced since the program’s inception, and has maintained 35,000 operations jobs across 8 states. Currently, the only active project in the portfolio is a \$5.9 billion loan with the Ford Motor Company.

<i>Portfolio Project Data</i>		<i>ATVM – 02/28/2022*</i>
<i>Total Number of Active Projects</i>		1
<i>Number of Projects in Construction</i>		0
<i>Number of Projects in Operation</i>		1
<hr/>		
<i>Production Capacity (Million vehicles/year)</i>		0.25
<i>Vehicles Produced (Millions, Cum.)</i>		20
<i>CO₂ Avoided (Mtons, Cum.)</i>		25

** Most recent available data based on company reporting cycles*

The ATVM program provides debt capital to companies seeking to manufacture a range of advanced technology vehicles and associated components in the United States.

The FY 2023 Budget will allow LPO to continue Outreach and Business Development activities, including developing marketing materials, engaging in stakeholder outreach, and ensuring that LPO’s unique value proposition is widely known across the entire advanced technology vehicles manufacturing supply chain. LPO outreach efforts will focus on attracting quality applications into ATVM’s applicant pipeline and moving those applications through conditional commitment to financial close. LPO’s business development services work in close coordination with the program’s in-house financial, technical, environmental, and legal team of experts advising companies on how to submit successful applications under the ATVM loan program. The 2023 Budget will allow LPO to continue providing this valued service.

Because of LPO Outreach and Business Development’s efforts to cultivate a pipeline of quality applicants, as well as the Origination Division’s efforts to evaluate and process applications in FY21 and FY22, LPO anticipates being able to offer its first conditional commitments under ATVM since 2011 in FY 2022.

<i>ATVM Applications as of March. 21, 2022</i>	
<i>Total loan authority requested</i>	\$19.4 billion
<i>Available loan authority</i>	\$17.7 billion

Strong applicant interest in ATVM, as well as LPO’s efforts to identify and evaluate new applicants and originate new loans, is expected to continue to impact available loan authority and credit subsidy in FY 2022 and FY 2023. Based on the current applicant pipeline, LPO anticipates utilizing all remaining ATVM loan authority by the end of FY 2023, closing approximately \$5 billion in loans in FY 2022 and \$13 billion in FY 2023.

Finally, DOE remains an active participant in all stages of the project through completion. LPO has developed a strong and unique set of capabilities and expertise to manage the ATVM loan program and support a robust domestic vehicle manufacturing supply chain.

Highlights and Major Changes in the FY 2022 Budget Request

In FY 2023, LPO requests \$9.8 million in Administrative Expenses to originate ATVM direct loans and monitor the program's portfolio as more loans reach financial close. The increase in the request for Administrative Expenses supports an anticipated increase in origination activities in FY 2022 and FY 2023. The FY23 Budget requests the authority to use existing funds to support direct loans to expanded BIL activities -- including medium- and heavy-duty vehicles, locomotives, maritime vessels, aircraft, and hyperloop technology. In FY 2022 approximately \$4 million in unobligated balances carried forward from prior-year appropriations will be utilized in addition to the annualized CR amount of \$5 million for a total of \$9 million to cover Administrative Expense obligations. To support the increase in expected loan activity, 18 additional Federal full-time equivalent (FTE) positions are requested, raising the staffing at the end of FY 2023 to 28 FTEs from the current level of 10 FTEs.

Advanced Technology Vehicles Manufacturing Loan Program

\$K

FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
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Advanced Technology Vehicles Manufacturing Loan Program

Administrative Expenses	5,000	5,000	9,800	+4,800	96%
Total, Advanced Technology Vehicles Manufacturing Loan Program	5,000	5,000	9,800	+4,800	96%

Advanced Technology Vehicles Manufacturing Loan Program

Explanation of Major Changes (\$K)

FY 2022 Request vs FY 2021 Enacted

Administrative Expenses:

+4,800

The request of \$9.8 million will support 28 FTEs, an increase of 18 from FY 2021, and contractors to support increased loan origination, portfolio monitoring, and related administrative expenses.

Total, Advanced Technology Vehicles Manufacturing Loan Program	+4,800
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Administrative Expenses

\$K

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Request (%)
Administrative Expenses					
Salaries & Benefits	1,966	3,860	5,380	+ 3,414	174%
Travel	5	75	75	+70	1400%
Support Services	2,224	522	2,885	+661	30%
Other Related Expenses	805	543	1,460	+ 655	81%
Total, Administrative Expenses	5,000	5,000	9,800	4,800	96%
Federal FTEs	10	20	28	+18	90%
Support Services					
Management and Professional Support Services					
Mission Support	1,967 ¹	522 ²	2,166	+469	28%
IT Support	527	0 ³	719	+192	36%
Total, Management and Professional Support Services	2,224	522	2,885	+661	30%
Total, Support Services	2,224	522	2,885	+661	30%
Other Related Expenses					
Communication and Misc. Charges Related to IT	26	32	35	+3	35%
Other Services	138	51 ⁴	225	+87	63%
Working Capital Fund	138	404	472	+334	242%
Operation and Maintenance of Facilities	378	⁵	600	+222	56%
Supplies, Subscriptions and Publications	123	124	124	+1	1%
Equipment	2	4	4	+2	100%
Total, Other Related Expenses	805	543	1,460	+655	81%

¹ In FY 2021 \$330,000 in unobligated balances available from prior year appropriations were used.

² In FY 2022 \$2,638,000 in unobligated balances available from prior year appropriations will be used.

³In FY 2022 \$657,000 in unobligated balances available from prior year appropriations will be used.

⁴In FY 2022 \$200,000 in unobligated balances available from prior year appropriations will be used.

⁵In FY 2022 \$550,000 in unobligated balances available from prior year appropriations will be used.

Administrative Expenses

\$K

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
Salaries and Benefits \$1,966	\$5,380	+\$3,414
<ul style="list-style-type: none"> • Provided salaries and benefits for 10 full-time equivalent employees across the Loans Programs Office. 	<ul style="list-style-type: none"> • Provides for salaries and benefits of 28 full-time equivalent employees across the Loans Programs Office. Estimate includes 4.6 % raise effective January 1, 2023. An increase of staff is necessary to continue origination activities and to monitor the expected additions to the ATVM portfolio both in FY22 and FY23. 	<ul style="list-style-type: none"> • Funds 18 additional FTEs to support enhanced loan activity.
Travel \$5	\$75	+\$70
<ul style="list-style-type: none"> • Supports the travel of staff to attend meetings, conferences, and site visits if needed. 	<ul style="list-style-type: none"> • Supports the travel of staff to attend meetings, conferences, and site visits if needed. 	<ul style="list-style-type: none"> • Increase is due to the lifting of travel restrictions due to the COVID-19 pandemic.
Support Services \$2,224	\$2,885	+\$661
<ul style="list-style-type: none"> • Supports a range of contract services including administrative support, training, subject matter experts, legal services, information technology, credit analysis, and market assessments. The total EITS shared and direct services for LPO was \$1,095,000 in FY21, \$4,000 was included here. The total request for LPO IT directed activities was \$3,849,000, \$523,000 was included here. The total amount obligated for support services in FY 2022 was \$2,554,000 million, \$330,000 of available balances was used in FY2021. 	<ul style="list-style-type: none"> • Supports a range of contract services including administrative support, training, all aspects of loan guarantee origination activities, including, subject matter experts, legal services, information technology, credit analysis, and market assessments. The total EITS shared and direct services estimate for LPO is \$1,785,000, \$7,000 is included here. The total request for LPO IT directed activities is \$5,280,000, \$712,000 is included here. 	<ul style="list-style-type: none"> • Support service funding increases by \$661,000 in FY 2023 compared to FY 2021. The increase is needed to meet rising IT costs and additional support service contractors to support the increase in loan activity.
Other Related Expenses \$805	\$1,460	+\$655

- Supports DOE Working Capital Fund, DOE IT Services expenses, equipment, other services including conferences attendance fees, and publications. In FY 2021, LPO obligated \$2,120,000 to the WCF, \$138,000 is included here. The total EITS shared and direct services for LPO was \$1,095,000 in FY21, \$4,000 was included here. The total request for LPO IT directed activities was \$3,849,000, \$29,000 was included here.

- Supports DOE Working Capital Fund, DOE IT Services expenses, equipment, other services including conferences attendance fees, publications and work at DOE national laboratories. The total LPO WCF estimate is \$3,132,000, \$472,000 is included here. The total EITS shared and direct services estimate for LPO is \$1,785,000, \$225,000 is included here. The total request for LPO IT directed activities is \$5,280,000, \$39,000 is included here.

- Support service funding increases by \$655,000 in FY 2023 compared to FY 2021, \$334,000 is for WCF and \$222,000 is for technical support provided by DOE laboratories.

Title 17 Innovative Technology Loan Guarantee Program Proposed Appropriation Language

For the cost of guaranteed loans, \$150,000,000, to remain available until expended, for innovative technology projects as authorized under Title XVII of the Energy Policy Act of 2005: Provided, That such costs, including the cost of modifying such loans, shall be as defined in section 502 of the Congressional Budget Act of 1974: Provided further, That these funds are available in addition to the authority provided in any other Act for the costs to guarantee loans under the heading "Department of Energy-Energy Programs-Title 17 Innovative Technology Loan Guarantee Program": Provided further, That these funds are available to subsidize total loan principal, any part of which is to be guaranteed, not to exceed \$5,000,000,000: Provided further, That such sums as are derived from amounts received from borrowers pursuant to section 1702(b) of the Energy Policy Act of 2005 under this heading in prior Acts, shall be collected in accordance with section 502(7) of the Congressional Budget Act of 1974: Provided further, That for necessary administrative expenses of the Title 17 Innovative Technology Loan Guarantee Program, as authorized, [\$32,000,000] \$66,206,000 is appropriated, to remain available until September 30, 2024: Provided further, That up to [\$32,000,000] \$66,206,000 of fees collected in fiscal year 2023 pursuant to section 1702(h) of the Energy Policy Act of 2005 shall be credited as offsetting collections under this heading and used for necessary administrative expenses in this appropriation and remain available until September 30, 2024: Provided further, That to the extent that fees collected in fiscal year 2023 exceed [\$32,000,000] \$66,206,000, those excess amounts shall be credited as offsetting collections under this heading and available in future fiscal years only to the extent provided in advance in appropriation Acts: Provided further, That the sum herein appropriated from the general fund shall be reduced (1) as such fees are received during fiscal year 2023 (estimated at [\$3,000,000] \$48,000,000 and (2) to the extent that any remaining general fund appropriations can be derived from fees collected in previous fiscal years that are not otherwise appropriated, so as to result in a final fiscal year 2023 appropriation from the general fund estimated at \$0: Provided further, That the Department of Energy shall not subordinate any loan obligation to other financing in violation of section 1702 of the Energy Policy Act of 2005 or subordinate any Guaranteed Obligation to any loan or other debt obligations in violation of section 609.10 of title 10, Code of Federal Regulations.
(Continuing Appropriations Act, 2022 (Division A of P.L. 117-43, as amended)

Explanation of Changes

The FY 2023 Budget Request includes \$150 million for the credit subsidy costs, associated with an additional \$5 billion of guaranteed loan authority open to a range of eligible projects. The Budget also requests for administrative expenses is \$66 million, offset by an estimated \$48 million in offsetting collections, for administrative expenses to continue originating loans for the Title 17 Loan Guarantee Program, as well as to effectively monitor the existing portfolio. The Budget proposes, in the Department of Energy General Provisions language, to amend and contravene the Bipartisan Infrastructure Law (BIL) provisions that prohibit using existing Title 17 loan authority for projects eligible under expanded authority enacted in the BIL.

Public Law Authorizations

- P.L. 109-58, Energy Policy Act of 2005, as amended
- P.L. 110-5, Revised Continuing Appropriations Resolution, 2007
- P.L. 111-5, American Recovery and Reinvestment Act of 2009
- P.L. 111-8, Omnibus Appropriations Act, 2009
- P.L. 112-10, Department of Defense and Full-Year Continuing Appropriations Act, 2011
- P.L. 117-58, Infrastructure Investment and Jobs Act

**Title 17 Innovative Technology Loan Guarantee Program
(\$K)**

FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request
29,000	29,000	168,206

Overview

The Title 17 Innovative Technology (Title 17) Loan Guarantee Program, as authorized under Title XVII of the Energy Policy Act of 2005 (EPAAct of 2005), as amended, allows the Department of Energy (DOE) to provide loan guarantees for innovative energy projects that include energy efficient and renewable energy systems, advanced nuclear facilities, advanced fossil and carbon capture, sequestration, utilization and storage systems, energy storage, virtual power plants, and various other types of projects. Through the Title 17 loan guarantee program, the Loan Programs Office (LPO) provides access to debt capital for high-impact and large-scale energy infrastructure projects and first-time commercial deployments in the United States. These projects must avoid, reduce, or sequester air pollutants or anthropogenic emissions of greenhouse gases; employ new or significantly improved technologies compared to commercial technologies in service in the United States at the time the guarantee is issued; and offer a reasonable prospect of repayment of the principal and interest on the guaranteed obligation.

The FY 2023 Budget requests \$150 million in new credit subsidy, associated with an additional \$5 billion of loan guarantee authority, to provide debt capital for open to a range of eligible projects. The Budget would increase available Title 17 loan authority by \$5 billion from \$22.4 billion to \$27.4 billion. The Department expects to obligate approximately \$6 billion of loan authority in FY 2022 and \$4.5 billion of loan authority in FY 2023.

The Budget also requests \$66 million, offset by an estimated \$48 million in collected fees, for administrative expenses to allow LPO to continue originating loans for the Title 17 Loan Guarantee Program, as well as to effectively monitor the existing portfolio, assist applicants in achieving project milestones and overcoming issues that may arise, and provide guidance and risk mitigation for the long-term success of projects.

The FY 2023 Request supports LPO efforts, started in FY 2021, to implement Energy Act of 2020 amendments related to the Title 17 program. This includes changes to the application process, including the timing of when application fees are charged to encourage new applicants to apply, and streamlining the Title 17 process to focus initial application review on the project’s technical eligibility. For the initial Part I technical eligibility review, LPO set a target of completing this review within 60 days, and as of FY 2021 the Technical and Project Management Division is exceeding this target. LPO also plans to update the Title 17 solicitations in Fiscal Year 2022 to incorporate Energy Act of 2020 amendments and make other clarifying and uniform changes. The FY 2023 Request will continue to implement these important changes to Title 17 as it obligates loan authority in FY 2022 and FY 2023.

Related to how LPO will charge and collect costs and fees to cover administrative expenses, the Energy Act of 2020 requires the Secretary to “charge and collect on or after the date of financial close of an obligation, a fee for a guarantee in an amount that the Secretary determines is sufficient to cover applicable administrative expenses (including any costs associated with third-party consultants engaged by the Secretary).” Effective January 1, 2021, per the updated statute, applicants who reach financial close of a Title 17 loan guarantee will be charged an origination fee. Previously, all applicants were required to submit nonrefundable fees upon submission of Part I and Part II applications, as well as pay costs at different phases of the due diligence process. Now, applicants who reach financial close will pay an origination fee that is sufficient to cover applicable administrative expenses associated with the review and due diligence of their loan guarantee application. Accordingly, the Request includes \$19 million to cover costs for Third-Party Advisors as required by the Energy Act of 2020. These expenses will be recouped through fees assessed at financial closure of loan guarantees.

In addition, The FY 2023 Budget supports the Administration’s objectives by bolstering deployment of domestic clean energy projects through newly expanded authorities in the Bipartisan Infrastructure Law (BIL). This includes (1) supporting eligible projects that bolster the domestic critical minerals supply chain and (2) financing to support State, Tribal, and Alaska Native corporation-backed energy projects. While BIL authorities expanded the types of projects that could be considered

for financing, it prohibited LPO from using existing loan authority to finance such projects. The FY 2023 Budget requests authority to use the existing funds to support these expanded activities. The Budget proposes, in the Department of Energy General Provisions language, to amend and contravene the BIL provisions that prohibit using existing Title 17 loan authority for projects eligible under the expanded authority. LPO believes the expanded authorities provided through BIL can be leveraged by the Title 17 program to reduce emissions and create good paying jobs that provide the free and fair choice to join a union. This new authority, would allow for smaller, distributed energy resource (DER) projects to access LPO financing more readily through aggregation, such as through state Green Bank or equivalent programs, including projects that employ already commercial eligible technologies that meet air pollutant and emissions, as well as other Title 17 criteria.

The Loan Program Office will ensure that the Title 17 program is only encouraging projects that help achieve a carbon-pollution free electric sector by 2035 and net-zero emissions, economy-wide, by 2050. The program will avoid directly subsidizing fossil fuels by excluding traditional fossil projects from consideration for a loan guarantee.

History

Section 1703 of the Energy Policy Act of 2005 authorizes DOE to provide loan guarantees for innovative energy projects in categories including advanced nuclear facilities, coal gasification, carbon sequestration, energy efficiency, renewable energy systems, and various other types of projects. Projects supported by DOE loan guarantees must avoid, reduce, or sequester air pollutants or anthropogenic emissions of greenhouse gases; employ new or significantly improved technologies compared to commercial technologies in service in the United States at the time the guarantee is issued; and offer a reasonable prospect of repayment of the principal and interest on the guaranteed obligation. Section 406 of the American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5 (Recovery Act) amended Title XVII of the Energy Policy Act of 2005 by establishing Section 1705 as a temporary program for the rapid deployment of renewable energy and electric power transmission projects, as well as leading edge biofuels projects. The authority to enter into new loan guarantees under Section 1705 expired on September 30, 2011, but the program continues to administer and monitor the portfolio of loan guarantees obligated prior to the expiration date.

Over the past decade, LPO has issued 37 Title 17 loan guarantees totaling more than \$27 billion at initial closing, with \$24 billion disbursed. To date, borrowers have repaid over \$6 billion in principal and \$3 billion in interest. Meanwhile, the program has recorded less than \$1 billion in losses due to default, or 3.5% of funds disbursed. Of the 37 Title 17 loan guarantees, 32 were issued between 2009 and 2011 under Section 1705.

Among its recent achievements, the Title 17 program in FY 2021 offered a conditional commitment to guarantee a loan of up to \$1.04 billion to Monolith Nebraska, LLC to expand the borrower's existing production facility in Hallam, Nebraska, to build the first-ever commercial-scale facility in the United States to deploy methane pyrolysis technology, which converts natural gas into carbon black and hydrogen — two products that are frequently used in difficult to decarbonize industrial sectors like tire and ammonia fertilizer production, respectively. Monolith's novel technologies aim to significantly reduce the amount of greenhouse gases that are traditionally emitted during carbon black and hydrogen production by up to 80 percent compared to traditional production. The facility outputs will also help address anticipated increased domestic demand for carbon black and will help provide local U.S. agricultural producers competitively priced ammonia for fertilizer, especially as compared to imported ammonia. The project anticipates creating ~1,000 construction jobs and 75 permanent jobs.

The Title 17 Innovative Technology Loan Guarantee Program goes beyond incentivizing innovation and commercial scale deployment. Together, Title 17 projects support tens of thousands of good-paying jobs across 11 states, collectively avoided almost 40 million tonnes of carbon emissions to-date, and will bolster clean power generation for decades to come. These are figures that steadily increase annually and with each new loan guarantee that is finalized.

Portfolio Project Data Title 17 – 2/28/2021

<i>Total Number of Active Projects</i>	16 ¹
<i>Number of Projects in Construction</i>	1
<i>Number of Projects in Operation</i>	15
<i>Generation Capacity (MW)</i>	3,963
<i>Electricity Generated (GWh, Cum.)</i>	86,000
<i>CO₂ Avoided (Mtons, Cum.)</i>	40

This FY 2023 Budget will allow LPO to continue Outreach and Business Development activities, including developing marketing materials, engaging in stakeholder outreach, and ensuring that LPO’s unique value proposition is widely known in the innovative energy technology market. LPO outreach efforts will focus on attracting quality applications into the Title 17 applicant pipeline and moving these applications through conditional commitment to financial close.

LPO offers business development services to potential applicants ready to receive financing. Business development refers to LPO’s in-house financial, technical, environmental, and legal team of experts advising companies on how to submit successful applications under active Title 17 loan guarantee solicitations. This Budget will allow LPO to continue providing this valued service.

Title 17 Applications as of Feb. 28, 2022

	<i>Total loan authority requested</i>	<i>Available loan authority</i>
<i>Advanced Nuclear Energy</i>	\$9.6 billion	\$10.9 billion
<i>Renewable Energy and Energy Efficiency</i>	\$39.5 billion	\$3 billion
<i>Advanced Fossil Energy</i>	\$4.8 billion	\$8.5 billion

Strong applicant interest in Title 17, as well as LPO’s efforts to identify and evaluate new applicants and originate new loans, is expected to continue to impact available loan authority and credit subsidy in FY 2022 and FY 2023. Based on the current applicant pipeline, LPO anticipates obligating approximately \$6 billion of loan authority in FY 2022 and \$4.5 billion of loan authority in FY 2023.

Highlights and Major Changes in the FY 2023 Budget Request

In FY 2023, \$150 million is requested for the credit subsidy costs, associated with an additional \$5 billion of guaranteed loan authority, to support a range of eligible projects, increasing Title 17 available loan authority by \$5 billion from \$22.4 billion to \$27.4 billion. The FY 2023 Budget Request includes \$66 million, offset by an estimated \$48 million in collected fees, for administrative expenses to continue originating loans for the Title 17 Loan Guarantee Program, as well as to effectively monitor the existing portfolio. The Request includes \$17.5 million, to be recouped through fees assessed at financial closure of loan guarantees, to cover costs for Third-Party Advisors as required by the Energy Act of 2020. In FY 2022, LPO will use approximately \$27 million in unobligated balances carried forward from prior-year appropriations to cover anticipated administrative expenses related to loan origination and loan portfolio monitoring activity. An increase of 24 Federal FTEs is included in the request. Finally, the FY 2023 Request supports utilizing existing authority to support projects eligible under expanded authority enacted in the Bipartisan Infrastructure Law, including projects to finance domestic critical minerals supply chain and State energy financing institution-backed projects.

¹ The number of loan guarantees and projects are different because multiple loan guarantees may be issued for a project.

Title 17 Innovative Technology Loan Guarantee Program
\$K

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
Title 17 Innovative Technology Loan Guarantee Program					
Administrative Expenses	32,000	32,000	66,206	+34,206	107%
Title XVII Credit Subsidy	0	0	150,000	+150,000	N/A
Offsetting Collections	-3,000	-3,000	-48,000	-45,000	1500%
Total, Title 17 Innovative Technology Loan Guarantee Program	29,000	29,000	168,206	+139,206	480%

Title 17 Innovative Technology Loan Guarantee Program
Explanation of Major Changes (\$K)

FY 2022 Request vs FY 2021 Enacted

Administrative Expenses:

+34,206

Increase is needed to support a total of 102 FTE an increase of 24 from FY 2021 and to pay for the costs for Third-Party Advisors as required by the Energy Act of 2020, estimated at \$17.5 million in FY 2023.

Title XVII Credit Subsidy:

+150,000

Additional loan authority is necessary to support high-quality applications which exceed currently available authority. Specifically, \$150 million for Title 17 credit subsidy costs, associated with an additional \$5 billion of loan guarantee authority open to a range of eligible projects will enable LPO to maintain momentum in originating new loans and loan guarantees.

Offsetting Collections:

-45,000

LPO anticipates receiving \$3 million in maintenance fees from the current portfolio and \$45 million in fees associated with the use of \$4.5 billion guaranteed loan authority FY 2023. As required by the Energy Act of 2020, fees are now collected at the financial close of a loan guarantee. Previously, LPO charged and collected certain fees prior to financial close.

Total, Title 17 Innovative Technology Loan Guarantee Program

+139,206

Administrative Expenses
\$K

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Request (%)
Administrative Expenses					
Salaries & Benefits	15,837	18,800	21,421	+5,584	35%
Travel	4	400	400	+ 310	9900%
Support Services	12,304	9,191	39,416	+27,114	220%
Other Related Expenses	3,857	3,609	4,969	+ 14	29%
Total, Administrative Expenses	32,000	32,000	66,206	+34,206	107%
LPO FTEs	76	91	100	+24	32%
Office of the General Counsel FTE	1	1	1	0	0%
Office of Management FTE	1	1	1	0	0%
Support Services					
Management and Professional Support Services					
Third-Party Advisor	¹	²	17,500	+17,000	N/A
Mission Support	10,238 ³	7,290 ⁴	16,569	+6,331	62%
IT Support	2,064 ⁵	1,901 ⁶	5,347	+3,283	159%
Total, Management and Professional Support Services	12,302	34,864	39,416	+27,114	133%
Total, Support Services	12,302	9,191	39,416	+27,114	220%

Other Related Expenses

¹ In FY 2021 \$3,049,0000 of balances carried forward from prior year appropriations was used.

²In FY 2022 \$16,000,000 of balances carried forward from prior year appropriations will be used.

³ In FY 2021 \$555,000 of balances carried forward from prior year appropriations was used.

⁴ In FY 2022 \$7,416,000 of balances carried forward from prior year appropriations will be used.

⁵ In FY 2021 \$1,000,000 of balances carried forward from prior year appropriations was used.

⁶ In FY 2022 \$2,259,000 of balances carried forward from prior year appropriations will be used.

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Request (%)
Communication and Misc. Charges Related to IT	152	194	212	+60	39%
Other Services	618 ¹	20 ²	1,415	+297	27%
Working Capital Fund	1,933	2,550	2,478	+545	28%
Operation and Maintenance of Facilities	405	0	0	-405	-100%
Supplies, Subscriptions and Publications	711	823	840	+129	18%
Equipment	38	22	24	-14	-34%
Total, Other Related Expenses	3,857	3,609	4,969	+1,112	29%

\$K

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
Salaries and Benefits 15,837	21,421	+5,584
Provided salaries and benefits expenses for 78 full-time equivalent employees in support of the Title 17 program across the Loans Programs Office.	Provides for salaries and benefits of 100 full-time equivalent employees across the Loans Programs Office. Estimate includes 4.6% raise effective January 1, 2023.	Funds 24 additional FTEs to support enhanced loan activity.
Travel 4	400	+396
Supports the travel of staff to attend meetings, conferences, and site visits if needed.	Supports the travel of staff to attend meetings, conferences, and site visits if needed.	Increase is due to the lifting of travel restrictions due to the COVID-19 pandemic.
Support Services 12,302	39,416	+27,114

¹ In FY 2021 \$500,000 of balances carried forward from prior year appropriations was used.

² In FY 2022 \$1,327,000 of balances carried forward from prior year appropriations will be used.

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
<p>Supported a range of contract services including administrative support, training, subject matter experts, legal services, information technology, credit analysis, and market assessments. Third-Party Advisor expenses were \$3,049,000. The total EITS shared and direct services for LPO was \$1,095,000 in FY21, \$4,000 was included here. The total request for LPO IT directed activities was \$3,849,000, \$523,000 was included here. The total for support services in FY 2021 was \$16,901,000, with \$4,599,000 of available balances being used.</p>	<p>Supports a range of contract services including administrative support, training, all aspects of loan guarantee origination activities, including, subject matter experts, legal services, information technology, credit analysis, and market assessments. The total EITS shared and direct services estimate for LPO is \$1,785,000, \$1,414,000 is included here. The total request for LPO IT directed activities is \$5,780,000, \$4,505,000 is included here. Third-Party Advisor costs are estimated at \$17,500,000. All available balances will be expended in FY 2022.</p>	<p>After considering the use of available balances in FY 2021, support service funding increases by \$22,515,000 in FY 2023 compared to FY 2021. The increase is needed to pay for the costs for Third-Party Advisors as required by the Energy Act of 2020, for rising IT costs and additional support service contractors to support the increase in loan activity.</p>
<p>Other Related Expenses 3,595</p>	<p>4,969</p>	<p>+1,112</p>
<p>Supports DOE Working Capital Fund, DOE IT Services expenses, equipment, other services including conferences attendance fees, and publications. The total LPO WCF obligation in FY 2021 was \$2,120,000, \$1,933,000 was included here. The total EITS shared and direct services estimate for LPO was \$1,095,000, \$869,000 was included here. The total for LPO IT directed activities was \$3,849,000, \$158,000 was included here.</p>	<p>Supports DOE Working Capital Fund, DOE IT Services expenses, equipment, other services including conferences attendance fees, and publications. The total LPO WCF estimate is \$3,132,000, \$2,478,000 is included here. The total EITS shared and direct services estimate for LPO is \$1,785,000, \$1,416,000 is included here. The total request for LPO IT directed activities is \$5,780,000, \$234,000 is included here.</p>	<p>Support service funding increases by \$612,000 in FY 2023 compared to FY 2021 after accounting for the use \$500,000 of available balances in FY 2021. \$545,000 is for WCF and \$297,000 is for other IT related services. The increases are partial offset by a decrease in technical support provided by DOE laboratories.</p>

Tribal Energy Loan Guarantee Program
Proposed Appropriation Language

For Department of Energy administrative expenses necessary in carrying out the Tribal Energy Loan Guarantee Program, [\$2,000,000] *\$1,860,000*, to remain available until September 30, [2023] *2024*.
(Continuing Appropriations Act, 2022 (Division A of P.L. 117-43, as amended))

Explanation of Changes

The FY 2023 Budget request allows the Tribal Energy Loan Guarantee Program (TELGP) to continue outreach and originating activities and to monitor its expected portfolio. The proposed language above shows changes from the FY 2022 annualized continuing resolution. While not reflected in the above language due to the timing of budget formulation and enactment of the FY 2022 Omnibus, the Department supports continuing in FY 2023 the language enacted by Congress in the Consolidated Appropriations Act, 2022, that broadens TELGP authority to allow applicants to apply to LPO for direct loans via the United States (U.S.) Treasury Federal Financing Bank guaranteed by the Department, in addition to partial loan guarantees.

Public Law Authorizations

- P.L.102-486, Energy Policy Act of 1992, as amended

Tribal Energy Loan Guarantee Program

(\$K)

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request
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Tribal Energy Loan Guarantee Program	2,000	2,000	1,860
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Overview

Section 2602 of the Energy Policy Act of 1992, as amended by the Energy Policy Act of 2005, authorizes a loan guarantee program at the Department of Energy (DOE) to support energy development by Indian tribes. The TELGP is managed by the Loan Programs Office (LPO). The FY 2023 Budget requests \$1.9 million in addition to approximately \$0.7 million in unobligated carry over, for a total of \$2.6 million to continue origination and monitoring related activities for TELGP to invigorate economic opportunities in tribal communities through the development of energy projects.

The FY 2023 Budget request allows TELGP to continue outreach and originating activities and to monitor its expected portfolio. The \$1.9 million funding plus approximately \$0.7 million in unobligated carryover, will support achieving the Administration’s objectives of a carbon-pollution free electric sector by 2035 and net-zero emissions, economy-wide, by 2050. It also supports place-based initiatives including energy community and Environmental Justice 40 investments. Specifically, TELGP provides and encourages commercial lenders to provide debt capital to Tribal borrowers and organizations installing robust energy projects that lead to economic development or modernizing power generation and distribution in the Nation’s most vulnerable communities.

To better serve that mission, DOE supports the FY 2022 Omnibus language to allow TELGP applicants access to direct loans via the United States Treasury Federal Financing Bank, guaranteed by the DOE, obviating the need for a partial guarantee of a commercial lender. This change – in addition to planned changes in FY 2022 to the TELGP solicitation to clarify ownership requirements, lending obligations, and fees – is expected to increase interest in and accessibility to TELGP loans. LPO looks forward to working with Congress, Tribal borrowers and developers, and other stakeholders to highlight and publicize these important improvements to the program, in addition to continuing to communicate the availability of loan authority and information about the benefits of the program and its application process to all potential borrowers and stakeholders. LPO will continue to work diligently to utilize the \$2 billion in aggregate loan authority previously provided by Congress to ultimately deliver important energy and economic benefits to Indian tribes, consistent with the Administration’s environmental justice objectives.

History

Authorized by the Energy Policy Act of 2005, funding was first appropriated for TELGP in FY 2017. In FY 2018, the U.S. Department of Energy (DOE) issued the first TELGP solicitation to support tribal energy development. Through intra-agency, interagency, and national laboratory collaborations, LPO’s team of experts are diligently meeting with potential applicants to increase availability of commercial debt financing to enhance tribal economic opportunities through energy development.

The FY 2023 Budget will also allow LPO to continue Outreach and Business Development and Origination Division activities. Program activities include consultative marketing and stakeholder outreach that informs on issues specific to energy financing to Tribes and the value proposition of flexible credit and credit enhancement provided by TELPG. In addition, LPO will engage with lenders and investors to encourage participation in financings with Tribes on energy projects. LPO will offer assistance to project developers and technology providers in structuring transactions to align with Tribe’s sovereignty. Also, LPO will work with the Tribe’s advisors, including attorneys and accountants, to address suitability, eligibility, and access to LPO financing.

In FY 2021, LPO held 320 outreach meetings, including follow-up, structuring, and relationship development discussions, to disseminate information on the availability, benefits, and application process of TELGP to potential applicants and interested parties. For the first half of FY 2022, 431 outreach meetings have been held and one application was officially submitted.

LPO offers business development services, in-house financial, technical, environmental, and legal team of experts advising Tribes and lenders on submitting a complete application for TELGP financing. The budget will allow LPO to participate in consultations, provide value-added service, and coordinate with other agencies serving Tribes. LPO has a goal of increasing awareness of TELGP and having two to four applications officially submitted in FY 2023.

The Request also supports LPO's ongoing close collaboration with the Department's Office of Indian Energy Policy and Programs and outreach to tribal members. This has included ongoing communication with tribal leaders to solicit feedback about the proposed design of TELGP, one-on-one meetings with tribal leaders, participating in tribal energy annual summits and events, and organizing a virtual listening session in April 2021 to discuss funding and financing of tribal energy projects. The listening session welcomed more than 350 participants, who provided valuable feedback on making Department programs more effective for Indian Country to meet tribal economic development and energy resilience needs. The engagement of potential TELGP lenders and borrowers by DOE's newly organized Outreach and Business Development Division has resulted in the program receiving its first application since the program was appropriated in 2017. LPO will continue to solicit feedback as appropriate to better serve tribes' needs, consistent with LPO's authority.

Highlights and Major Changes in the FY 2023 Budget Request

In FY 2023, LPO requests \$1.9 million to continue outreach, origination and monitoring activities for TELGP to invigorate economic opportunities in tribal communities through the development of energy projects. The Request supports efforts by Congress in the Consolidated Appropriations Act, 2022, that would broaden TELGP authority to allow applicants to apply to LPO for direct loans via the US Treasury Federal Financing Bank guaranteed by the Department, which LPO will begin implementing in FY 2022. Finally, the FY 2023 Request allows LPO to continue outreach activities to Indian tribes and Alaska Native Corporations to highlight and publicize important improvements to the program, in addition to continuing to communicate the availability of loan authority and information about the benefits of the program and its application process to all potential borrowers and stakeholders.

Tribal Energy Loan Guarantee Program

	(\$K)				
	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
Tribal Energy Loan Guarantee Program					
Administrative Expenses	2,000	2,000	1,860	-140	-7%
Total, Tribal Energy Loan Guarantee Program	2,000	2,000	1,860	-140	-7%

**Tribal Energy Loan Guarantee Program
Explanation of Major Changes (\$k)**

Administrative Expenses:

Approximately \$0.7 million in unobligated balances carried forward from prior year appropriations will be utilized in addition to the request of \$1.9 million to support increased loan origination and related administrative expenses.

FY 2023 Request vs FY 2021 Enacted

-140

Total, Tribal Energy Loan Guarantee Program

-140

Tribal Energy Loan Guarantee Program
\$K

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Request (%)
Administrative Expenses					
Salaries & Benefits	244	990	1,012	+ 768	315%
Travel	2	25	25	+ 23	1150%
Support Services	1,586	717	522	- 1,064	-67%
Other Related Expenses	168	268	301	+ 133	79%
Total, Administrative Expenses	2,000	2,000	1,860	- 140	-7%
Federal FTEs	1	5	5	+ 4	400%
Support Services					
Management and Professional Support Services					
Mission Support	1,467	466 ¹	448 ²	- 1,019	-69%
IT Support	119	251	74 ³	-45	-38%
Total, Management and Professional Support Services	1,586	717	522	- 1,064	-67%
Total, Support Services	1,586	717	522	- 1,064	-67%
Other Related Expenses					
Communication and Misc. Charges Related to IT	5	13	14	+ 9	180%
Other Services	55	83	88	+ 33	60%
Working Capital Fund	49	155	182	+ 133	271%
Operation and Maintenance of Facilities	45	0	0	- 45	100%
Printing Supplies and Materials	13	14	4	+ 1	8%
Equipment	1	3	3	+ 2	200%
Total, Other Related Expenses	168	268	301	+ 133	79%

¹ In FY 2022, \$547,000 of balances carried forward from prior year appropriations will be used.

² In FY 2023, \$500,000 of balances carried forward from prior year appropriations will be used.

³ In FY 2023, \$200,000 of balances carried forward from prior year appropriations will be used.

**Administrative Expenses
(\$K)**

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
Salaries and Benefits \$244	\$1,012	+\$768
<ul style="list-style-type: none"> • Provided for salaries and benefits of 1 full-time equivalent employees in support of the TELGP program across all LPO divisions. 	<ul style="list-style-type: none"> • Provides for salaries and benefits of 5 full-time equivalent employees across all of the LPO divisions. Estimate includes 4.6 % raise effective January 1, 2023. 	<ul style="list-style-type: none"> • Increase reflects an increase of 4 full-time equivalent employees.
Travel \$2	\$25	+\$23
<ul style="list-style-type: none"> • Supports the travel of staff to attend meetings, conferences, and site visits if needed. 	<ul style="list-style-type: none"> • Supports the travel of staff to attend meetings, conferences, and site visits if needed. 	<ul style="list-style-type: none"> • Increase is due to the anticipated lifting of travel restrictions due to the COVID-19 pandemic.
Support Services \$1,586	\$552	-\$1,064
<ul style="list-style-type: none"> • Supports a range of contract services including administrative support, training, subject matter experts, legal services, information technology, credit analysis, and market assessments. The total EITS share and direct services for LPO was \$1,095,000 in FY21, \$1,000 was included here. The total request for LPO IT directed activities was \$3,849,000, \$6,000 was included here. 	<ul style="list-style-type: none"> • Supports a range of contract services including administrative support, training, all aspects of loan guarantee origination activities, including, subject matter experts, legal services, information technology, credit analysis, and market assessments. The total EITS shared and direct services estimate for LPO is \$1,785,000 \$1,620 is included here. The total request for LPO IT directed activities is \$5,780,000, \$272,000 is included here. Total obligations for support services in FY 2023 are estimated at \$1,252,000, with an estimated \$700,000 of available balances being used. 	<ul style="list-style-type: none"> • After considering the use of available balances in FY 2023, support service funding decreases by \$364,000 in FY 2023 compared to FY 2021 due to the increase in full-time federal staff.
Other Related Expenses \$168	\$301	+\$133

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
<ul style="list-style-type: none"> Supports DOE Working Capital Fund, DOE IT Services expenses, equipment, other services including conferences attendance fees, and publications. \$45,000 was used for outreach support from the NREL. In FY 2012, LPO obligated \$2,120,000 to the WCF, \$49,000 is included here. The total EITS shared and direct services for LPO was \$1,095,000, \$54,000 was included here. The total request for LPO IT directed activities is \$3,849,000, \$97,000 was included here. 	<ul style="list-style-type: none"> Supports DOE Working Capital Fund, DOE IT Services expenses, equipment, other services including conferences attendance fees, and publications. The total LPO WCF estimate is \$3,132,000, \$182,000 is included here. The total EITS shared and direct services estimate for LPO is \$1,785,000, \$88,000 is included here. The total request for LPO IT directed activities is \$5,780,000, \$17,000 is included here. 	<ul style="list-style-type: none"> Increase is due to an increase in the cost of overhead expenses.

Manufacturing and Energy Supply Chains

Manufacturing and Energy Supply Chains

Office of Manufacturing and Energy Supply Chains

Proposed Appropriation Language

For Department of Energy expenses including the purchase, construction, and acquisition of plant and capital equipment, and other expenses necessary for manufacturing and energy supply chain activities in carrying out the purposes of the Department of Energy Organization Act (42 U.S.C. 7101 et seq.), including the acquisition or condemnation of any real property or any facility or for plant or facility acquisition, construction, or expansion, \$27,424,000, to remain available until expended: Provided, That of such amount, \$6,424,000 shall be available until September 30, 2024, for program direction

P.L. 95-91, "Department of Energy Organization Act" (1977)

P.L. 109-58, "Energy Policy Act of 2005"

P.L. 110-140, "Energy Independence and Security Act of 2007"

P.L. 115-246, "Department of Energy Research and Innovation Act" (2018)

P.L. 116-260, "Consolidated Appropriations Act of 2020" (Section Z: Energy Act of 2020)

Explanation of Changes

The newly created Office of Manufacturing and Energy Supply Chains (MESC), within the Office of the Under Secretary for Infrastructure, will help train the next generation of energy engineers and conduct energy assessments to identify opportunities to improve productivity and competitiveness, reduce waste, and save energy for small- and medium-sized manufacturers. DOE's Industrial Assessment Centers provide a no-cost assessment, including in-depth evaluations of a facility conducted by engineering faculty with upper class and graduate students from a participating university. This detailed process analysis will generate specific recommendations with estimates of costs, performance, and payback schedules. These activities were previously funded within Energy Efficiency and Renewable Energy. Additional Bipartisan Infrastructure Law funding and full-time equivalents (FTEs) for the MESC program are captured in the budgetary projections in, and will be executed through, the Department's EERE account.

Manufacturing and Energy Supply Chains

Overview

The Office of Manufacturing and Energy Supply Chains (MESC), within the Office of the Under Secretary for Infrastructure, is responsible for strengthening and securing manufacturing and energy supply chains needed to modernize the nation's energy infrastructure and support a clean and equitable energy transition. MESC catalyzes the development of an energy sector industrial base through investments that establish and secure domestic clean energy supply chains and manufacturing, and by engaging with private-sector companies, other Federal agencies, and key stakeholders to collect, analyze, respond to, and share data about energy supply chains to inform future decision making and investment.

The office manages programs that develop clean domestic manufacturing and workforce capabilities, with an emphasis on opportunities for small and medium enterprises and communities in energy transition. MESC coordinates across all of DOE's programs on manufacturing and supply chain issues, including the Office of Clean Energy Demonstrations and the Advanced Manufacturing Office and new Solar Manufacturing Accelerator funded in the Office of Energy Efficiency and Renewable Energy (EERE).

DOE's Industrial Assessment Centers provide a no-cost assessment, including in-depth evaluations of a facility, conducted by engineering faculty with upper class and graduate students from a participating university. This detailed process analysis will generate specific recommendations with estimates of costs, performance, and payback times. These activities were previously funded within EERE.

Program Direction enables MESC to maintain and support a world-class Federal workforce that supports research, development, demonstration, and deployment of innovative technologies that will transition Americans to net-zero greenhouse gas emission, economy-wide, by no later than 2050 and ensure the clean energy economy benefits all Americans. The FY 2023 Program Direction Request provides resources for program and project management, oversight activities, contract administration, workforce management, IT support, and Headquarters (HQ) and field site non-laboratory facilities and infrastructure.

Programmatic Realignment

On February 9, 2022, Secretary Granholm announced a realignment to allow the Department to accelerate the transition more effectively to a clean-energy economy by pulling all levers along the commercialization spectrum—research, development, demonstration, and deployment. The Office of the Undersecretary for infrastructure (S3) focuses on deploying clean energy infrastructure in pursuit of national goals for affordable and reliable energy, creating high quality jobs, enhancing U.S. manufacturing, and addressing the climate crisis. Its efforts support achievement of carbon-free electricity in the U.S. by 2035 and a net zero economy by 2050 and delivering substantial benefits to the communities that are frequently left behind.

MESC provides skilled teams in energy planning; energy security; infrastructure financing; project development; project management; clean energy supply chains; state, community, and tribal engagement; and other key areas critical to the success of demonstration and deployment efforts as appropriated through BIL and annual appropriations. The Office engages and works in partnership with a diverse set of stakeholders as it stewards and seeks the greatest benefits from federal funding.

**Manufacturing and Energy Supply Chains
(\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR¹	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
Manufacturing and Energy Supply Chains				
Facility and Workforce Assistance	12,000	12,000	18,000	+6,000
Energy Sector Industrial Base Technical Assistance	0	0	3,000	+3,000
Program Direction ²	909	909	6,424	N/A
Total, Manufacturing and Energy Supply Chains	12,909	12,909	27,424	N/A

**Future Year Energy Program
(\$K)**

	FY 2023 Request	FY 2024 Estimate	FY 2025 Estimate	FY 2026 Estimate	FY 2027 Estimate
Manufacturing and Energy Supply Chains					
Manufacturing and Energy Supply Chains	27,424	28,000	28,000	29,000	30,000
Total, Manufacturing and Energy Supply Chains	27,424	28,000	28,000	29,000	30,000

Outyear Priorities and Assumptions

In the FY 2012 Consolidated Appropriations Act (P.L. 112-74), Congress directed the Department to include a future-years energy program (FYEP) in subsequent requests that reflects the proposed appropriations for five years. This FYEP shows outyear funding for each account for FY 2024 - FY 2027. The outyear funding levels use the growth rates from, and match the outyear account totals published in, the FY 2023 President’s Budget for both the 050 and non-050 accounts.

MESC priorities in the outyears include the following:

- Provide applied energy efficiency and productivity improvement assessments to small- and medium-sized manufacturers and provide direct financial assistance to reduce or offset the costs of energy efficiency, productivity improvement, and emissions reduction implementation.
- Provide technical assistance to manufacturers to develop strategies and opportunities to address regional energy sector supply chain challenges.
- Provide support to help train the next generation of energy engineers by enabling hands-on energy efficiency and sustainability experience at local manufacturing facilities

Support the development of a Data, Modeling, and Analysis toolset to provide critical information and analyses for supply chain modeling and mapping to inform strategies to address energy industrial base manufacturing and supply chain challenges and inform future investment priorities.

¹ The FY 2022 Annualized CR amounts reflect the continuing resolution level annualized to a full year.

² PD was prorated based on the EERE Program Direction line, so the funding is non-comparable PD Request for FY23 includes \$5.5M for National Environmental Policy Act (NEPA) and \$15K for pay raise assumption.

Facility and Workforce Assistance

DOE's Industrial Assessment Centers (IACs) can help small- and medium-sized U.S. manufacturers save energy, improve productivity, and reduce waste by providing no-cost technical assessments conducted by university-based teams of engineering students and faculty. A collection of all the publicly available and recommendation data is available online at the Industrial Assessment Centers Database (<https://iac.university/>). This includes information on the type of facility assessed (size, industry, energy usage, etc.) and details of resulting recommendations (type, energy, and dollar savings etc.).

Manufacturers can contact the closest [IAC location](#) about receiving an IAC assessment if they meet these criteria:

- Within Standard Industrial Codes (SIC) 20-39
- Gross annual sales below \$100 million
- Fewer than 500 employees at the plant site
- Annual energy bills more than \$100,000 and less than \$3.5 million
- No professional in-house staff to perform the assessment

IACs train the next generation of energy savvy engineers, more than 60 percent of which pursue energy-related careers upon graduation. IAC assessments are in-depth evaluations of a facility conducted by engineering faculty with upper class and graduate students from a participating university. After a remote survey of the plant, the team conducts a one or two-day site visit to take engineering measurements. The team performs a detailed process analysis to generate specific recommendations with estimates of costs, performance, and payback times. Within 60 days, the plant receives a confidential report detailing the analysis, findings, and recommendations. In six to nine months, the IAC team calls the plant manager to verify what recommendations have been implemented. Universities periodically apply to host an IAC and receive DOE funding to provide assessments. The IAC program has offered assessments since 1976.

Key accomplishments of the IACs include:

- 502 IAC assessments have been conducted in FY21 and FY22 year to date, generating 3,250 recommendations
 - 69 M Therms of energy savings identified and \$72 million in cost savings from energy/water use reductions and productivity gains
- 32 IAC centers were selected through a competitive solicitation to operate through the next five years from FY22-FY26
 - 7 centers are located at Minority Serving Institutions (MSIs) or have MSI partners
- Currently there are 545 engineering students participating in the program across the 32 centers
- IAC program served as one of 22 pilot programs across the Federal government for the Justice40 Initiative, to collect data on the percentage of program activities that support disadvantaged communities
- Technical Assistance Tools
 - The IACs developed a wastewater tool that can be used to optimize activated sludge processes in wastewater treatment facilities
 - Completed 10 tutorials as part of the IAC 101 Program (<https://iac.university/iac101>). A total of 14 modules have been planned on topics ranging from demand management to industrial heating and cooling to steam systems

Each year, about 500 engineering students at IACs receive hands-on assessment training at operating industrial facilities and gain substantive experience performing evaluations of industrial processes and energy systems. Alumni report the training sets them apart in the job market.

Highlights of the FY 2023 Request

Key focus areas include creating partnerships between the public and private sector to address manufacturing and supply chain challenges; providing energy and carbon assessments to small- and medium-sized manufacturers; training the next generation of energy engineers; and, reducing energy, waste, and carbon emissions, while improving productivity and competitiveness of manufacturers.

Additional areas of focus include:

- Provide applied energy efficiency and productivity improvement assessments to small- and medium-sized manufacturers
- Work collaboratively with state, local, and utility energy efficiency programs that could aid manufacturers in implementing assessment recommendations
- Conduct outreach to manufacturers to educate them on DOE's full suite of technical assistance programs
- Incorporate decarbonization strategic planning into assessment approach
- Train the next generation of energy engineers by enabling hands-on energy efficiency experience at local manufacturing facilities
- Expand the IAC 101 on-line technical assistance platform aimed at extending the reach of the IACs beyond their immediate clients
- Expand the Women in Energy Efficiency (WE²) network that provides mentorship for female IAC students, promoting ongoing female participation in STEM
- Assist in the formulation and assessment of resiliency plans to respond to unexpected events that might disrupt normal production conditions and cause production losses
- Provide expanded follow-up services after completed assessments to encourage implementation of energy/carbon saving recommendations

Energy Sector Industrial Base Technical Assistance (NEW)

The proposed Energy Sector Industrial Base Technical Assistance program will provide a center of excellence on regional energy sector supply chain challenges, strategies to address those opportunities, as-needed interagency coordination, and technical assistance to ensure robust clean energy supply chains. Includes emphases on U.S.-based clean energy manufacturing and quality jobs. Funding will also be utilized for technical assistance to the Department of Treasury in implementing tax provisions associated with the energy manufacturing industry.

**Manufacturing and Energy Supply Chains
Activities and Explanation of Changes**

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
Manufacturing and Energy Supply Chains \$15,909,000	\$27,424,000	+\$11,515,000
Facility and Workforce Assistance \$12,000,000	\$18,000,000	+\$6,000,000
<ul style="list-style-type: none"> • Provide assessments to manufacturers on energy and water efficiency, waste reduction, and energy management processes. • Fund competitively selected partnerships between universities, and the private sector that emphasize student-led projects to develop new tools and processes that address energy management and manufacturing challenges. • Train the clean energy innovators and manufacturing energy management workforce of the future. 	<ul style="list-style-type: none"> • Expand IAC assessment reach to target technical assistance to disadvantaged communities, EEEJ communities, and areas with high industrial emissions. • Expand technical assistance for the implementation of energy and water efficiency projects and practices recommended by IAC assessments. • Expand diversity efforts targeting non-traditional engineering students for workforce training opportunities. • Develop expanded assessment approach that focuses on decarbonization recommendations for manufacturers. 	<ul style="list-style-type: none"> • Increased technical assistance to disadvantaged communities, EEEJ communities, and areas with high industrial emissions. • Increased funding for workforce development activities focused on increasing diversity in the IAC student mix and creating opportunities for additional students to be involved in onsite training and research projects. • Expand the technology focus of the IAC assessments to include emerging decarbonization technologies and practices.
Energy Sector Industrial Base Technical Assistance \$0	\$3,000,000	+\$3,000,000
	<ul style="list-style-type: none"> • Provide a center of excellence on regional energy sector supply chain gaps and issues • Technical assistance to the Department of Treasury in implementing tax provisions with industry 	<ul style="list-style-type: none"> • New program in FY 2023

Program Direction

Overview

Program Direction provides for the costs associated with the Federal workforce, including salaries, benefits, travel, training, building occupancy, IT services, security clearance, and other related expenses. It also provides for the costs associated with contractor services that, under the direction of the Federal workforce, support the Manufacturing and Energy Supply Chains (MESC) mission.

Salaries and Benefits support Federal employees who provide executive management, programmatic oversight, and analysis for the effective implementation of the FEMP program.

Travel & Training includes transportation, subsistence, and incidental expenses that allow MESC to effectively provide the Department's electricity-related outreach to regions, states, and tribes regarding planning needs and issues, policies, siting protocols, and new energy facilities.

Support Services includes contractor support directed by the Federal staff to perform administrative tasks and provide analyses to management. These efforts include issue-oriented support on science, engineering, environment, and economics that benefit strategic planning; technology and market analysis to improve strategic and annual goals; development of management tools and analyses to improve overall office efficiency; assistance with communications and outreach to enhance MESC's external communication and responsiveness to public needs; development of program-specific information tools that consolidate corporate knowledge, performance tracking and inventory data, improve accessibility to this information, and facilitate its use by the entire staff.

Other Related Expenses includes corporate IT support (for DOE's Energy Information Technology Services [EITS] desktop services and IT equipment) and working capital fund (WCF) expenses, such as rent, supplies, copying, graphics, mail, printing, and telephones. It also includes office safety requirements, equipment upgrades and replacements, commercial credit card purchases using simplified acquisition procedures where possible, security clearance expenses, and other needs. The FY 2023 request also includes funding for NEPA related activities.

Highlights of the FY 2023 Budget Request

0 3

proposed Control Point within MESC for increased staffing to
0 3.

**Program Direction
Activities and Explanation of Changes**

FY 2021 Enacted	FY 2023 Request Level	Explanation of Changes FY 2023 Request Level vs. FY 2021 Enacted
Program Direction N/A – funding is non-comparable	\$6,424,000	N/A
<ul style="list-style-type: none"> Salaries and Benefits 	<ul style="list-style-type: none"> \$600,000 - Salaries and Benefits support 3 FTEs that provide executive management, programmatic oversight, and analysis for the effective implementation of the program. Funding also provides support for S3 operations. 	
<ul style="list-style-type: none"> Travel & Training 	<ul style="list-style-type: none"> \$24,000 - Travel includes transportation, subsistence, and incidental expenses to effectively facilitate its mission 	
<ul style="list-style-type: none"> Support Services 	<ul style="list-style-type: none"> \$150,000 - Support Services includes contractor support directed by the Federal staff to perform administrative tasks and provide analysis to management. Support Services may include support for post-doctoral fellows 	
<ul style="list-style-type: none"> Other Related Expenses 	<ul style="list-style-type: none"> \$5,650,000 - Other Related Expenses includes EITS desktop services and WCF expense, such as rent, supplies, copying, graphics, mail, printing, and telephones. It also includes equipment upgrades and replacements, commercial credit card purchases using the simplified acquisition procedures to the maximum extent possible, security clearance expenses and other needs. \$5.5M is also included for NEPA compliance activities. 	

Bipartisan Infrastructure Law (BIL) Investments

EERE was appropriated funds through the Bipartisan Infrastructure Law (BIL) (P.L. 117-58), which includes activities realigned to the new Office of Manufacturing and Energy Supply Chains (MESC). In FY 2022, approximately \$1.6 billion of activities related to vehicles, buildings, advanced manufacturing, and energy efficiency will be managed by the new MESC office. In FY 2023, funding will continue for activities related to vehicles (battery manufacturing and recycling grants and battery material processing grants), buildings (implementation grants for industrial research and assessment centers and industrial research and assessment centers), and advanced manufacturing (advanced energy manufacturing and recycling grant program). Please refer to the EERE budget chapter for additional information on these BIL activities.

(\$K)

	FY 2022 BIL Appropriation	FY 2023 BIL Appropriation	Managing Organization
Energy Efficiency and Renewable Energy			
Vehicles			
Battery Manufacturing and Recycling Grants	600,000	600,000	MESC
Battery Material Processing Grants	600,000	600,000	MESC
Weatherization Assistance Program			
Buildings			
Implementation Grants for Industrial Research & Assessment Centers	80,000	80,000	MESC
Industrial Research and Assessment Centers	30,000	30,000	MESC
Advanced Manufacturing			
Battery processing & manufacturing / battery & critical mineral recycling	125,000	0	MESC
Advanced Energy Manufacturing and Recycling Grant Program	150,000	150,000	MESC
Manufacturing Leadership	50,000	0	MESC
Energy Efficiency			
Energy Efficient Transformer Rebates	10,000	0	MESC
Extended Product System Rebates	10,000	0	MESC
Total, Energy Efficiency and Renewable Energy	1,655,000	1,460,000	

Clean Energy Demonstrations

Clean Energy Demonstrations

Office of Clean Energy Demonstrations

Proposed Appropriation Language

For Department of Energy expenses, including the purchase, construction, and acquisition of plant and capital equipment and other expenses necessary for clean energy demonstrations in carrying out the purposes of the Department of Energy Organization Act (42 U.S.C. 7101 et seq.), including the acquisition or condemnation of any real property or any facility or for plant or facility acquisition, construction, or expansion, \$214,052,000, to remain available until expended: Provided, That of such amount, \$25,000,000 shall be available until September 30, 2024, for program direction.

Public Law Authorizations

Public Law 95-91, "Department of Energy Organization Act", 1977

Public Law 106-554, "Consolidated Appropriations Act, 2001"

Public Law 107-50, "Small Business Technology Transfer Program Reauthorization Act of 2001"

Public Law 109-58, "Energy Policy Act of 2005"

Public Law 110-140, "Energy Independence and Security Act of 2007"

Public Law 112-81, "National Defense Authorization Act for Fiscal Year 2012"

Public Law 116-260, "Energy Act of 2020"

Public Law 117-58, "Infrastructure Investment and Jobs Act of 2021"

Office of Clean Energy Demonstrations

	(\$K)	
FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request
0	0	214,052

Overview

The mission of the Office of Clean Energy Demonstrations (OCED) is to deliver clean energy and industrial decarbonization demonstration projects at scale in partnership with the private sector to launch or accelerate market adoption and deployment of technologies, as part of an equitable transition to a decarbonized energy system and economy. OCED was established in December 2021 and was authorized and initially funded through the Bipartisan Infrastructure Law (BIL). The founding of OCED builds on the Department of Energy's (DOE) expertise in clean energy research and development and expands DOE's scope to fill a critical innovation gap on the path to net-zero emissions by 2050.

OCED is a technology-neutral office that serves as a project management oversight center of excellence, implementing key multi-billion-dollar demonstration projects funded via the BIL, as well as supporting the applied programs and other offices to ensure a consistent approach to implementing capital intensive late-stage technology demonstrations. OCED supports demonstration projects that have viability at scale and an expectation of achieving cost competitiveness and bankability in the market over time. OCED investments are part of a clear progression and transition between the research, development, and laboratory and pilot-scale demonstration projects within DOE technology offices and initial full and commercial-scale deployments supported by the private sector or other programs, such as the Loan Programs Office, ensuring coherent strategies for advancing and deploying clean energy technologies and systems. Funding decisions are made to support scalable outcomes that lead to commercialization and deployment.

OCED makes funding decisions with the understanding that substantial risk is involved, and that known and unknown risks factors will impact project outcomes. OCED therefore employs a staged approach to fund demonstrations by dividing project scope into phases, each with defined milestones, schedule, and costs that connect directly to the goals, cost estimate, and schedule for the overall project. OCED controls funding at the project level, providing appropriate flexibility in determining phased funding levels as projects pass through critical go/no go decisions or down-select points informed by rigorous project oversight and management practices. By adhering to the risk profile being established for OCED, where some projects may have more risks than others, OCED will consider off-ramping projects when necessary if it determines the risks of a project exceed this profile. To ensure transparency, OCED tracks and manages detailed information on each project and its phase status which it will use in the management and oversight of demonstration projects.

Highlights of the FY 2023 Budget Request

The FY 2023 Budget requests \$214,052,000 in annual appropriations for OCED to support the continued development of a technology-neutral portfolio of projects alongside its BIL-funded work. Such investments will complement, but not duplicate, the demonstration efforts supported under BIL and will allow OCED to develop business practices and systems to ensure effective oversight of all OCED's portfolio.

Clean Energy Demonstrations (\$189,052,000): OCED funds activities to accelerate and prove the design, construction, and operation of high-impact demonstration projects, at or near a commercial-scale, with the purpose of generating publicly available technical, economic, and environmental performance data essential to developers, financiers, regulators, policymakers, utilities, manufacturers, end users and other stakeholders. FY 2023 planned investments include the following:

- Energy Demonstrations (\$150,052,000): OCED will initiate a new competition in FY 2023 to support commercial-scale projects that demonstrate technologies, or the manufacturing of technologies that integrate renewable and distributed energy systems with broader energy networks. The goal of this new investment area is to support demonstrations that de-risk technologies needed to manage variable generation; control flexible loads; and integrate energy storage electric vehicle (EV) charging, and other facilities into the U.S. transmission and distribution grids. This may include support for demonstrations of innovative hybrid generation systems, as well as the utilization of energy storage technologies, EV charging, controllable loads from buildings and industrial facilities, and other approaches for cost effective integration of renewable energy, as well as the demonstration of operational flexibility, consumer behavior changes, and grid services provision. These investments may also support demonstrations of next-generation manufacturing technologies, process efficiency improvements, and improved supply chain reliability and resiliency in consultation with the new DOE Office of Manufacturing and Energy Supply Chains.
- Advanced Reactor Demonstrations (\$25,000,000): In addition to funding provided via the BIL, OCED will support the Advanced Reactor Demonstration Program. This activity focuses Departmental and non-federal resources on the construction of demonstration reactors in the near- and mid-term that are safe and affordable to build and operate. As part of DOE's consolidation of support for these demonstration projects into OCED from the Office of Nuclear Energy, DOE requests funding for the ARDP demonstrations in OCED. FY 2023 funding will enable OCED to provide additional project management and technical oversight. While BIL provided significant funding that will support the two cost-shared awards, annual appropriations are necessary for DOE to fully fund the likely federal contribution for later phases of the two projects.
- Demonstration Planning and Analysis (\$14,000,000): As part of OCED's implementation of IJJA, the Request includes funding for technical and analysis support including funding for NEPA support and implementation costs. This funding will be used to ensure OCED has the proper support needed to expedite the demonstration activities supported through IJJA and other demonstrations supported by OCED in FY 2023.

Program Direction (\$25,000,000): Program Direction funds Federal salaries and benefits, including staff training and performance awards, travel, Working Capital Fund expenses, associated support services contracts, and administrative expenses to execute the OCED mission. FY 2023 funding will enable a focus on developing business practices and systems to ensure effective oversight of OCED's portfolio.

DOE Reorganization

On February 9, 2022, DOE announced an organizational realignment to ensure that the Department has the structure needed to effectively implement the clean energy investments in the BIL. The new organizational structure establishes two Under Secretaries: one focused on fundamental science and clean energy innovation and the other focused on deploying clean energy infrastructure—supporting DOE's ongoing work to achieve carbon-free electricity in the U.S. by 2035 and a net zero economy by 2050.

OCED was organized into the new Under Secretary for Infrastructure (S3) given the focus on first-of-a-kind large-scale demonstration projects to help move clean energy technologies out of the lab, into the field, and to market at scale so they can make a real-world impact. The S3 organization focuses on deploying clean energy infrastructure in pursuit of national goals for affordable and reliable energy, creating high quality jobs, enhancing U.S. manufacturing, and addressing the climate crisis. Its efforts support achieving carbon-free electricity in the U.S. by 2035 and a net zero economy by 2050 and delivering substantial benefits to the communities that are frequently left behind. S3 provides skilled teams in energy planning; energy security; infrastructure financing; project development; project management; clean energy supply chains; state, community, and tribal engagement;

historic Bipartisan Infrastructure Law and annual appropriations. OCED will work with the other offices in this organization to engage and work in partnership with a diverse set of stakeholders as it stewards and seeks the greatest benefits from federal funding.

**Office of Clean Energy Demonstrations
Funding (\$K)**

FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
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Clean Energy Demonstrations

Clean Energy Demonstrations	0	0	189,052	+189,052	N/A
Program Direction	0	0	25,000	+25,000	N/A
Total, Office of Clean Energy Demonstrations	0	0	214,052	+214,052	N/A

SBIR/STTR:

FY 2021 Enacted: SBIR \$0; STTR: \$0

FY 2022 Annualized CR: SBIR \$0; STTR: \$0

FY 2023 Request: SBIR \$5,344,000; STTR \$751,500

**Office of Clean Energy Demonstrations
Funding (\$K)**

FY 2023 Request vs FY 2021 Enacted

Clean Energy Demonstrations

No funding in FY 2021

+\$189,052

Program Direction

No funding in FY 2021.

+\$25,000

Total, Office of Clean Energy Demonstrations

+\$214,052

Future Years Energy Program (FYEP)

(\$K)

	FY 2023 Request	FY 2024	FY 2025	FY 2026	FY 2027
Office of Clean Energy Demonstrations	214,052	219,000	224,000	229,000	234,000

Outyear Priorities and Assumptions

In the FY 2012 Consolidated Appropriations Act (P.L. 112-74), Congress directed the Department to include a future-years energy program (FYEP) in subsequent requests that reflects the proposed appropriations for five years. This FYEP shows outyear funding for each account for FY 2024 - FY 2027. The outyear funding levels use the growth rates from and match the outyear account totals published in the FY 2023 President’s Budget for both the 050 and non-050 accounts. Actual future budget request levels will be determined as part of the annual budget process.

OCED priorities in the outyears include the following:

- Support new full and commercial-scale demonstration projects that are aligned with addressing clean energy and industrial decarbonization challenges that complement its portfolio of BIL-funded demonstrations. OCED will identify topics for annual demonstration competitions through rigorous portfolio analysis of earlier stage activities supported by the DOE applied energy offices and of challenges as identified by industry and other stakeholders.
- Sustain capability as a DOE project management oversight center of excellence, supporting the applied programs and other offices to ensure a consistent approach to implementing capital intensive technology demonstrations. This will include continued support for expertise in project management, portfolio analysis, and systems needed to manage and execute large-scale demonstration projects
- Support oversight and management of BIL funding and implementation as projects transition into the oversight and management phases.

Office of Clean Energy Demonstrations
Clean Energy Demonstrations

Description

The Clean Energy Demonstrations program represents OCED's support for demonstrations. Each year, OCED will issue at least one technology neutral commercial-scale demonstration competition funded from this program, focused on a crosscutting clean energy or industrial decarbonization investment opportunity. In addition, funding will be used to support previously awarded demonstrations as part of OCED's staged approach to fund demonstrations by dividing project scope into independently useful segments or phases, each with defined milestones, schedule, and costs that connect directly to the goals, cost estimate, and schedule for the overall project. Clean Energy Demonstrations also provides the necessary resources for OCED to evaluate the environmental and related social and economic effects of demonstrations currently under development, including those funded through the BIL.

Energy Demonstrations

This activity supports OCED's annual competition for demonstrations. Each year OCED will launch at least one new competition associated with a crosscutting clean energy or industrial decarbonization investment opportunity. OCED chooses topics, which have the greatest potential for both market adoption and impact. Award decisions are made with an aim to accelerate and prove the design, construction, and operation of high-impact demonstration projects, at or near a commercial-scale, with the purpose of providing essential technical, economic, and environmental performance data to developers, financiers, regulators, policymakers, utilities, manufacturers, end users and other energy decisionmakers.

Advanced Reactor Demonstrations

This activity supports funding for ongoing Advanced Reactor Demonstration Program (ARDP) demonstration projects managed by OCED.

- *Sodium Reactor (TerraPower LLC)*: This project is demonstrating a sodium-cooled fast reactor that uses thermal energy storage for flexible electricity output. The Sodium Reactor project is scheduled for completion in mid-2028.
- *Xe-100 Reactor (X-energy)*: This project is demonstrating a high temperature gas-cooled reactor which upon completion will provide flexible electricity output and carbon-free process heat relevant to a wide range of industrial applications. The X-100 Reactor project is currently scheduled for completion in late 2027.

Demonstration Planning and Analysis

This activity provides resources for activities such as National Environmental Policy Act (NEPA) analysis and support for ongoing demonstration projects. Such funding ensures that projects underway have adequate resources to comply with local and federal policies and regulations.

Departmental Crosscutting Activities:

OCED's Clean Energy Demonstrations program supports the following DOE-wide crosscutting investments:

- **Grid Modernization (\$175,052,000):** In support of the goals of this crosscutting investment, OCED will support a competitive demonstration solicitation with a focus on support full-scale and commercial-scale demonstrations related to the integration of renewable and distributed energy systems. OCED will also continue to support its ongoing ARDP demonstration, a critical component of DOE's strategy to meet Administration's goals of 100 percent clean energy generation by 2035 and net-zero emissions by 2050 by enabling the deployment of advanced clean nuclear energy.
- **Energy Storage (\$12,500,000):** As part of OCED's continued stewardship of the Advanced Reactor Demonstration Program demonstration projects, OCED will continue to support the development of the Natrium sodium-cooled fast reactor demonstration. This project will incorporate a molten salt thermal energy storage system that could be used to store energy when demand is low and increase electricity output of the reactor when demand increases. While BIL provided significant funding that will support this cost-shared award, annual appropriations are necessary for DOE to fully fund the likely federal contribution for later phases of the project.

**Clean Energy Demonstrations
Program Support**

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
Program Support \$0	\$189,052,000	+\$189,052,000
Energy Challenge Demonstrations	\$150,052,000	+\$150,052,000
<ul style="list-style-type: none"> No funding. 	<ul style="list-style-type: none"> Initiate a new competition to support demonstrations that integrate renewable and distributed energy systems. The goal of this investment will be to de-risk technologies needed to manage variable generation; control flexible loads; and integrate energy storage electric vehicle (EV) charging, and other facilities into the U.S. transmission and distribution grids. 	<ul style="list-style-type: none"> FY 2023 is the first year of funding for this activity.
Advanced Reactor Demonstration Program	\$25,000,000	+\$25,000,000
<ul style="list-style-type: none"> No funding in OCED. Management and oversight of this program was transferred to OCED from the Office of Nuclear Energy in FY 2022. 	<ul style="list-style-type: none"> As part of the transfer of funding for the Advanced Reactor Demonstration Program (ARDP) from Office of Nuclear Energy to OCED, provide funding for additional project management and technical oversight and meet commitments for the continued construction of the two demonstrations to ensure these awards can meet the program goals established by Congress. 	<ul style="list-style-type: none"> FY 2023 is the first year of funding within OCED for this activity.
Demonstration Planning and Analysis	\$14,000,000	+\$14,000,000
<ul style="list-style-type: none"> No funding. 	<ul style="list-style-type: none"> Initiate technical and analysis support to expedite approvals for BIL-funded and other demonstrations supported by OCED in FY 2023. 	<ul style="list-style-type: none"> FY 2023 is the first year of funding for this activity.

Clean Energy Demonstrations Program Direction

Overview

Program Direction enables OCED to maintain and support a world-class Federal workforce that supports its mission. The FY 2023 Request provides resources for program and project management, oversight activities, contract administration, workforce management, IT support, and Headquarters facilities and infrastructure costs.

Highlights of the FY 2023 Budget Request

The FY 2023 OCED Program Direction Budget Request will:

- Support 90 FTE needed to continue to implement development, execution, and oversight of crosscutting OCED activities and investments not directly tied to the provisions of the BIL.
- Support strengthening OCED's overall performance, organization, budget, operations, human capital, and project management as the office continues to grow in support of its mission.
- Support the development and issuance of competitive solicitations for demonstration(s) of commercial-scale clean energy and/or industrial decarbonization technologies.
- Support project management activities and coordination with the applied offices on the execution and management of demonstration projects.

Salaries and Benefits: The Request assumes a 4.6 percent federal staff pay increase and annualization of the 2.7 percent increase from 2022 to support up to 90 FTE.

Travel: The Request provides for travel for project oversight and outreach and information exchanges with stakeholders including industry and energy communities to ensure maximum impact of investments and future deployment.

Support Services: The Request includes funds for contract support to implement programmatic priorities. This includes funding for technical and management support to develop standard operating procedures, business practices, and OCED's project management oversight capabilities.

Other Related Expenses: The Request includes funding for OCED's contribution to the DOE Working Capital Fund, information technology services, staff training, and other investments critical for operations.

**Program Direction
Funding (\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
Program Direction				
Washington Headquarters				
Salaries and Benefits	0	0	11,261	+11,261
Travel	0	0	400	+400
Support Services	0	0	+2,952	+2,952
Other Related Expenses	0	0	3,836	+3,836
Total, Washington Headquarters	0	0	18,449	+18,449
Idaho Field Office				
Salaries and Benefits	0	0	152	+152
Travel	0	0	6	+6
Support Services	0	0	40	+40
Other Related Expenses	0	0	52	+52
Total, Idaho Field Office	0	0	250	+250
Golden Field Office				
Salaries and Benefits	0	0	1,984	+1,984
Travel	0	0	71	+71
Support Services	0	0	520	+520
Other Related Expenses	0	0	676	+676
Total, Golden Field Office	0	0	3,251	+3,251
National Energy Technology Laboratory				
Salaries and Benefits	0	0	1,862	+1,862
Travel	0	0	66	+66
Support Services	0	0	488	+488
Other Related Expenses	0	0	634	+634
Total, National Energy Technology Laboratory	0	0	3,050	+3,050
Total Program Direction				
Salaries and Benefits	0	0	15,259	+15,259
Travel	0	0	543	+543
Support Services	0	0	4,000	+4,000
Other Related Expenses	0	0	5,198	+5,198
Total, Program Direction	0	0	25,000	+25,000

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
Federal FTEs	0	0	90	+90
Support Services				
Technical Support	0	0	1,000	+1,000
Management Support	0	0	3,000	+3,000
Total, Support Services	0	0	4,000	+4,000
Other Related Expenses				
Other Services			1,598	+1,598
Working Capital Fund	0	0	3,600	+3,600
Total, Other Related Expenses	0	0	5,198	+5,198

**Clean Energy Demonstrations
Program Direction**

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
Program Direction \$0	\$25,000,000	+\$25,000,000
Salaries and Benefits \$0	\$15,259,000	+\$15,259,000
<ul style="list-style-type: none"> No funding in FY 2021. 	<ul style="list-style-type: none"> Funding supports salaries and benefits for 90 FTEs to provide project management support, competitive solicitation development support, and financial control. The Request also will support costs associated with Federal employee benefits, including health insurance costs and retirement allocations in FERS. 	<ul style="list-style-type: none"> New funding will meet the anticipated staffing needs of the office to execute anticipated roles and responsibilities, as well as to provide supplemental funding for performance award pools. The amount also accounts for a 4.6 percent increase in Federal salaries and the annualization of the CY 2022 2.7 percent pay increase.
Travel \$0	\$543,000	+543,000
<ul style="list-style-type: none"> No funding in FY 2021. 	<ul style="list-style-type: none"> Funding will support staff travel for onsite solicitation process requirements and project management support as well as outreach to stakeholders including those in traditionally disadvantaged including energy communities and industry. This includes conducting information exchanges and administration during competitive cycle and travel related to the implementation and award of projects from the FY 2023 solicitation and ongoing awards. 	<ul style="list-style-type: none"> New funding reflects anticipated need for staff to travel as part of OCED duties.
Support Services \$0	\$4,000,000	+4,000,000
<ul style="list-style-type: none"> No funding in FY 2021. 	<ul style="list-style-type: none"> Funding for support services to provide support with technical and administrative support during project solicitation cycle, and during office management of project implementation. Contract support for data gathering and analysis, developing communications and marketing tools and content, and conducting 	<ul style="list-style-type: none"> New funding reflects need for technical/administrative support services in launching and managing multiple years of project solicitation cycles and active project management.

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
	other required data collection, verification, validation, and reporting requirements.	
Other Related Services \$0	\$5,198,000	+\$5,198,000
<ul style="list-style-type: none"> No funding in FY 2021. 	<ul style="list-style-type: none"> Funding for Energy IT Services (EITS), Working Capital Fund (WCF), training, and other services. 	<ul style="list-style-type: none"> New funding reflects costs associated with up to 90 FTE.

**Office of Clean Energy Demonstrations
Research and Development (\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
Basic	0	0	0	0
Applied	0	0	0	0
Development	0	0	167,000	+167,000
Subtotal, R&D	0	0	167,000	+167,000
Equipment	0	0	0	0
Construction	0	0	0	0
Total, R&D	0	0	167,000	+167,000

Bipartisan Infrastructure Law (BIL) Investments

OCED was appropriated funds through the Bipartisan Infrastructure Law (BIL) (P.L. 117-58). Not all BIL activities will be managed by the organization to which funds were appropriated.

(\$K)

	FY 2022 BIL Appropriation	FY 2023 BIL Appropriation	Managing Organization
Clean Energy Demonstrations			
Carbon Capture Demonstration Projects Program	937,000	500,000	OCED
Carbon Capture Large-Scale Pilot Projects	387,000	200,000	OCED
Industrial Emissions Demonstration Projects	100,000	100,000	OCED
Clean Energy Demonstration Program on Current and Former Mine Lands	100,000	100,000	OCED
Activities for Energy Improvement in Rural and Remote Areas	200,000	200,000	OCED
Program Upgrading Our Electric Grid and Ensuring Reliability and Resiliency	1,000,000	1,000,000	OCED
Energy Storage Demonstration Pilot Grant Program	88,750	88,750	OCED
Long-Duration Energy Storage Demonstration Initiative and Joint Program	37,500	37,500	OCED
Regional Clean Hydrogen Hubs	1,600,000	1,600,000	OCED
Advanced Reactor Demonstration Program	677,000	600,000	OCED
Total, Clean Energy Demonstrations	5,127,250	4,426,250	

- **Carbon Capture Demonstration Projects Program:** The goal of this investment is to establish a carbon capture technology program for the development of six facilities to demonstrate transformational technologies that will significantly improve the efficiency, effectiveness, costs, emissions reductions, and environmental performance of coal and natural gas use, including in manufacturing and industrial facilities. FY 2023 funding will support initial award selections from a previously released funding announcement.
- **Carbon Capture Large-Scale Pilot Projects:** The goal of this investment is to support the development of transformational technologies that will significantly improve the efficiency, effectiveness, costs, emissions reductions, and environmental performance of coal and natural gas use, including in manufacturing and industrial facilities. FY 2023 funds will support multiple pilot projects, selected through a funding opportunity announcement, to de-risk carbon capture on actual exhaust from industrial and power sectors.
- **Industrial Emission Demonstration Projects:** This goal of this investment is to support demonstration projects that test and validate technologies that reduce industrial emissions. FY 2023 funding will support short-duration technical engineering and design studies to inform subsequent large-scale demonstration projects as well as first-of-a-kind industrial demonstrations in response to a previously released funding opportunity announcement.
- **Clean Energy Demonstration Program on Current and Former Mine Lands:** The goal of this investment is to demonstrate the technical and economic viability of conducting clean energy projects on current and former mine lands. OCED will support up to five clean energy projects in geographically diverse regions, at least two of which shall be solar projects. OCED will provide initial funding for these demonstrations in FY 2023.
- **Activities for Energy Improvement in Rural and Remote Areas:** The goal of this investment is to provide financial assistance to improve, in rural or remote areas of the United States, the resilience, safety, reliability, and availability of energy; and environmental protection from adverse impacts of energy generation in consultation with the Department of the Interior. FY 2023 funding will support technical assessments with lab consortia, stakeholder engagement, and awards to establish project teams.

- **Program Upgrading Our Electric Grid and Ensuring Reliability and Resiliency:** The goal of this investment is to provide federal financial assistance to demonstrate innovative approaches to transmission, storage, and distribution infrastructure to harden and enhance resilience and reliability; and to demonstrate novel approaches to enhance regional grid resilience. FY 2023 funding will support competitive grants, implemented through States by public and rural electric cooperative entities on a cost-shared basis. OCED will manage this investment in close coordination with the DOE Grid Deployment Office.
- **Energy Storage Demonstration Pilot Grant Program:** The goal of this investment is to support three first of their kind energy storage system demonstration projects. FY 2023 funding will be used to support awards selected from a competitive funding opportunity announcement.
- **Long-Duration Energy Storage Demonstration Initiative and Joint Program:** The goal of this investment is to establish a demonstration initiative composed of demonstration projects focused on the development of long-duration energy storage technologies. FY 2023 funding will be used for initial funding of awards resulting from a competitive funding opportunity announcement.
- **Regional Clean Hydrogen Hubs:** The goal of this investment is to support the development of at least four regional clean hydrogen hubs that demonstrably aid the achievement of the clean hydrogen production standard; demonstrate the production, processing, delivery, storage, and end use of clean hydrogen; and can be developed into a national clean hydrogen network to facilitate a clean hydrogen economy. FY 2023 funding will support initial awards made in this program as the result of a competitive funding opportunity announcement.
- **Advanced Reactor Demonstration Program:** In addition to the funding provided in the base program, OCED will support two large demonstrations of advanced nuclear reactors for electricity generation. OCED will provide FY 2023 funding for continued development and construction of two first-of-a-kind advanced reactors to be licensed for commercial operations.

Petroleum Reserves

Petroleum Reserves

**Strategic Petroleum Reserve
Proposed Appropriation Language**

For Department of Energy expenses necessary for Strategic Petroleum Reserve facility development and operations and program management activities pursuant to the Energy Policy and Conservation Act (42 U.S.C. 6201 et seq.), \$214,175,000, to remain available until expended.

Note. —A full-year 2022 appropriation for this account was not enacted at the time the budget was prepared; therefore, the budget assumes this account is operating under the Continuing Appropriations Act, 2022 (Division A of P.L. 117-43, as amended). The amounts included for 2022 reflect the annualized level provided by the continuing resolution.

Explanation of Changes

The FY 2023 Request reflects increases for the Strategic Petroleum Reserve Cavern Integrity program, Maintenance program, Piping Integrity, Data Systems, and Cybersecurity and Physical Security Program activities, with a decrease to the Major Maintenance Program. The Request also funds the Northeast Gasoline Supply Reserve.

Public Law Authorizations

Public Law 109-58, “Energy Policy Act of 2005”

Bipartisan Budget Act of 2015 (P.L. 114-74, Section 403)

Bipartisan Budget Act of 2018 (P.L. 115-123)

Energy Policy and Conservation Act, P.L. 94-163, as amended, Section 151

**Strategic Petroleum Reserve
(\$K)**

FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
188,000	188,000	214,175	+26,175

Overview

The Strategic Petroleum Reserve (SPR) protects the U.S. economy from disruptions in critical petroleum supplies and meets United States (U.S.) obligations under the International Energy Program (Energy Policy and Conservation Act, P.L. 94-163, as amended, Section 151). The SPR benefits the U.S. by providing an insurance policy against potential interruptions in U.S. petroleum supplies, whether originating from domestic or international supply disruptions, natural disasters, sabotage, or acts of terrorism. The SPR also provides limited capability to lease excess storage space to outside entities.

The FY 2023 Budget supports the program’s operational readiness and drawdown capabilities. The SPR will continue conducting multiple, non-emergency crude oil sales in FY 2023 as directed by (1) the Bipartisan Budget Act of 2015 (P.L. 114-74, Section 403), which directs the sale of 10 million barrels in FY 2023, and (2) the Fixing America’s Surface Transportation (FAST) Act (Public Law 114-94), pursuant to which the SPR is directed to sell 66 million barrels from FY 2023 through FY 2025, of which the SPR will sell approximately 16 million barrels in FY 2023. Combined, the SPR anticipates total FY 2023 sales of about 26 million barrels.

The Northeast Gasoline Supply Reserve (NGSR) was administratively established in 2014 as part of the SPR to ease regional shortages resulting from sudden/unexpected supply interruptions (e.g., Superstorm Sandy). The NGSR consists of 1 million barrels of gasoline blendstock stored in leased commercial storage terminals located in Maine, Massachusetts, and New Jersey.

Highlights and Major Changes in the FY 2023 Budget Request

The SPR Program will pursue the following major activities in FY 2023:

- Equipment and facility maintenance to sustain drawdown capability.
- Legislatively directed non-emergency multi-year crude oil sales.
- Security Program and maintenance of security related infrastructure items.
- Storage cavern wellbore diagnostic and remediation activities using 1 workover rig and crew that includes 11 cavern wellbore workovers. This includes Mechanical Integrity Testing required for cavern wells, and repair actions when wells fail to meet standards during the 5-year state-required testing cycle.

FY 2023 funding includes the utilization of one rig and workover rig crew to perform 11 cavern wellbore workovers within the Cavern Integrity Program, compared to 2 cavern wellbore remediations and 4 cavern well workovers that were performed in FY 2021. Unanticipated cavern issues may require reprioritization of projects to fund emergency repairs with consideration to activities associated with normal operations, multi-year crude oil sales and the Life Extension II (LE2) Project. There are no planned Major Maintenance construction projects compared to 9 in FY 2021. An increase to the Maintenance Program supports preventive and corrective maintenance to equipment and infrastructure for Drawdown Readiness in a safe, timely, and environmentally compliant manner and in performing Congressionally mandated crude oil sales. With an increase to the Security Program it retains capable and adequate effectiveness in providing a deterrence and response posture to adversarial threats.

Cybersecurity: DOE is engaged in three categories of cyber-related activities: protecting the DOE enterprise from a range of cyber threats that can adversely impact mission capabilities; bolstering the U.S. Government’s capabilities to address cyber threats; and improving cybersecurity in the electric power subsector and the oil and natural gas subsector. The cybersecurity crosscut supports central coordination of the strategic and operational aspects of cybersecurity and facilitates cooperative efforts such as the Joint Cybersecurity Coordination Center for incident response and the implementation of Department-wide Identity Credential and Access Management.

	Cyber-security	Total
Facilities Development and Operations	3,144	3,144

**Strategic Petroleum Reserve
Funding by Congressional Control (\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
Strategic Petroleum Reserve					
Facilities Development and Operations	160,949	160,949	164,818	+3,869	+2.4%
Management	27,051	27,051	27,642	+591	+2.2%
Northeast Gasoline Supply Reserve	0	0	21,715	+21,715	+100%
Total, Strategic Petroleum Reserve	188,000	188,000	214,175	+26,175	+13.9%
Federal FTEs	126	126	126	0	

**Future Years Energy Program (FYEP)
(\$K)**

	FY 2023 Request	FY 2024	FY 2025	FY 2026	FY 2027
Strategic Petroleum Reserve	214,175	230,815	235,915	241,015	246,115

Major Outyear Priorities and Assumptions

In the FY 2012 Consolidated Appropriations Act (P.L. 112-74), Congress directed the Department to include a future-years energy program (FYEP) in subsequent requests that reflects the proposed appropriations for five years. For FY 2023, DOE proposes to submit a FYEP, to be included in the FY 2023 Budget, that shows outyear funding for each account for FY 2024 - FY 2027. By meeting this statutory requirement, DOE can plan better and focus on initiatives that go beyond a single year. This approach provides more insight into the long-term implications of annual budget decisions. Although the outyear funding levels will match the mechanically generated outyear totals published in the FY 2023 President's Budget within the MAX A-11 data set for both the 050 and non-050 accounts, the numbers are not indicative of any future budget request levels. Funding requests for FY 2024 through FY 2027 will be determined as part of the annual budget process. This approach provides more insight into the long-term implications of annual budget decisions. This FYEP section will include a brief narrative broadly discussing administration priorities that are not expected to change in the coming years and are expected to guide decisions in future budgets.

Strategic Petroleum Reserve

Overview

The Strategic Petroleum Reserve (SPR) protects the U.S. economy from disruptions in critical petroleum supplies or demand and meets U.S. obligations under the International Energy Program (Energy Policy and Conservation Act, P.L. 94-163, as amended, Section 151). The SPR benefits the U.S. by providing an insurance policy against potential interruptions in U.S. petroleum supplies or demand whether originating from domestic and international supply disruptions, natural disasters, sabotage, and acts of terrorism.

The SPR has 594 million barrels of crude oil inventory (as of December 31, 2021) stored in underground cavern storage, providing the U.S. with multiple geostrategic benefits, and bolstering the world's collective energy security system. A release of petroleum from the SPR can mitigate the potential economic damage of an actual disruption in international or domestic petroleum supplies and the accompanying price increases. The SPR avails the U.S. with international emergency assistance through its participation in the International Energy Agency (IEA) energy supply security initiatives. IEA members are required to maintain 90 days' worth of net petroleum import protection in government-owned and/or commercial stocks and have a commitment to participate with other stockholding nations in a coordinated release of stocks in the event of a major supply disruption. While the U.S. is a net exporter of crude oil and all petroleum products as defined by the IEA, the inventory of 594 million barrels of crude oil as of December 31, 2021 would provide about 189 days of 2021 net crude oil import protection (based on net crude oil imports of 3.143 million barrels per day as reported in the U.S. Energy Information Administration's Petroleum Supply Monthly with Data Through November 2021). The SPR has a maximum drawdown capability of over 4 million barrels per day, which could be made available in the event of an IEA collective action. The United States percentage share of an IEA collective action release is 42.4%, as of December 2021.

To accomplish its mission and address the challenges outlined above, the SPR program is organized into two subprograms: 1) Facilities Development and Operations and 2) Management. The Facilities Development and Operations subprogram funds all requirements associated with developing and maintaining facilities for the storage of petroleum, operations activities associated with placing petroleum into storage and operational readiness initiatives associated with drawing down and distributing the inventory within 13 days' notice in the event of an emergency. The Management subprogram funds personnel and administrative expenses related to maintaining the Project Management Office (New Orleans, LA) and the Program Office (Washington, DC), as well as contract services required to support management and technical analysis of program initiatives and issues.

Highlights of the FY 2023 Budget Request

SPR's underground storage caverns require maintenance to assure their storage capability and integrity. Ongoing oil sale activities increase equipment usage and run times and require consistent preventive, predictive and corrective maintenance to prevent or address equipment failures.

Cavern Integrity

The Casing Inspection and Cavern Remediation Program was developed in 2010 to remediate the anomalies in cavern wellbore casings. This is necessary to maintain the required level of operational and drawdown/fill capability. Cavern remediation and diagnostic workovers anticipate and remediate cavern wellbore failures that cause caverns to be removed from service, and in preventing potential environmental releases.

Maintenance and Major Maintenance

Maintenance of SPR equipment and facilities supports drawdown/fill readiness in a safe and environmentally compliant manner. Increased infrastructure use due to legislatively directed, multi-year crude oil sales require additional Maintenance and Major Maintenance activities to sustain operational readiness. It includes the maintenance of infrastructure items that support Physical Security.

Major changes in FY 2023 include no new planned Major Maintenance construction projects that will be a decrease from 9 in FY 2021. Increased maintenance activities in preventive and corrective maintenance, to equipment and facility infrastructure. The Cavern Integrity Program will perform 1 cavern wellbore remediation and 11 cavern wellbore workovers. With an increase to the Security Program it retains capable and adequate effectiveness in providing a deterrence and response posture to adversarial threats.

**Strategic Petroleum Reserve
Funding (\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
Strategic Petroleum Reserve					
Facilities Development and Operations	160,949	160,949	164,818	+3,869	+2.4%
Management	27,051	27,051	27,642	+591	+2.2%
Northeast Gasoline Supply Reserve	0	0	21,715	21,715	+100%
Total, Strategic Petroleum Reserve	188,000	188,000	214,175	+26,175	+13.9%
Federal FTEs	126	126	126	0	

**Strategic Petroleum Reserve
Explanation of Major Changes (\$K)**

FY 2023 Request vs FY 2021 Enacted

<p>Facilities Development and Operations: The Request reflects increases to the Cavern Integrity Program (+\$1,909); the Maintenance Program (+\$3,087); IT life-cycle upgrades; Physical Security Program for SPR sites (+\$569). and replacements for support systems projects and contractor service support (+\$4,329); it reflects decreases to the Major Maintenance Program (-\$6,025).</p>	<p>+3,869</p>
<p>Management: The Request reflects an increase for salaries and benefits escalation, rent to others, and decreases to technical support services and funding to support for DOE field employee evacuation expenses in the event of a hurricane.</p>	<p>+591</p>
<p>Northeast Gasoline Supply Reserve: The FY 2023 Budget Request reflects continuing support for the commercial gasoline storage leases.</p>	<p>+21,715</p>
<hr/> <p>Total, Strategic Petroleum Reserve</p>	<hr/> <p>+\$26,175</p>

Strategic Petroleum Reserve Facilities Development and Operations

Description

The Facilities Development and Operations subprogram funds activities to maintain the SPR's operational readiness capability for successful drawdowns/fills and operate the sites in a safe, secure, and environmentally acceptable manner. Despite a significant reduction in U.S. reliance on imported petroleum, with significant global reserves in regions of the world subject to political unrest, the U.S. economy remains vulnerable to price increases/decreases related to petroleum supply/demand disruptions. The SPR's stockpile of petroleum products and spare capacity diminishes these vulnerabilities to the effects of supply/demand disruptions.

The SPR's underground storage caverns require maintenance to assure their storage capability and integrity. Surface and sub-surface infrastructure and systems that must be maintained to meet operational readiness requirements have been identified and are funded in this subprogram.

**Facilities Development and Operations
Funding**

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
Facilities Development and Operations \$160,949,000	\$164,818,000	+\$3,869,000
Casing Inspections and Remediations \$31,456,000	Casing Inspections and Remediations \$33,365,000	Casing Inspections and Remediations +\$1,909,000
<ul style="list-style-type: none"> Funding level supports 1 cavern workover rig and leased crew to execute 2 remediation and 4 cavern wellbore diagnostic workovers. 	<ul style="list-style-type: none"> Funding level supports 1 cavern workover rig and leased crew to execute 11 cavern wellbore diagnostic workovers. 	<ul style="list-style-type: none"> The increase is for the Cavern Integrity Program that allows for an increase compared to FY 2021 of 7 cavern wellbore diagnostic workovers utilizing one leased rig and crew for cavern integrity operations to insure drawdown capability.
Major Maintenance \$9,814,000	Major Maintenance \$3,789,000	Major Maintenance -\$6,025,000
<ul style="list-style-type: none"> Continue approach to repair, replace, or upgrade equipment including Security, Environmental, Safety & Health (ESH), Drawdown and Non-Drawdown critical systems. 	<ul style="list-style-type: none"> Continue approach to repair, replace, or upgrade equipment including Security, ESH, Drawdown and Non-Drawdown critical systems. 	<ul style="list-style-type: none"> Decreased funding level represents no planned construction projects in FY 2023 as compared to 9 in FY 2021. approach to repair, replace, or upgrade equipment including Security, ESH, Drawdown and Non-Drawdown critical systems.
Maintenance \$23,937,000	Maintenance \$27,024,000	Maintenance +\$3,087,000
<ul style="list-style-type: none"> Provides preventive/corrective/predictive maintenance of the SPR equipment and facilities to support drawdown readiness in a safe and environmentally compliant manner. 	<ul style="list-style-type: none"> Provides preventive/corrective/predictive maintenance of the SPR equipment and facilities to support drawdown readiness in a safe and environmentally compliant manner. 	<ul style="list-style-type: none"> The increase supports additional materials and services for maintenance of pumps, motors, valves, and actuators of drawdown/fill critical equipment while maintaining an acceptable level of risk of equipment failures which could affect drawdown/fill operations.
Security \$21,169,000	Security \$21,738,000	Security +\$569,000
<ul style="list-style-type: none"> Protect and defend personnel, property and resources against assault, sabotage, vandalism, theft, trespass, and compromise of sensitive as well as classified information. 	<ul style="list-style-type: none"> Protect and defend personnel, property and resources against assault, sabotage, vandalism, theft, trespass, and compromise of sensitive as well as classified information. 	<ul style="list-style-type: none"> The increase is for the Security Program to provide for a safe and secure workplace to meet DOE and Federal requirements for the protection of resources and information and ensuring drawdown readiness.

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
Data Systems & Support \$74,573,000	Data Systems & Support \$78,902,000	Data Systems & Support +\$4,329,000
<ul style="list-style-type: none"> Data Systems to support the mission of drawdown readiness, processing, sale, and receipt of goods (oil), communications, reporting, providing protection from malware and computer viruses, and all other activity associated with the use of data and information systems. Compliance requirements for Fire Protection, Department of Transportation (DOT) 5-year Navigable Waterway Inspection, Risk Management Approach Implementation Plan (RMAIP), Multi-Factor Authentication and Piping Assurance Program. 	<ul style="list-style-type: none"> Data Systems to support the mission of drawdown readiness, processing, sale, and receipt of goods (oil), communications, reporting, providing protection from malware and computer viruses, and all other activity associated with the use of data and information systems. Compliance requirements for Fire Protection, DOT 5-year Navigable Waterway Inspection, RMIAP (Cyber Security), Multi-Factor Authentication and Piping Assurance Program. 	<ul style="list-style-type: none"> Funding level reflects an increase for replacement of life-cycle site operations equipment, data system server hardware and software upgrades, RMAIP, Piping Integrity Program, technical services support activities to include Engineering, Quality Assurance, Property Management, Procurement, Safety & Health and Financial Management.

**Strategic Petroleum Reserve
Capital Summary¹ (\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
Capital Operating Expenses Summary (including MIE)					
Capital Equipment > \$500K (including MIE)	6,795	6,795	0	-6,795	-100.0%
Plant Projects (GPP >\$10M)	0	0	0	0	0.0%
Total, Capital Operating Expenses	6,795	6,795	0	-6,795	-100.0%
Capital Equipment > \$500K (including MIE)					
Total Non-MIE Capital Equipment (>\$500K)	6,795	6,795	0	-6,795	-100.0%
Total, Capital Equipment (including MIE)	6,795	6,795	0	-6,795	-100.0%
Plant Projects (GPP - Total Estimated Cost >\$10M)					
Total, Plant Projects (GPP – Total Estimated Cost)	0	0	0	0	0.0%
Total, Capital Summary	6,795	6,795	0	-6,795	-100.0%

¹ This list of projects is illustrative and can be adjusted based on operational requirements, priorities, and/or funding.

Strategic Petroleum Reserve Management

Overview

Management provides funding for the salaries and related requirements of the Headquarters federal workforce responsible for providing programmatic policy, planning and oversight, to include strategic project planning, budget formulation and financial management, operations, engineering, safety, security, and technical analysis of programmatic activity of the SPR. The additional Federal workforce of the SPR Project Management Office directs program execution and establishes technical performance standards as well as scope, cost, and schedule milestones for the Management and Operations contractor.

Highlights of the FY 2023 Budget Request

The Federal staff remains at 126 FTEs with additional technical support contractors. Travel is for operational field support and oversight, including site and vendor visits. Other related expenses include field building leases and telecommunications activities.

**Management
Funding (\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
Program Direction Summary					
Washington Headquarters					
Salaries and Benefits	5,674	5,674	5,844	+170	+3.0%
Travel	130	130	120	-10	-7.7%
Support Services	2,109	2,109	1,619	-490	-23.2%
Other Related Expenses	1,087	1,087	917	-170	-15.6%
Total, Washington Headquarters	9,000	9,000	8,500	-500	-5.6%
Strategic Petroleum Reserve Project Management Office					
Salaries and Benefits	15,172	15,172	15,941	+769	+5.1%
Travel	604	604	575	-29	-4.8%
Support Services	450	450	715	+265	+58.9%
Other Related Expenses	1,825	1,825	1,911	+86	+4.7%
Total, SPR Project Management Office	18,051	18,051	19,142	+1,091	+6.0%
Total Management					
Salaries and Benefits	20,846	20,846	21,785	+939	+4.5%
Travel	734	734	695	-39	-5.3%
Support Services	2,559	2,559	2,334	-225	-8.8%
Other Related Expenses	2,912	2,912	2,828	-84	-2.9%
Total, Management	27,051	27,051	27,642	+591	+2.2%
Federal FTEs	126	126	126	0	

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
Support Services					
Technical Support					
Economic & Environmental Analysis	570	570	570	0	0.0%
Total, Technical Support	570	570	570	0	0.0%
Management Support					
Training and OPM Recruitment	150	150	150	0	0.0%
Technical Support	1,839	1,839	1,614	-225	-12.2%
Total Management Support	1,989	1,989	1,764	-225	-11.3%
Total, Support Services	2,559	2,559	2,334	-225	-8.8%
Other Related Expenses					
Rent to Others	636	636	719	+83	+13.1%
Communications, Utilities, Misc.	77	77	109	+32	+41.6%
Other Services	1,699	1,699	1,350	-349	-20.5%
Supplies and Materials	50	50	50	0	0.0%
Equipment	450	450	600	+150	+33.30%
Total, Other Related Expenses	2,912	2,912	2,828	-84	-2.9%

**Management
Funding**

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
Management \$27,051,000	\$27,642,000	+\$591,000
Salaries and Benefits \$20,846,000	\$21,785,000	+\$939,000
<ul style="list-style-type: none"> The funding supports salaries and benefits for 126 FTEs and associated costs required to provide overall direction and execution of the SPR. The SPR mission is carried out by a workforce composed largely of M&O contractors, although there are a variety of functions that are inherently governmental (i.e., program management, contract administration, budget formulation, and interagency/international coordination) that require a dedicated Federal workforce. 	<ul style="list-style-type: none"> The funding supports salaries and benefits for 126 FTEs and associated costs required to provide overall direction and execution of the SPR. The SPR mission is carried out by a workforce composed largely of M&O contractors, although there are a variety of functions that are inherently governmental (i.e., program management, contract administration, budget formulation, and interagency/international coordination) that require a dedicated Federal workforce. 	<ul style="list-style-type: none"> Increase reflects escalation in costs.
Travel \$734,000	\$695,000	-\$39,000
<ul style="list-style-type: none"> Provides travel to assure capability to achieve Level 1 Performance criteria for drawdown and distribution of the Reserve. 	<ul style="list-style-type: none"> Provides travel to assure capability to achieve Level 1 Performance criteria for drawdown and distribution of the Reserve. 	<ul style="list-style-type: none"> Minor reduction in travel is due to more virtual capability being used .Supports travel required to ensure the reserve is drawdown ready.
Support Services \$2,559,000	\$2,334,000	-\$225,000
<ul style="list-style-type: none"> Activities support project-planning efforts to maintain technical, mission essential support capabilities. 	<ul style="list-style-type: none"> Activities support project-planning efforts to maintain technical, mission essential support capabilities. 	<ul style="list-style-type: none"> Decrease reflects reduced project-planning efforts for technical analysis which support programmatic planning and capability requirements.
Other Related Expenses \$2,912,000	\$2,828,000	-\$84,000
<ul style="list-style-type: none"> Provides teleconferencing capabilities between sites; field site building leases; analytical support services and materials; Information Technology (IT) hardware and software materials and services support; and contingency for DOE field employee evacuation expenses in the event of a hurricane. 	<ul style="list-style-type: none"> Provides teleconferencing capabilities between sites; field site building leases; analytical support services and materials; Information Technology (IT) hardware and software materials and services support. 	<ul style="list-style-type: none"> Decrease reflects increases for the cost of field site building leases, IT hardware and software materials and services and a decrease in the cost of supporting DOE field employee evacuation expenses in the event of a hurricane.

**Strategic Petroleum Reserve
Facilities Maintenance and Repair**

The SPR Program’s Facilities Maintenance and Repair activities are tied to its programmatic missions, goals, and objectives. The Facilities Maintenance and Repair activities funded by this budget and displayed below are intended to halt asset condition degradation.

Costs for Direct-Funded Maintenance and Repair (including Deferred Maintenance Reduction) (\$K)

	FY 2021 Actual Cost	FY 2021 Planned Cost	FY 2022 Planned Cost	FY 2023 Planned Cost
Strategic Petroleum Reserve	34,472	32,792	32,113	29,822
Total, Direct-Funded Maintenance and Repair	34,472	32,792	32,113	29,822

Report on FY 2021 Expenditures for Maintenance and Repair

This report responds to legislative language set forth in Conference Report (H.R. 108-10) accompanying the Consolidated Appropriations Resolution, 2003 (Public Law 108-7) (pages 886-887), which requests the Department of Energy provide an annual year-end report on maintenance expenditures to the Committees on Appropriations. This report compares the actual maintenance expenditures in FY 2021 to the amount planned for FY 2021, including congressionally directed changes.

Total Costs for Maintenance and Repair (\$K)

	FY 2021 Actual Cost	FY 2021 Planned Cost
Strategic Petroleum Reserve	34,472	32,792
Total, Direct-Funded Maintenance and Repair	34,472	32,792

**18-E-001, Strategic Petroleum Reserve (SPR) Modernization
Various locations**

Project Data Sheet for Design and Construction

1. Summary, Significant Changes, and Schedule and Cost History

Summary

Initially, the SPR Modernization Program was comprised of two projects: the Life Extension Phase II (LE2) project (18-E-001-01), and the Marine Terminal Distribution Capability Enhancements (MTE) project (18-E-001-02); however, the MTE project has since been cancelled due to lack of current mission need. The LE2 project will modernize aging SPR infrastructure through systems upgrades and associated equipment replacement to ensure continued ability to meet mission requirements for the next 15-25 years. LE2 activities will occur at all four SPR storage sites: Bryan Mound, Big Hill, West Hackberry, and Bayou Choctaw. This Project Data sheet does not include the impacts to LE2 from the Presidentially ordered drawdown of March 2022 as the impacts are currently being definitized for all four sites. All cost and schedule data in this data sheet is subject to change once those impacts are definitized.

The Energy Security and Infrastructure Modernization (ESIM) Fund was established as the funding source for the SPR Modernization Program. The ESIM fund contains offsetting collections from the sale of SPR crude up to the authorized annual revenue ceiling. These sales are limited to the period of fiscal years 2017 through 2020. However, the final sale in FY 2020 did not occur because of a lack of demand related to the COVID-19 virus. Section 14002 of the CARES Act (P.L. 116-136) provided the Department flexibility to conduct the final sale in FY 2020, FY 2021, or FY 2022. The final sale was ultimately conducted in FY 2021. Oil sales proceeds were as follows: 2017: \$323,195,827; 2018: \$347,828,624; 2019: \$299,999,961; and 2021: \$449,999,980, for a total of \$1,421,024,392.

Significant Changes

LE2 Project:

This Construction Project Data Sheet (CPDS) is an update from Fiscal Year 2022 and does not include a new start for the budget year. This year's CPDS is the first time individual sub project information has been broken out. Design is substantially complete, and three subprojects (Bryan Mound, Bayou Choctaw, and Big Hill) received CD-2 Approve Project Baseline and CD-3 Approve Start of Construction on June 23, 2021. West Hackberry is expected to receive CD-2 Approve Project Baseline and CD-3 Approve Start of Construction during FY 2022.

The most recent approved Critical Decision for LE2 is CD-2/3 for the Bryan Mound, Bayou Choctaw, and Big Hill sites on June 23, 2021. The Total Project Cost (TPC) baselined for each site with an 85% confidence level was as follows:

- 1) Bryan Mound (18-E-001-01-02): \$315M with an approved CD-4 date of May 2025.
- 2) Big Hill (18-E-001-01-01): \$457M, with an approved CD-4 date of February 2025.
- 3) Bayou Choctaw (18-E-001-01-03): \$355M, with an approved CD-4 date of February 2025.
- 4) Multiple CD-3X's, acquisition of long lead equipment and site preparatory work, have been approved between FY 2017 and FY 2021.

The most recent Critical Decision for West Hackberry is CD-1 on December 22, 2016 with CD-2 Approve Baseline and CD-3 Approve Start of Construction schedule for 3rd quarter FY 2022.

A Level 2 Federal Project Director (FPD) has been assigned to this project and has approved this Construction Project Data Sheet (CPDS). Federal Project Directors have also been assigned for each site (sub-project) and are working toward required Level 3 certification.

MTE Project:

The Marine Terminal Distribution Capability Enhancements project scope did not receive Congressional funding authority in FY 2018. On May 21, 2018, the Under Secretary of Energy signed a memorandum approving the cancelation of the Strategic Petroleum Reserve Marine Terminal Distribution Capability Enhancement project.

Life Extension Phase II:

Critical Milestone History: Overall Life Extension II

	CD-0	Conceptual Design Complete	CD-1	CD-2	Final Design Complete	CD-3	CD-4
FY 2018	10/30/15	09/01/16	12/22/16	3 rd Qtr. 2019	3 rd Qtr. 2019	3 rd Qtr. 2019	4 th Qtr. 2024
FY 2019	10/30/15	09/01/16	12/22/16	3 rd Qtr. 2019	3 rd Qtr. 2019	3 rd Qtr. 2019	4 th Qtr. 2024
FY 2020	10/30/15	09/01/16	12/22/16	4 th Qtr. 2020	4 th Qtr. 2020	4 th Qtr. 2020	4 th Qtr. 2024
FY 2021	10/30/15	09/01/16	12/22/16	2 nd Qtr. 2021	2 nd Qtr. 2021	2 nd Qtr. 2021	4 th Qtr. 2024
FY 2022	10/30/15	09/01/16	12/22/16	3 rd Qtr. 2021	2 nd Qtr. 2021	3 rd Qtr. 2021	4 th Qtr. 2024
FY 2023*	10/30/15	09/01/16	12/22/16	3 rd Qtr. 2022	3 rd Qtr. 2022**	3 rd Qtr. 2022	1 st Qtr. 2026***

Mission Need for a construction project with a conceptual scope and cost range

Conceptual Design Complete – Actual date the conceptual design was completed (if applicable)

CD-1 – Approve Alternative Selection and Cost Range

CD-2 – Approve Performance Baseline

Final Design Complete – Estimated/Actual date the project design will be/was complete(d)

CD-3 – Approve Start of Construction

Deactivation & Decommissioning Complete –Completion of D&D work

CD-4 – Approve Start of Operations or Project Completion

PB – Indicates the Performance Baseline

*** Project has CD-2 and CD-3 approval for Bryan Mound, Bayou Choctaw, and Big Hill. West Hackberry anticipated CD-2 and CD-3 approvals within FY2022.**

****Some re-design to occur at West Hackberry resulting from April 2022 DOE directed descopes**

***** West Hackberry estimated CD-4 completion 1st Qtr. FY 2026**

Milestone History: Bryan Mound

	CD-0	Conceptual Design Complete	CD-1	CD-2	Final Design Complete	CD-3	CD-4
FY 2018	10/30/15	09/01/16	12/22/16	3 rd Qtr. 2019	3 rd Qtr. 2019	3 rd Qtr. 2019	4 th Qtr. 2024
FY 2019	10/30/15	09/01/16	12/22/16	3 rd Qtr. 2019	3 rd Qtr. 2019	3 rd Qtr. 2019	4 th Qtr. 2024
FY 2020	10/30/15	09/01/16	12/22/16	4 th Qtr. 2020	4 th Qtr. 2020	4 th Qtr. 2020	4 th Qtr. 2024
FY 2021	10/30/15	09/01/16	12/22/16	2 nd Qtr. 2021	2 nd Qtr. 2021	2 nd Qtr. 2021	4 th Qtr. 2024
FY 2022	10/30/15	09/01/16	12/22/16	3 rd Qtr. 2021	2 nd Qtr. 2021	3 rd Qtr. 2021	4 th Qtr. 2024
FY 2023	10/30/15	09/01/16	12/22/16	06/23/21	4/12/21	6/23/21	3 rd Qtr. 2025

Critical Milestone History: West Hackberry

	CD-0	Conceptual Design Complete	CD-1	CD-2	Final Design Complete	CD-3	CD-4
FY 2018	10/30/15	09/01/16	12/22/16	3 rd Qtr. 2019	3 rd Qtr. 2019	3 rd Qtr. 2019	4 th Qtr. 2024
FY 2019	10/30/15	09/01/16	12/22/16	3 rd Qtr. 2019	3 rd Qtr. 2019	3 rd Qtr. 2019	4 th Qtr. 2024
FY 2020	10/30/15	09/01/16	12/22/16	4 th Qtr. 2020	4 th Qtr. 2020	4 th Qtr. 2020	4 th Qtr. 2024
FY 2021	10/30/15	09/01/16	12/22/16	2 nd Qtr. 2021	2 nd Qtr. 2021	2 nd Qtr. 2021	4 th Qtr. 2024
FY 2022	10/30/15	09/01/16	12/22/16	3 rd Qtr. 2021	2 nd Qtr. 2021	3 rd Qtr. 2021	4 th Qtr. 2024
FY 2023	10/30/15	09/01/16	12/22/16	3 rd Qtr. 2022	3 rd Qtr. 2022	3 rd Qtr. 2022	1 st Qtr. 2026

Critical Milestone History: Bayou Choctaw

	CD-0	Conceptual Design Complete	CD-1	CD-2	Final Design Complete	CD-3	CD-4
FY 2018	10/30/15	09/01/16	12/22/16	3 rd Qtr. 2019	3 rd Qtr. 2019	3 rd Qtr. 2019	4 th Qtr. 2024
FY 2019	10/30/15	09/01/16	12/22/16	3 rd Qtr. 2019	3 rd Qtr. 2019	3 rd Qtr. 2019	4 th Qtr. 2024
FY 2020	10/30/15	09/01/16	12/22/16	4 th Qtr. 2020	4 th Qtr. 2020	4 th Qtr. 2020	4 th Qtr. 2024
FY 2021	10/30/15	09/01/16	12/22/16	2 nd Qtr. 2021	2 nd Qtr. 2021	2 nd Qtr. 2021	4 th Qtr. 2024
FY 2022	10/30/15	09/01/16	12/22/16	3 rd Qtr. 2021	2 nd Qtr. 2021	3 rd Qtr. 2021	4 th Qtr. 2024
FY 2023	10/30/15	09/01/16	12/22/16	6/23/21	5/21/21	6/23/21	2 nd Qtr. 2025

Critical Milestone History: Big Hill

	CD-0	Conceptual Design Complete	CD-1	CD-2	Final Design Complete	CD-3	CD-4
FY 2018	10/30/15	09/01/16	12/22/16	3 rd Qtr. 2019	3 rd Qtr. 2019	3 rd Qtr. 2019	4 th Qtr. 2024
FY 2019	10/30/15	09/01/16	12/22/16	3 rd Qtr. 2019	3 rd Qtr. 2019	3 rd Qtr. 2019	4 th Qtr. 2024
FY 2020	10/30/15	09/01/16	12/22/16	4 th Qtr. 2020	4 th Qtr. 2020	4 th Qtr. 2020	4 th Qtr. 2024
FY 2021	10/30/15	09/01/16	12/22/16	2 nd Qtr. 2021	2 nd Qtr. 2021	2 nd Qtr. 2021	4 th Qtr. 2024
FY 2022	10/30/15	09/01/16	12/22/16	3 rd Qtr. 2021	2 nd Qtr. 2021	3 rd Qtr. 2021	4 th Qtr. 2024
FY 2023	10/30/15	09/01/16	12/22/16	6/23/21	5/12/21	6/23/21	2 nd Qtr. 2025

Sub-projects: Bryan Mound and Big Hill

Subproject	Fiscal Year	Performance Baseline Validation	CD-3A	CD-3B	CD-3C	CD-3D
BM,BH	FY 2017		07/14/17			
BM,BH	FY 2018					
BM, BH	FY 2019			11/20/18		
BM, BH	FY 2020				10/25/2019	
BM, BH	FY 2021	6/23/2021				01/2021
BM, BH	FY 2022					
BM, BH	FY 2023					

CD-3A – Approve Long-Lead Procurements, Original Scope

CD-3B – Approve Long-Lead Procurements, Revised Scope

CD-3C – Approve Long-Lead Procurements, Revised Scope

CD-3D – Approve Long-Lead Procurements, Revised Scope

Sub-project: Bayou Choctaw

Subproject	Fiscal Year	Performance Baseline Validation	CD-3A	CD-3B	CD-3C	CD-3D
BC	FY 2019		11/20/18			
BC	FY 2020			10/25/2019		
BC	FY 2021	6/23/2021			01/2021	
BC	FY 2022					
BC	FY 2023					

Sub-project: West Hackberry

Subproject	Fiscal Year	Performance Baseline Validation	CD-3A	CD-3B	CD-3C	CD-3D
WH	FY 2017		07/14/17			
WH	FY 2018					
WH	FY 2019			11/20/18		
WH	FY 2020				10/25/2019	
WH	FY 2021					01/2021
WH	FY 2022	3rd Qtr. 2022				
WH	FY 2023					

Project Cost History

	TEC, Design (\$000)	TEC, Construction (\$000)	TEC, Total (\$000)	OPC Except D&D (\$000)	OPC, D&D (\$000)	OPC, Total (\$000)	TPC (\$000)
FY 2018	\$100,628	\$1,299,372	\$1,400,000	\$6,711	\$0	\$6,711	\$1,406,711
FY 2019	\$199,749*	\$800,251	\$1,000,000**	\$5,250	\$0	\$5,250	\$1,005,250
FY 2020	\$276,383	\$1,163,617***	\$1,440,000***	\$5,250	\$0	\$5,250	\$1,445,250***
FY 2021	\$392,886	\$1,047,114	\$1,440,000	\$5,250	\$0	\$5,250	\$1,445,250
FY 2022	\$392,886	\$1,022,888	\$1,415,774	\$5,250	\$0	\$5,250	\$1,421,024
FY 2023	\$354,657	\$1,061,117	\$1,415,774	\$5,250	\$0	\$5,250	\$1,421,024

The costs are only estimates as of July 2021 and consistent with the high end of the cost ranges. No construction funds, except for approved long lead procurement, will be used until the project performance baseline for each sub-project has been validated and CD-3 has been approved. CD-2/3 was approved in June 2021 for the Bayou Choctaw, Big Hill, and Bryan Mound sites. CD-2/3 for the West Hackberry site is expected to be approved in the third quarter of FY 2022.

*The increase in design cost is due to: 1) competing the design contract instead of using a reach-back contract to the M&O contractor partner; 2) adding fee to competed contract; 3) adding escalation to schedule delay caused by competing design contract; and 4) adding engineering cost associated with additional scope (deleted scope was represented completely in construction cost).

** The maximum range project cost of \$1.42B was approved at CD-1.

***The Project Scope was expanded to include drilling 17 new wells at two sites. The costs for FY 2020 entry have been revised to reflect the increase in scope. This scope has been subsequently removed to stay within the \$1.42 B funding limit.

Note: The table above is a summation of the sub-projects. The tables below are broken out by sub-project starting for the 2023 submittal as previous data sheets were submitted for total project only.

Sub-Project Cost History: Bryan Mound

	TEC, Design (\$000)	TEC, Construction (\$000)	TEC, Total (\$000)	OPC Except D&D (\$000)	OPC, D&D (\$000)	OPC, Total (\$000)	TPC (\$000)
FY 2023*	\$69,661	\$243,670	\$313,331	\$1,313	\$0	\$1,313	\$314,644

*Current submission is first year reporting data by sub-project

Sub-Project Cost History: West Hackberry

	TEC, Design (\$000)	TEC, Construction (\$000)	TEC, Total (\$000)	OPC Except D&D (\$000)	OPC, D&D (\$000)	OPC, Total (\$000)	TPC (\$000)
FY 2023*	\$97,041	\$196,099	\$293,140	\$1,313	\$0	\$1,313	\$294,453

*Current submission is first year reporting data by sub-project

Sub-Project Cost History: Bayou Choctaw

	TEC, Design (\$000)	TEC, Construction (\$000)	TEC, Total (\$000)	OPC Except D&D (\$000)	OPC, D&D (\$000)	OPC, Total (\$000)	TPC (\$000)
FY 2023*	\$94,338	\$259,134	\$353,472	\$1,313	\$0	\$1,313	\$354,785

*Current submission is first year reporting data by sub-project

Sub-Project Cost History: Big Hill

	TEC, Design (\$000)	TEC, Construction (\$000)	TEC, Total (\$000)	OPC Except D&D (\$000)	OPC, D&D (\$000)	OPC, Total (\$000)	TPC (\$000)
FY 2023*	\$95,350	\$360,480	\$455,830	\$1,313	\$0	\$1,313	\$457,143

*Current submission is first year reporting data by sub-project

2. Project Scope and Justification**Scope**

The Strategic Petroleum Reserve-Life Extension 2 (SPR-LE2) project involves work at all four SPR storage sites: Bryan Mound, Big Hill, West Hackberry, and Bayou Choctaw. The SPR-LE2 project will be managed as four sub-projects based on site location for baseline development, field execution, and project completion. Completion of the SPR-LE2 project will extend SPR key equipment and infrastructure capabilities for an additional 15-25 years and assure the required drawdown of 4.4 million barrels per day of hydraulic capability is maintained. Actual drawdown rate is highly dependent on cavern/site inventory level. The scope at each of the four SPR storage facilities includes modernization of aging SPR infrastructure through systems upgrades and associated equipment replacement including repair or replacement of crude oil transfer systems, raw water systems, brine disposal systems, power distribution and lighting systems, and physical security systems. It also includes building and installation of a new portable degasification plant at the Bayou Choctaw site.

Justification

In August 2016, the Department of Energy published a Long-Term Strategic Review (LTSR) of SPR capabilities and infrastructure. The LTSR compared current operational capability to Level 1 Technical and Performance Criteria and identified gaps within the storage site infrastructure and distribution system necessary to provide the design delivery rate

of 4.4 million barrels per day if capacity is completely filled, now and for the next 25 years. The results indicated that a significant investment in infrastructure and process equipment is critical to ensure the SPR can maintain readiness, meet mission requirements, and operate in an environmentally responsible manner. The SPR-LE2 Project addresses these requirements within the four (4) subprojects. Current surface assets and systems are past or near their original design life of 25 years. Revitalization of many, but not all, of those assets and systems last occurred from 1995 to 2000 under the first LEP. As these assets continue to age, modernization will be required – either through additional maintenance and/or repair, or outright replacement.

The project is being conducted in accordance with the project management requirements in DOE O 413.3B, *Program and Project Management for the Acquisition of Capital Assets*.

Preliminary Key Performance Parameters (KPPs)

The Threshold KPPs represent the minimum acceptable performance that the project must achieve. Achievement of the Threshold KPPs will be a prerequisite for approval of CD-4, Project Completion. The Objective KPPs represent the desired project performance for all four (4) subprojects. The preliminary KPPs will be finalized when the project is baselined at CD-2.

Preliminary Performance Measure - SPR	Threshold	Objective
Raw Water Withdrawal Rate	4.5 MMBD*	4.5 MMBD*
Peak Sustained Drawdown Rate	4.4 MMBD*	4.4 MMBD*
Site Fill Rate	605 MBD**	605 MBD**

*At full capacity. MMBD is Million Barrels per day.

**At full capacity. MBD is Thousand Barrels per day.

Preliminary Performance Measure – Bryan Mound	Threshold	Objective
Raw Water Withdrawal Rate	1545MBD	1545MBD
Peak Sustained Drawdown Rate	1500MBD	1500MBD
Site Fill Rate	225MBD	225MBD

Preliminary Performance Measure – West Hackberry	Threshold	Objective
Raw Water Withdrawal Rate	1339MBD	1339MBD
Peak Sustained Drawdown Rate	1300MBD	1300MBD
Site Fill Rate	225MBD	225MBD

Preliminary Performance Measure – Bayou Choctaw	Threshold	Objective
Raw Water Withdrawal Rate	530MBD	530MBD
Peak Sustained Drawdown Rate	515MBD	515MBD
Site Fill Rate	110MBD	110MBD

Preliminary Performance Measure – Big	Threshold	Objective
Raw Water Withdrawal Rate	1133MBD	1133MBD
Peak Sustained Drawdown Rate	1100MBD	1100MBD
Site Fill Rate	225MBD	225MBD

3. Project Cost and Schedule

Financial Schedule (LE2 Project Summary)

	(\$K)		
	Appropriations (Budget Authority)	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2015	\$0	\$0	\$0
FY 2016	\$0	\$0	\$0
FY 2017	\$137,215	\$137,215	\$4,159
FY 2018	\$116,377	\$116,377	\$59,036
FY 2019	\$68,480	\$68,480	\$74,893
FY 2020	\$7,760	\$7,760	\$68,487
FY 2021	\$24,825	\$24,825	\$44,039
FY 2022	\$0	\$0	\$47,028
FY 2023	\$0	\$0	\$34,916
FY 2024	\$0	\$0	\$20,395
FY 2025	\$0	\$0	\$1,704
Total, Design a	\$354,657	\$354,657	\$354,657
Construction			
FY 2015	\$0	\$0	\$0
FY 2016	\$0	\$0	\$0
FY 2017	\$27,400	\$27,400	\$0
FY 2018 b	\$338,284	\$338,284	\$483
FY 2019	\$262,459	\$262,459	\$729
FY 2020	\$0	\$0	\$26,076
FY 2021	\$432,974	\$432,974	\$61,857
FY 2022	\$0	\$0	\$249,357
FY 2023	\$0	\$0	\$500,907
FY 2024	\$0	\$0	\$212,269
FY 2025	\$0	\$0	\$9,439
Total, Construction	\$1,061,117	\$1,061,117	\$1,061,117

(\$K)

	Appropriations (Budget Authority)	Obligations	Costs
TEC			
FY 2015	\$0	\$0	\$0
FY 2016	\$0	\$0	\$0
FY 2017	\$164,615	\$164,615	\$4,159
FY 2018	\$454,661	\$454,661	\$59,519
FY 2019	\$330,939	\$330,939	\$75,622
FY 2020	\$7,760	\$7,760	\$94,563
FY 2021	\$457,799	\$457,799	\$105,896
FY 2022	\$0	\$0	\$296,385
FY 2023	\$0	\$0	\$535,823
FY 2024	\$0	\$0	\$232,663
FY 2025	\$0	\$0	\$11,143
Total, TEC	\$1,415,774	\$1,415,774	\$1,415,774
Other Project Cost (OPC)			
FY 2015 c, d	\$88	\$88	\$88
FY 2016 c, d	\$4,190	\$4,190	\$4,190
FY 2017 d	\$972	\$972	\$699
FY 2018 d	\$0	\$0	\$273
FY 2019	\$0	\$0	\$0
FY 2020	\$0	\$0	\$0
FY 2021	\$0	\$0	\$0
FY 2022	\$0	\$0	\$0
FY 2023	\$0	\$0	\$0
FY 2024	\$0	\$0	\$0
FY 2025	\$0	\$0	\$0
Total, OPC	\$5,250	\$5,250	\$5,250

(\$K)

Appropriations (Budget Authority)	Obligations	Costs
-----------------------------------------	-------------	-------

Total Project Cost
(TPC)

FY 2015	\$88	\$88	\$88
FY 2016	\$4,190	\$4,190	\$4,190
FY 2017 e	\$340,972	\$165,587	\$4,858
FY 2018 f	\$350,000	\$454,661	\$59,792
FY 2019 g, j	\$300,000	\$330,939	\$75,622
FY 2020 h	\$0	\$7,760	\$94,563
FY 2021 i	\$425,774	\$457,799	\$105,896
FY 2022	\$0	\$0	\$296,385
FY 2023	\$0	\$0	\$535,823
FY 2024	\$0	\$0	\$232,663
FY 2025	\$0	\$0	\$11,143
Total, TPC d,k	\$1,421,024	\$1,421,024	\$1,421,024

a: DOE and DOE support labor; M&O project support.

b: Bayou Choctaw CD-3A Degas Plant.

c: Includes costs for Office of Project Management.

d: Funding requirements are included in the Facilities Appropriation 089X0218.

e: FY 2017 Omnibus authorized oil sales target of \$340,000,000 (Appropriation). Actual proceeds were \$323,195,827.

f: FY 2018 Omnibus authorized oil sales target of \$350,000,000 (Appropriation). Actual proceeds were \$347,828,624.

g: FY 2019 Omnibus authorized oil sales target of \$300,000,000 (Appropriation). Actual proceeds were \$299,999,961.

h: FY 2020 Omnibus authorized oil sales target of \$450,000,000 (Appropriation). Sales postponed and authorized completion no later than FY 2022 as part of the CARES Act (P.L. 116-136).

i: FY 2021 Omnibus authorized oil sales target of \$450,000,000 (Appropriation). Actual proceeds were \$499,999,980.

j: Includes costs for Office of Project Management EIR which will be funded from the DOE Contingency within LE 2 funds.

k: The Total Project Cost (TPC) of \$1.4B was approved at CD-1, and final scope will be established at CD-2. The TPC for obligations and costs is the total of funds from Facilities Appropriation and funding received through the sale of SPR crude oil.

Note: Project is being funded through the sale of SPR crude oil and not through the normal congressional appropriations process.

Financial Schedule – Bryan Mound

(dollars in thousands)

Obligations	Costs
-------------	-------

Total Estimated Cost (TEC)

Design

FY 2015	\$0	\$0
FY 2016	\$0	\$0
FY 2017	\$14,956	\$874
FY 2018	\$22,289	\$11,676
FY 2019	\$10,480	\$11,699
FY 2020	\$1,940	\$12,747
FY 2021	\$19,996	\$9,125
FY 2022	\$0	\$9,977
FY 2023	\$0	\$7,852
FY 2024	\$0	\$5,711
FY 2025	\$0	\$0

Total, Design	\$69,661	\$69,661
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Construction

FY 2015	\$0	\$0
FY 2016	\$0	\$0
FY 2017	\$3,400	\$0
FY 2018	\$48,884	\$353
FY 2019	\$50,000	\$0
FY 2020	\$0	\$2,289
FY 2021	\$141,386	\$13,563
FY 2022	\$0	\$74,844
FY 2023	\$0	\$112,557
FY 2024	\$0	\$40,064
FY 2025	\$0	\$0

Total, Construction	\$243,670	\$243,670
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Financial Schedule – Bryan Mound, continued

	(dollars in thousands)	
	Obligations	Costs
TEC		
FY 2015	\$0	\$0
FY 2016	\$0	\$0
FY 2017	\$18,356	\$874
FY 2018	\$71,173	\$12,029
FY 2019	\$60,480	\$11,699
FY 2020	\$1,940	\$15,036
FY 2021	\$161,382	\$22,688
FY 2022	\$0	\$84,821
FY 2023	\$0	\$120,409
FY 2024	\$0	\$45,775
FY 2025	\$0	\$0
Total, TEC	\$313,331	\$313,331
Other Project Cost (OPC)		
FY 2015	\$22	\$22
FY 2016	\$1,048	\$1,048
FY 2017	\$243	\$175
FY 2018	\$0	\$68
FY 2019	\$0	\$0
FY 2020	\$0	\$0
FY 2021	\$0	\$0
FY 2022	\$0	\$0
FY 2023	\$0	\$0
FY 2024	\$0	\$0
FY 2025	\$0	\$0
Total, OPC	\$1,313	\$1,313
Total Project Cost (TPC)		
FY 2015	\$22	\$22
FY 2016	\$1,048	\$1,048
FY 2017	\$18,599	\$1,049
FY 2018	\$71,173	\$12,097
FY 2019	\$60,480	\$11,699
FY 2020	\$1,940	\$15,036
FY 2021	\$161,382	\$22,688
FY 2022	\$0	\$84,821
FY 2023	\$0	\$120,409
FY 2024	\$0	\$45,775
FY 2025	\$0	\$0
Total, TPC	\$314,644	\$314,644

Financial Schedule – West Hackberry

(dollars in thousands)

	Obligations	Costs
Total Estimated Cost (TEC)		
Design		
FY 2015	\$0	\$0
FY 2016	\$0	\$0
FY 2017	\$24,801	\$1,072
FY 2018	\$27,043	\$14,861
FY 2019	\$23,000	\$21,382
FY 2020	\$1,940	\$16,889
FY 2021	\$18,524	\$12,622
FY 2022	\$0	\$10,367
FY 2023	\$0	\$9,379
FY 2024	\$0	\$7,032
FY 2025	\$0	\$1,704
Total, Design	\$95,308	\$95,308
Construction		
FY 2015	\$0	\$0
FY 2016	\$0	\$0
FY 2017	\$3,000	\$0
FY 2018	\$111,269	\$130
FY 2019	\$99,819	\$710
FY 2020	\$0	\$1,426
FY 2021	(\$16,256)	\$12,394
FY 2022	\$0	\$38,101
FY 2023	\$0	\$96,663
FY 2024	\$0	\$38,969
FY 2025	\$0	\$9,439
Total, Construction	\$197,832	\$197,832

Financial Schedule – West Hackberry, continued

	(dollars in thousands)	
	Obligations	Costs
TEC		
FY 2015	\$0	\$0
FY 2016	\$0	\$0
FY 2017	\$27,801	\$1,072
FY 2018	\$138,312	\$14,991
FY 2019	\$122,819	\$22,092
FY 2020	\$1,940	\$18,315
FY 2021	\$2,268	\$25,016
FY 2022	\$0	\$48,468
FY 2023	\$0	\$106,042
FY 2024	\$0	\$46,001
FY 2025	\$0	\$11,143
Total, TEC	\$293,140	\$293,140
Other Project Cost (OPC)		
FY 2015	\$22	\$22
FY 2016	\$1,048	\$1,048
FY 2017	\$243	\$175
FY 2018	\$0	\$68
FY 2019	\$0	\$0
FY 2020	\$0	\$0
FY 2021	\$0	\$0
FY 2022	\$0	\$0
FY 2023	\$0	\$0
FY 2024	\$0	\$0
FY 2025	\$0	\$0
Total, OPC	\$1,313	\$1,313
Total Project Cost (TPC)		
FY 2015	\$22	\$22
FY 2016	\$1,048	\$1,048
FY 2017	\$28,044	\$1,247
FY 2018	\$138,312	\$15,059
FY 2019	\$122,819	\$22,092
FY 2020	\$1,940	\$18,315
FY 2021	\$2,268	\$25,016
FY 2022	\$0	\$48,468
FY 2023	\$0	\$106,042
FY 2024	\$0	\$46,001
FY 2025	\$0	\$11,143
Total, TPC	\$294,453	\$294,453

Financial Schedule – Bayou Choctaw

(dollars in thousands)

Obligations	Costs
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Total Estimated Cost (TEC)

Design

FY 2015	\$0	\$0
FY 2016	\$0	\$0
FY 2017	\$33,074	\$1,003
FY 2018	\$43,111	\$18,600
FY 2019	\$19,000	\$21,981
FY 2020	\$1,940	\$20,941
FY 2021	(\$2,787)	\$9,535
FY 2022	\$0	\$10,595
FY 2023	\$0	\$8,772
FY 2024	\$0	\$2,911
FY 2025	\$0	\$0

Total, Design	\$94,338	\$94,338
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Construction

FY 2015	\$0	\$0
FY 2016	\$0	\$0
FY 2017	\$0	\$0
FY 2018	\$127,713	\$0
FY 2019	\$24,820	\$19
FY 2020	\$0	\$5,146
FY 2021	\$106,601	\$20,778
FY 2022	\$0	\$67,800
FY 2023	\$0	\$130,303
FY 2024	\$0	\$35,088
FY 2025	\$0	\$0

Total, Construction	\$259,134	\$259,134
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Financial Schedule – Bayou Choctaw, continued

	(dollars in thousands)	
	Obligations	Costs
TEC		
FY 2015	\$0	\$0
FY 2016	\$0	\$0
FY 2017	\$33,074	\$1,003
FY 2018	\$170,824	\$18,600
FY 2019	\$43,820	\$22,000
FY 2020	\$1,940	\$26,087
FY 2021	\$103,814	\$30,313
FY 2022	\$0	\$78,395
FY 2023	\$0	\$139,075
FY 2024	\$0	\$37,999
FY 2025	\$0	\$0
Total, TEC	\$353,472	\$353,472
Other Project Cost (OPC)		
FY 2015	\$22	\$22
FY 2016	\$1,048	\$1,048
FY 2017	\$243	\$175
FY 2018	\$0	\$68
FY 2019	\$0	\$0
FY 2020	\$0	\$0
FY 2021	\$0	\$0
FY 2022	\$0	\$0
FY 2023	\$0	\$0
FY 2024	\$0	\$0
FY 2025	\$0	\$0
Total, OPC	\$1,313	\$1,313
Total Project Cost (TPC)		
FY 2015	\$22	\$22
FY 2016	\$1,048	\$1,048
FY 2017	\$33,317	\$1,178
FY 2018	\$170,824	\$18,668
FY 2019	\$43,820	\$22,000
FY 2020	\$1,940	\$26,087
FY 2021	\$103,814	\$30,313
FY 2022	\$0	\$78,395
FY 2023	\$0	\$139,075
FY 2024	\$0	\$37,999
FY 2025	\$0	\$0
Total, TPC	\$354,785	\$354,785

Financial Schedule – Big Hill

(dollars in thousands)

Obligations	Costs
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Total Estimated Cost (TEC)

Design

FY 2015	\$0	\$0
FY 2016	\$0	\$0
FY 2017	\$64,384	\$1,210
FY 2018	\$23,934	\$13,899
FY 2019	\$16,000	\$19,831
FY 2020	\$1,940	\$17,910
FY 2021	(\$10,908)	\$12,757
FY 2022	\$0	\$16,089
FY 2023	\$0	\$8,913
FY 2024	\$0	\$4,741
FY 2025	\$0	\$0
Total, Design	\$95,350	\$95,350

Construction

FY 2015	\$0	\$0
FY 2016	\$0	\$0
FY 2017	\$21,000	\$0
FY 2018	\$50,418	\$0
FY 2019	\$87,820	\$0
FY 2020	\$0	\$17,215
FY 2021	\$201,242	\$15,122
FY 2022	\$0	\$68,612
FY 2023	\$0	\$161,383
FY 2024	\$0	\$98,148
FY 2025	\$0	\$0
Total, Construction	\$360,480	\$360,480

Financial Schedule – Big Hill, continued

	(dollars in thousands)	
	Obligations	Costs
TEC		
FY 2015	\$0	\$0
FY 2016	\$0	\$0
FY 2017	\$85,384	\$1,210
FY 2018	\$74,352	\$13,899
FY 2019	\$103,820	\$19,831
FY 2020	\$1,940	\$35,125
FY 2021	\$190,334	\$27,879
FY 2022	\$0	\$84,701
FY 2023	\$0	\$170,296
FY 2024	\$0	\$102,889
FY 2025	\$0	\$0
Total, TEC	\$455,830	\$455,830
Other Project Cost (OPC)		
FY 2015	\$22	\$22
FY 2016	\$1,048	\$1,048
FY 2017	\$243	\$175
FY 2018	\$0	\$68
FY 2019	\$0	\$0
FY 2020	\$0	\$0
FY 2021	\$0	\$0
FY 2022	\$0	\$0
FY 2023	\$0	\$0
FY 2024	\$0	\$0
FY 2025	\$0	\$0
Total, OPC	\$1,313	\$1,313
Total Project Cost (TPC)		
FY 2015	\$22	\$22
FY 2016	\$1,048	\$1,048
FY 2017	\$85,627	\$1,385
FY 2018	\$74,352	\$13,967
FY 2019	\$103,820	\$19,831
FY 2020	\$1,940	\$35,125
FY 2021	\$190,334	\$27,879
FY 2022	\$0	\$84,701
FY 2023	\$0	\$170,296
FY 2024	\$0	\$102,889
FY 2025	\$0	\$0
Total, TPC	\$457,143	\$457,143

Details of Project Cost Estimate (LE2 Project Summary)

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED)			
Design	\$354,657	\$392,886	N/A
Contingency	\$0	\$13,137	N/A
Total, PED	\$354,657	\$406,023	N/A
Land Acquisition	\$1,733	\$0	N/A
Construction			
Site Facilities Construction	\$825,905	\$392,730	N/A
Off-Site Facilities	\$9,195	\$29,735	N/A
Drilling/Wellhead/Casings	\$23,877	\$261,341	N/A
Pipeline Construction	\$77,176	\$70,776	N/A
Construction Management	\$41,369	\$84,923	N/A
Project Support	\$35,161	\$109,366	N/A
Contingency	\$46,701	\$85,106	N/A
Total, Construction	\$1,059,384	\$1,033,977	N/A
Total, TEC	\$1,415,774	\$1,440,000	N/A
Contingency, TEC	\$46,701	\$98,243	N/A
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Design	\$1,366	\$1,366	N/A
Other OPC Costs	\$3,884	\$3,884	N/A
Start-up	\$0	\$0	N/A
Contingency	\$0	\$0	N/A
Total, OPC except D&D	\$5,250	\$5,250	N/A
D&D			
D&D	\$0	\$0	N/A
Contingency	\$0	\$0	N/A
Total, D&D	\$0	\$0	N/A
Total, OPC	\$5,250	\$5,250	N/A
Contingency, OPC	\$0	\$0	N/A
Total, TPC	\$1,421,024	\$1,445,250	N/A
Total, Contingency	\$46,701	\$98,243	N/A

Note: Project is being funded through the sale of SPR crude oil and not through the normal congressional appropriations process.

The total project is not yet baselined.

Details of Project Cost Estimate – Bryan Mound

(dollars in thousands)

	Current Total Estimate - Bryan Mound	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED)			
Design	\$69,661	N/A	\$69,661
Contingency	\$0	N/A	\$0
Total, PED	\$69,661	N/A	\$69,661
Land Acquisition	\$0	N/A	0
Construction			
Site Facilities Construction	\$200,735	N/A	\$200,735
Off-Site Facilities	\$0	N/A	\$0
Drilling/Wellhead/Casings	\$7,640	N/A	\$7,640
Pipeline Construction	\$0	N/A	\$0
Construction Management	\$10,277	N/A	\$10,277
Project Support	\$9,618	N/A	\$9,618
Contingency	\$15,400	N/A	\$15,400
Total, Construction	\$243,670	N/A	\$243,670
Total, TEC	\$313,331	N/A	\$313,331
Contingency, TEC	\$15,400	N/A	\$15,400
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Design	\$342	N/A	\$342
Other OPC Costs	\$971	N/A	\$971
Start-up	\$0	N/A	\$0
Contingency	\$0	N/A	\$0
Total, OPC except D&D	\$1,313	N/A	\$1,313
D&D			
D&D		N/A	N/A
Contingency		N/A	N/A
Total, D&D	\$0	N/A	\$0
Total, OPC	\$1,313	N/A	\$1,313
Contingency, OPC	\$0	N/A	\$0
Total, TPC	\$314,644	N/A	\$314,644
Total, Contingency	\$15,400	N/A	\$15,400

Note: This is the first submission with data broken out by sub-project; therefore, previous estimate will not be reflected until subsequent submittal.

Details of Project Cost Estimate – West Hackberry

(dollars in thousands)

	Current Total Estimate - West Hackberry	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED)			
Design	\$95,308	\$95,308	N/A
Contingency	\$0	\$0	N/A
Total, PED	\$95,308	\$95,308	N/A
Land Acquisition	\$1,733	\$1,733	N/A
Construction			
Site Facilities Construction	\$160,220	\$160,220	N/A
Off-Site Facilities	\$5,195	\$5,195	N/A
Drilling/Wellhead/Casings	\$11,484	\$11,484	N/A
Pipeline Construction	\$0	\$0	N/A
Construction Management	\$8,058	\$8,058	N/A
Project Support	\$7,842	\$7,842	N/A
Contingency	\$3,300	\$3,300	N/A
Total, Construction	\$196,099	\$196,099	N/A
Total, TEC	\$293,140	\$293,140	N/A
Contingency, TEC	\$3,300	\$3,300	N/A
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Design	\$342	\$342	N/A
Other OPC Costs	\$971	\$971	N/A
Start-up	\$0	\$0	N/A
Contingency	\$0	\$0	N/A
Total, OPC except D&D	\$1,313	\$1,313	N/A
D&D			
D&D		N/A	N/A
Contingency		N/A	N/A
Total, D&D	\$0	\$0	N/A
Total, OPC	\$1,313	\$1,313	N/A
Contingency, OPC	\$0	\$0	N/A
Total, TPC	\$294,453	\$294,453	N/A
Total, Contingency	\$3,300	\$3,300	N/A

Note: This is the first submission with data broken out by sub-project. West Hackberry is not yet baselined; therefore, the original validated baseline is N/A.

Details of Project Cost Estimate – Bayou Choctaw

(dollars in thousands)

	Current Total Estimate - Bayou Choctaw	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED)			
Design	\$94,338	N/A	\$94,338
Contingency	\$0	N/A	\$0
Total, PED	\$94,338	N/A	\$94,338
Land Acquisition	\$0	N/A	\$0
Construction			
Site Facilities Construction	\$220,800	N/A	\$220,800
Off-Site Facilities	\$0	N/A	\$0
Drilling/Wellhead/Casings	\$4,753	N/A	\$4,753
Pipeline Construction	\$0	N/A	\$0
Construction Management	\$10,281	N/A	\$10,281
Project Support	\$8,300	N/A	\$8,300
Contingency	\$15,000	N/A	\$15,000
Total, Construction	\$259,134	N/A	\$259,134
Total, TEC	\$353,472	N/A	\$353,472
Contingency, TEC	\$15,000	N/A	\$15,000
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Design	\$342	N/A	\$342
Other OPC Costs	\$971	N/A	\$971
Start-up	\$0	N/A	\$0
Contingency	\$0	N/A	\$0
Total, OPC except D&D	\$1,313	N/A	\$1,313
D&D			
D&D		N/A	N/A
Contingency		N/A	N/A
Total, D&D	\$0	N/A	\$0
Total, OPC	\$1,313	N/A	\$1,313
Contingency, OPC	\$0	N/A	\$0
Total, TPC	\$354,785	N/A	\$354,785
Total, Contingency	\$15,000	N/A	\$15,000

Note: This is the first submission with data broken out by sub-project; therefore, previous estimate will not be reflected until subsequent submittal.

Details of Project Cost Estimate – Big Hill

(dollars in thousands)

	Current Total Estimate - Big Hill	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED)			
Design	\$95,350	N/A	\$95,350
Contingency	\$0	N/A	\$0
Total, PED	\$95,350	N/A	\$95,350
Land Acquisition	\$0	N/A	\$0
Construction			
Site Facilities Construction	\$244,150	N/A	\$244,150
Off-Site Facilities	\$4,000	N/A	\$4,000
Drilling/Wellhead/Casings	\$0	N/A	\$0
Pipeline Construction	\$77,176	N/A	\$77,176
Construction Management	\$12,753	N/A	\$12,753
Project Support	\$9,401	N/A	\$9,401
Contingency	\$13,000	N/A	\$13,000
Total, Construction	\$360,480	N/A	\$360,480
Total, TEC	\$455,830	N/A	\$455,830
Contingency, TEC	\$13,000	N/A	\$13,000
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Design	\$342	N/A	\$342
Other OPC Costs	\$971	N/A	\$971
Start-up	\$0	N/A	\$0
Contingency	\$0	N/A	\$0
Total, OPC except D&D	\$1,313	N/A	\$1,313
D&D			
D&D		N/A	N/A
Contingency		N/A	N/A
Total, D&D	\$0	N/A	\$0
Total, OPC	\$1,313	N/A	\$1,313
Contingency, OPC	\$0	N/A	\$0
Total, TPC	\$457,143	N/A	\$457,143
Total, Contingency	\$13,000	N/A	\$13,000

Note: This is the first submission with data broken out by sub-project; therefore, previous estimate will not be reflected until subsequent submittal.

Schedule of Appropriations Requests

Section 404 of the Bipartisan Budget Act authorizes drawdown and sale of SPR crude oil over four fiscal years (FY 2017 – FY 2020) to finance SPR modernization. This CPDS reflects the high end of the cost ranges. The Total Project Cost (TPC) of \$1.4B was approved at CD-1, and final scope will be established at CD-2. Bryan Mound, Bayou Choctaw, and Big Hill achieved CD-2/3 in FY 2021 and West Hackberry is expected to achieve CD-2/3 within FY 2022.

Request	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	Total
FY 2018	TEC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	OPC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	TPC	\$ -	\$ -	\$375,400	\$350,000	\$174,600	\$100,000	\$ -	\$ -	\$ -	\$ -	\$1,000,000
FY 2019	TEC	\$ -	\$ -	\$ 340,000 *	\$ 350,000	\$ 300,000	\$ 10,000	\$ -	\$ -	\$ -	\$ -	\$1,000,000
	OPC	\$ 88	\$ 4,190	\$ 972	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$5,250
	TPC	\$ 88	\$ 4,190	\$ 340,972	\$ 350,000	\$ 300,000	\$ 10,000	\$ -	\$ -	\$ -	\$ -	\$1,005,250
FY 2020	TEC	\$ -	\$ -	\$ 340,000 *	\$ 350,000 **	\$ 300,000	\$ 450,000	\$ -	\$ -	\$ -	\$ -	\$1,440,000
	OPC	\$ 88	\$ 4,190	\$ 972	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$5,250
	TPC	\$ 88	\$ 4,190	\$ 340,972	\$ 350,000	\$ 300,000	\$ 450,000	\$ -	\$ -	\$ -	\$ -	\$1,445,250
FY 2021	TEC	\$ -	\$ -	\$ 340,000 *	\$ 350,000 **	\$300,000 ***	\$450,000 ***	\$ -	\$ -	\$ -	\$ -	\$1,440,000
	OPC	\$ 88	\$ 4,190	\$ 972	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$5,250
	TPC	\$ 88	\$ 4,190	\$ 340,972	\$ 350,000	\$ 300,000	\$ 450,000	\$ -	\$ -	\$ -	\$ -	\$1,445,250
FY 2022	TEC	\$ -	\$ -	\$ 340,000 *	\$ 350,000 **	\$300,000 ***	\$ -	\$425,774****	\$ -	\$ -	\$ -	\$1,415,774
	OPC	\$ 88	\$ 4,190	\$ 972	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$5,250
	TPC	\$ 88	\$ 4,190	\$ 340,972	\$ 350,000	\$ 300,000	\$ -	\$ 425,774	\$ -	\$ -	\$ -	\$1,421,024
FY 2023	TEC	\$ -	\$ -	\$ 340,000 *	\$ 350,000 **	\$300,000 ***	\$ -	\$425,774*****	\$ -	\$ -	\$ -	\$1,415,774
	OPC	\$ 88	\$ 4,190	\$ 972	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$5,250
	TPC	\$ 88	\$ 4,190	\$ 340,972	\$ 350,000	\$ 300,000	\$ -	\$ 425,774	\$ -	\$ -	\$ -	\$1,421,024

* FY 2017 Omnibus authorized oil sales target of \$340,000,000 (Appropriation). Actual proceeds were \$323,195,827.

** FY 2018 Omnibus authorized oil sales target of \$350,000,000 (Appropriation). Actual proceeds were \$347,828,624.

*** FY 2019 Omnibus authorized oil sales target of \$300,000,000 (Appropriation). Actual proceeds were \$299,999,961.

**** FY 2020 Omnibus authorized oil sales target of \$450,000,000 (Appropriation). Sale postponed, and authorized completion changed to no later than FY 2022 as part of the CARES Act (P.L. 116-136).

***** FY 2021 Omnibus authorized oil sales target of \$450,000,000 (Appropriation). Actual proceeds were \$499,999,980.

4. Related Operations and Maintenance Funding Requirements

Not applicable for Project Engineering and Design.

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	Establish at CD-2
Expected Useful Life (number of years)	25
Expected Future Start of D&D of this capital asset (fiscal quarter)	N/A*

(Related Funding requirements)

(dollars in thousands)

	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations		N/A		N/A
Maintenance & Repair		N/A		N/A
Total **		N/A		N/A

* The SPR is not planning on decommissioning the sites, and there is no date associated with the line item.

** Funding requirements are included in the Facilities Appropriation 089X0218.

5. D&D Information

This project does not require D&D funding.

6. Acquisition Approach

The existing Strategic Petroleum Reserve Management and Operating Contractor did originally procure the Architect-Engineer contractor. With Office of the Under Secretary for Science (S3) concurrence in FY 2019, the M&O Contractor is self-performing the remaining Architect-Engineering (A-E) design scope and will procure all Government Furnished Property and firm fixed priced construction contracts.

SPR Petroleum Account
Proposed Appropriation Language

For Department of Energy expenses necessary for the acquisition, transportation, and injection of petroleum products, and for other necessary expenses pursuant to the Energy Policy and Conservation Act of 1975, as amended (42 U.S.C. 6241, 6239 note); \$8,000,000 to remain available until expended.

Note. —A full-year 2022 appropriation for this account was not enacted at the time the budget was prepared; therefore, the budget assumes this account is operating under the Continuing Appropriations Act, 2022 (Division A of P.L. 117-43, as amended). The amounts included for 2022 reflect the annualized level provided by the continuing resolution.

Explanation of Changes

The FY 2023 Request funds activities related to the acquisition, transportation, and injection of petroleum products into the Strategic Petroleum Reserve. The increase reflects a smaller carryover due to drawdown costs associated with a larger volume in multi-year crude oil sales and sufficient funding to execute a 30-million-barrel emergency sale and for receipt of 4.3 million barrels from an exchange carried out in 2022.

Public Law Authorizations

Energy Policy and Conservation Act, Public Law 94-163, as amended.

**SPR Petroleum Account
(\$K)**

FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request
1,000	1,000	8,000

Overview

The SPR Petroleum Account funds activities related to the acquisition, transportation, and injection of petroleum products into the Strategic Petroleum Reserve; test sales of petroleum products from the Reserve; and the drawdown, sale, and delivery of petroleum products from the Reserve.

Highlights and Major Changes in the FY 2023 Budget Request

Sections 403 of the Bipartisan Budget Act of 2015 (P.L. 114-74), Section 30204 of the Bipartisan Budget Act, 2018, (P.L. 115-141) and Section 32204 of the Surface Transportation Reauthorization Act of 2015 (P.L. 114-94) direct non-emergency, multi-year oil sales.

**SPR Petroleum Account
Funding by Congressional Control
(\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
SPR Petroleum Account					
Petroleum Acquisition, Transportation and Drawdown	1,000	1,000	8,000	+7,000	+700%
Total, SPR Petroleum Account	1,000	1,000	8,000	+7,000	+700%
Federal FTEs	0	0	0	0	0

**Outyear Funding
(\$K)**

FY 2023 Request	FY 2024 Request	FY 2025 Request	FY 2026 Request	FY 2027 Request
8,000	26,816	27,195	25,299	25,885

Major Outyear Priorities and Assumptions

Future budget requests will be determined as part of the annual budget process. Outyear funding for SPR Petroleum Account Appropriation is estimated to be roughly \$105,195,000 for FY 2024 through FY 2027. SPR Petroleum Account priorities include the following:

- Starting in FY 2023 through FY 2027, SPR is Congressionally mandated to sell about 175 million barrels, or about an average of 35 million barrels of crude oil each fiscal year. The Department’s FY 2024 – 2027 outyear funding requests will require additional increase in funding to cover costs of selling increased volumes of crude oil.

SPR Petroleum Account

Overview

The SPR Petroleum Account funds activities related to the acquisition, transportation, and injection of petroleum products into the Strategic Petroleum Reserve; test sales of petroleum products from the Reserve; and the drawdown, sale, and delivery of petroleum products from the Reserve. SPR Petroleum Account activities can include: 1) the incremental costs of withdrawing oil from the storage caverns and transporting it to the sales point where purchasers take title; 2) petroleum inventory acquisitions and associated transportation costs; 3) U.S. Customs duties; and 4) terminal throughput charges and other related miscellaneous costs.

SPR Oil Acquisition/Transportation/Drawdown

As of December 31, 2021, the SPR crude oil inventory is 594 million barrels. Currently, the Department is undergoing a series of non-emergency, multi-year oil sales pursuant to the Bipartisan Budget Act (BBA) of 2015 (Public Law 114-74), and the Fixing America's Surface Transportation (FAST) Act (Public Law 114-94), the Act to provide for reconciliation pursuant to titles II and V of the concurrent resolution on the budget for fiscal year 2018. Drawdown and sales are scheduled as follows:

- From FY 2018 through FY 2025 (eight consecutive years) – sell 58 million barrels of crude oil, with 10 million barrels to be sold in FY 2023. Proceeds will be deposited into the General Fund of the Treasury (Bipartisan Budget Act, Section 403).
- From FY 2017 through FY 2020 (four consecutive years) – sell the required volumes of SPR inventory to raise up to the authorized revenue ceiling to be deposited into the Energy Security and Infrastructure Modernization Fund (Bipartisan Budget Act, Section 404). In FY 2017, 6.3 million barrels were sold; in FY 2018, 4.7 million barrels were sold, and in FY2019 4.2 million barrels were sold. Oil sales of 6.6 million barrels scheduled for FY 2020 were postponed until FY 2021 with revenues totaling \$1.4 billion. Section 14002 of the CARES Act (P.L. 116-136) provides the Department flexibility to postpone through Fiscal Year 2022 a sale of crude oil from the Strategic Petroleum Reserve that was originally authorized for FY 2020.
- From FY 2017 through FY 2019 (three consecutive years) – sell 10 million barrels of crude oil in FY 2017, 9 million barrels in FY 2018, and 6 million barrels in FY 2019, for a total of 25 million barrels. Proceeds will be deposited in the General Fund of the Treasury (21st Century Cures Act, Section 5010).
- From FY 2023 through FY 2025 (three consecutive years) – sell 16 million barrels of crude oil in FY 2023, 25 million barrels in FY 2024, and 25 million barrels in FY 2025, for a total of 66 million barrels. Proceeds will be deposited in the General Fund of the Treasury (Fixing America's Surface Transportation Act, Section 32204).
- From FY 2026 through FY 2027, sell 7 million barrels of crude oil. Proceeds shall be deposited in the General Fund of the Treasury during the fiscal year in which the sale occurs (An Act to provide for reconciliation pursuant to titles II and V of the concurrent resolution on the budget for fiscal year 2018, Section 20003).
- From FY 2020 through FY 2021, sell 10 million barrels of crude oil. Proceeds will be deposited in the General Fund of the Treasury (Consolidated Appropriations Act, 2018, Section 501).
- From FY 2022 through FY 2027, sell 100 million barrels of crude oil, with 30 million barrels to be sold in FY 2022, 35 million in FY 2026, and 35 million in FY 2027. Proceeds will be deposited in the General Fund of the Treasury (Bipartisan Budget Act of 2018, Section 30204).
- In FY 2028, sell 5 million barrels of crude oil. Proceeds will be deposited in the General Fund of the Treasury (America's Water Infrastructure Act of 2018, Section 3009).
- From FY 2028 through FY 2031 (four consecutive years) – sell up to 88 million barrels of crude oil. Proceeds will be deposited in the General Fund of the Treasury and the Secretary of the Treasury shall deposit in the SPR Petroleum Account established under section 167(a) of the Energy Policy and Conservation Act (42 U.S.C. 6247(a) \$43,500,000, to be used to carry out the sale in accordance with section 167 of the Energy Policy and Conservation Act (42 U.S.C. 6247). (Infrastructure Investment and Jobs Act, Section 90002).

This FY 2023 Budget Request includes a request for direct appropriation for continuing scheduled sales of SPR oil and to maintain readiness for potential emergency drawdown operations.

**SPR Petroleum Account
Funding (\$K)**

SPR Petroleum Account
 Petroleum Acquisition, Transportation and Drawdown
Total, SPR Petroleum Account

FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
1,000	1,000	8,000	+7,000	+700%
1,000	1,000	8,000	+7,000	+700%

SPR Petroleum Account

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
SPR Petroleum Account		
Petroleum Acquisition, Transportation and Drawdown \$1,000,000	\$8,000,000	+\$7,000,000
<i>Non-Emergency Drawdown</i> <ul style="list-style-type: none"> FY 2021 provides for the SPR Petroleum Account to pay for the costs of certain statutorily mandated crude oil sales. 	<ul style="list-style-type: none"> The FY 2023 request, along with prior year balances, will be able to support the 26 million barrels that the SPR is authorized to sell through legislation described above and receipt of 4.3 million barrels of from the Winter Exchange in 2022. 	<ul style="list-style-type: none"> The increase in funding supports legislative-directed sales in FY 2023.

**Naval Petroleum and Oil Shale Reserves
Proposed Appropriation Language**

For Department of Energy expenses necessary to carry out naval petroleum and oil shale reserve activities, 13,004,000 to remain available until expended: *Provided*, That notwithstanding any other provision of law, unobligated funds remaining from prior years shall be available for all naval petroleum and oil shale reserve activities.

Note. -A full year 2022 appropriation for this account was not enacted at the time the budget was prepared; therefore, the budget assumes this account is operating under the Continuing Appropriations Act, 2022 (Division A of P.L. 117-43, as amended). The amounts included for 2023 reflect the annualized level provided by the continuing resolution

Explanation of Changes

FY 2023 budget authority will fund continued NPR-1 environmental assessment and remediation activities.

Public Law Authorizations

- P.L. 94-258, U.S. Naval Petroleum Reserves Production Act of 1977
- P.L. 95-91, U.S. Department of Energy Organization Act of 1977
- P.L. 104-106, The National Defense Authorization Act For Fiscal Year 1996
- P.L. 105-261, The Strom Thurmond National Defense Act for Fiscal Year 1999
- P.L. 109-58, Energy Policy Act of 2005

**Naval Petroleum and Oil Shale Reserves
(\$K)**

FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY2023 Request vs FY 2021 Enacted
13,006	13,006	13,004	-2

Overview

The Naval Petroleum and Oil Shale Reserves (NPOSR) program manages five legal agreements that were executed as part of the 1998 sale of Naval Petroleum Reserve 1 (NPR-1) in Elk Hills, California. The legal agreements direct post-sale work, including environmental restoration and remediation, contract closeout, and records disposition. Legal agreements also include payment for post-employment medical and dental benefits to former NPR-1 Management & Operating (M&O) contractor employees. The NPR-1 program continues to work towards closing out the remaining environmental findings at the site, as required by the 2008 agreement between the Department of Energy (DOE) and the California Department of Toxic Substances Control (DTSC).

DOE also operated Naval Petroleum Reserve 3 (NPR-3) and the Rocky Mountain Oilfield Testing Center (RMOTC), co-located near Casper, Wyoming, until its sale in January 2015. DOE retains responsibility for Industrial Landfill number 2 (IND-2) located at NPR-3 until a closure permit is issued by the Wyoming Department of Environmental Quality (WDEQ). Landfill remediation activities were completed in FY 2017 and ground water sampling began in compliance with WDEQ requirements. The period of sampling will be specified by WDEQ but is expected to continue for one to four years. No new FY 2023 budget authority is requested for NPR-3.

The program will continue the ongoing activities to attain release from the remaining environmental findings related to the sale of NPR-1. All 131 areas of concern (AOC) have undergone an initial investigation and the program has made recommendations to California’s DTSC for either no further action (NFA) required status, additional field work investigation, or remedial action.

Highlights and Major Changes in the FY 2023 Budget Request

New FY 2023 budget authority of \$13.004 million will support continued work with the California DTSC and other stakeholders on the environmental remediation and cultural resource activities in accordance with the 2008 DTSC Corrective Action Consent Agreement to obtain NFA status for all 131 AOCs.

Also included is the payment to former NPR-1 M&O contractor employees for post-employment medical and dental benefits. NPR-3 will continue groundwater sampling activities for the landfill closure with oversight by the Washington, D.C., Headquarters office.

**Naval Petroleum and Oil Shale Reserves
Funding by Congressional Control (\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
Naval Petroleum and Oil Shale Reserves					
Production Operations	11,000	11,000	11,004	+4	+0.0%
Management	2,006	2,006	2,000	-6	-0.3%
Total, Naval Petroleum and Oil Shale Reserves	13,006	13,006	13,004	-2	-0.0%
Federal FTEs	4	4	4		

Outyear Priorities and Assumptions

In the FY 2012 Consolidated Appropriations Act (P.L. 112-74), Congress directed the Department to include a future-years energy program (FYEP) in subsequent requests that reflects the proposed appropriations for five years. This FYEP shows outyear funding for each account for FY 2024 - FY 2027. The outyear funding levels use the growth rates from and match the outyear account totals published in the FY 2023 President’s Budget for both the 050 and non-050 accounts. Actual future budget request levels will be determined as part of the annual budget process.

**Future Years Energy Program (FYEP)
(\$K)**

	FY 2023 Request	FY 2024	FY 2025	FY 2026	FY 2027
Naval Petroleum and Oil Shale Reserves	\$13,004	\$13,000	\$14,000	\$14,000	\$14,000

**Naval Petroleum and Oil Shale Reserves
Production Operations**

Overview

The NPR-1 program continues to work towards closing out the remaining environmental restoration and remediation activities for 131 AOCs, as required by the 2008 agreement between DOE and California's DTSC. DOE will continue the monitoring and oversight of environmental remediation of the Elk Hills site and the work on records disposition.

The NPR-3 program will continue post-sale activities for the closure of the landfill using prior-year balances. No new FY 2023 budget authority is requested for NPR-3.

Highlights of the FY 2023 Budget Request

The Department is requesting new FY 2023 budget authority of \$13.004 million to fund the remediation work at the NPR-1 site.

Of the 131 AOCs for which DOE is responsible for environmental cleanup, as of March 2021, 111 AOCs have received NFA certification from California's DTSC. The remaining 20 AOCs that require remediation are larger-scale projects with substantial funding requirements. New FY 2023 budget authority of \$13.004 million supports remediation of 3 AOCs.

**Production Operations
Funding (\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
NPR-1 Closeout	11,000	11,000	11,004	+4	0.0%
NPR-3 Disposition	0	0	0	0	0.0%
Total, Production Operations	11,000	11,000	11,004	+4	0.0%

Production Operations
Explanation of Major Changes
(\$K)

FY 2023 Request vs FY 2021 Enacted

<p>NPR-1 Closeout: FY 2023 budget authority will finance continued environmental assessment and remediation activity, in accordance with NPR-1 post-sale legal agreements.</p>	<p>+\$4</p>
<p>NPR-3 Disposition: No FY 2023 budget authority is requested. NPR-3 ongoing post-sale remediation monitoring activities will continue through NPR-3 closeout in one to four years.</p>	<p>\$0</p>
<p>Total, Production Operations</p>	
	<p>+\$4</p>

**Production Operations
Funding**

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
Production and Operations \$11,000,000	\$11,004,000	+\$4,000
NPR-1 Closeout \$11,000,000	\$11,004,000	+\$4,000
<ul style="list-style-type: none"> • Program will continue the ongoing activities to attain release from the remaining environmental findings related to the sale of NPR-1. The FY 2021 Request amount includes funding that supports remediation of 3 sub-areas of concern (AOCs). 	<ul style="list-style-type: none"> • Program will continue the ongoing activities to attain release from the remaining environmental findings related to the sale of NPR-1. The FY 2023 Request includes funding that supports remediation of 3 AOCs. 	<ul style="list-style-type: none"> • Funding supports the ongoing remediation work at the NPR-1 site.
NPR-3 Disposition \$0	\$0	\$0
<ul style="list-style-type: none"> • Disposition completed; post-sale remediation monitoring activities for the landfill are ongoing. 	<ul style="list-style-type: none"> • Disposition completed; post-sale remediation monitoring activities for the landfill are ongoing. 	<ul style="list-style-type: none"> • No change.

Naval Petroleum and Oil Shale Reserves Management

Overview

Management provides funding for payments to former NPR-1 M&O contractor employees for post-medical and dental benefits, a legal requirement of the 1998 NPR-1 sales agreement. Management also provides the Federal staffing resources and associated costs required to provide overall direction and execution of the NPOSR. There are a variety of inherently governmental functions, such as program management, contract administration, and budget formulation and execution that require a dedicated Federal workforce. NPOSR uses contractor support services and other related expenses to support the field environmental assessment, remediation, and management of the program.

Highlights of the FY 2023 Budget Request

The NPR-1 funding supports Federal staff that provide oversight, monitor environmental clean-up, and manage disposition activities. The sales agreement also includes payments to former NPR-1 M&O contractor employees for post-employment medical and dental benefits.

NPR-3/RMOTC final office closeout was completed December 30, 2015; however, administrative oversight of the landfill closure will continue to be conducted by the Department of Energy Headquarters office. No new FY 2023 budget authority is requested for NPR-3.

**Management
Funding (\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
Washington Headquarters					
Salaries and Benefits	531	531	540	+9	+1.7%
Travel	50	50	40	-10	-20.0%
Support Services	425	425	420	-5	-1.2%
Other Related Expenses	1,000	1,000	1,000	0	0.0%
Total, Washington Headquarters	2,006	2,006	2,000	-6	-0.3%
NPR – Wyoming					
Salaries and Benefits	0	0	0	0	0.0%
Travel	0	0	0	0	0.0%
Support Services	0	0	0	0	0.0%
Other Related Expenses	0	0	0	0	0.0%
Total, NPR – Wyoming	0	0	0	0	0.0%
Total Management					
Salaries and Benefits	531	531	540	+9	+1.7%
Travel	50	50	40	-10	-20.0%
Support Services	425	425	420	-5	-1.2%
Other Related Expenses	1,000	1,000	1,000	0	0.0%
Total, Management	2,006	2,006	2,000	-6	-0.3%
Federal FTEs	4	4	4	0	0.0%
Support Services					
Technical Support					
Environmental, Safety, Security & Health	0	0	0	0	0.0%
Technical Services	400	400	400	0	0.0%
Total, Technical Support	400	400	400	0	0.0%
Management Support					
Business Administration	0	0	0	0	0.0%
IT Support	25	25	20	-5	-20.0%
Total Management Support	25	25	20	-5	0.0%
Total, Support Services	425	425	420	-5	-1.2%

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
Other Related Expenses					
Rent to Others	0	0	0	0	0.0%
Communications, Utilities & Misc.	0	0	0	0	0.0%
Other Services	1,000	1,000	1,000	0	0.0%
Operation and Maintenance of Equipment	0	0	0	0	0.0%
Supplies and Materials	0	0	0	0	0.0%
Total, Other Related Expenses	1,000	1,000	1,000	0	0.0%

**Management
Funding**

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
Management \$2,006,000	\$2,000,000	\$-6,000
Salaries and Benefits \$531,000	\$540,000	\$+9,000
<ul style="list-style-type: none"> Continue monitoring activities at NPR-1 (cultural resources mitigation, environmental clean-up, oversight, and audit). 	<ul style="list-style-type: none"> Continue monitoring activities at NPR-1 (cultural resources mitigation, environmental clean-up, oversight, and audit). No new FY 2023 budget authority is requested for NPR-3. 	<ul style="list-style-type: none"> The cost of salaries and benefits has increased due to annual escalation.
Travel \$50,000	\$40,000	\$-10,000
<ul style="list-style-type: none"> Federal travel will be required for environmental cleanup at NPR-1. 	<ul style="list-style-type: none"> Federal travel will be required for environmental cleanup at NPR-1. No new FY 2023 budget authority is requested for NPR-3. 	<ul style="list-style-type: none"> The cost of travel has decreased due to meetings being held virtually.
Support Services \$425,000	\$420,000	\$-5,000
<ul style="list-style-type: none"> Support Services for environmental clean-up of NPR-1. 	<ul style="list-style-type: none"> Support Services for environmental clean-up of NPR-1. No new FY 2023 budget authority is requested for NPR-3. 	<ul style="list-style-type: none"> The cost of support services has decreased.
Other Related Expenses \$1,000,000	\$1,000,000	\$0
<ul style="list-style-type: none"> As in prior years, funding provides for post-employment medical and dental benefits for former M&O contractor employees at NPR 1. 	<ul style="list-style-type: none"> As in prior years, funding provides for post-employment medical and dental benefits for former M&O contractor employees at NPR 1. 	<ul style="list-style-type: none"> No change.

**Northeast Home Heating Oil Reserve
Proposed Appropriation Language**

For Department of Energy expenses necessary for Northeast Home Heating Oil Reserve storage, operation, and management activities pursuant to the Energy Policy and Conservation Act (42 U.S.C. 6201 et seq.), \$7,000,000 to remain until expended.

Note – A full-year 2022 appropriation for this account was not enacted at the time the budget was prepared; therefore, the budget assumes this account is operating under the Continuing Appropriations Act, 2022 (Division A of P.L. 117-43, as amended). The amounts included for 2022 reflect the annualized level provided by the continuing resolution.

Explanation of Changes

The FY 2023 Request maintains the Northeast Home Heating Oil Reserve’s storage, operation, and management activities.

Public Law Authorizations

- P.L. 109-58, Energy Policy Act of 2005

Northeast Home Heating Oil Reserve
(\$K)

FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
6,500	6,500	7,000	+500

Overview

The Northeast Home Heating Oil Reserve (NEHHOR) provides a short-term supplement to the Northeast region’s commercial supply of heating oil in the event of supply interruption. In FY 2012, NEHHOR converted from 2 million barrels of high sulfur heating oil to 1 million barrels of Ultra Low Sulfur Diesel (ULSD) to meet Northeast states’ emission standards. The FY 2023 program will continue operation of the 1-million-barrel Reserve. New lease commercial storages contracts went into effect on April 1, 2020, with the final option year extending through March 31, 2024.

Outyear Priorities and Assumptions

In the FY 2012 Consolidated Appropriations Act (P.L. 112-74), Congress directed the Department to include a future-years energy program (FYEP) in subsequent requests that reflects the proposed appropriations for five years. This FYEP shows outyear funding for each account for FY 2024 - FY 2027. The outyear funding levels use the growth rates from and match the outyear account totals published in the FY 2023 President’s Budget for both the 050 and non-050 accounts. Actual future budget request levels will be determined as part of the annual budget process.

Future Years Energy Program (FYEP)
(\$K)

	FY 2023 Request	FY 2024	FY 2025	FY 2026	FY 2027
Northeast Home Heating Oil Reserve	\$7,000	\$7,000	\$7,000	\$7,000	\$7,000

Highlights and Major Changes in the FY 2023 Budget Request

FY 2023 will focus on ongoing commercial leases, oversight, management, and quality analysis of the Reserve as well as ongoing information technology support of the Reserve’s sales system.

**Northeast Home Heating Oil Reserve
Funding by Congressional Control (\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
Northeast Home Heating Oil Reserve					
Northeast Home Heating Oil Reserve	6,500	6,500	7,000	+500	+7.7%
Total, Northeast Home Heating Oil Reserve	6,500	6,500	7,000	+500	+7.7%
Federal FTEs	0	0	0	0	0

**Northeast Home Heating Oil Reserve
Funding (\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
Northeast Home Heating Oil Reserve					
Commercial Leases	5,700	5,700	6,100	+400	+7.0%
Information Technology Support	700	700	800	+100	+14.3%
Quality Control and Analysis	100	100	100	0	0%
Total, Northeast Home Heating Oil Reserve	6,500	6,500	7,000	+500	+7.7%

**Northeast Home Heating Oil Reserve
Explanation of Major Changes (\$K)**

FY 2023 Request vs FY 2021 Enacted

Northeast Home Heating Oil Reserve: The Request of \$7,000 will cover full requirements in FY 2023, to include the full cost of leased commercial storage contracts, information technology support costs, and costs for product quality control and analysis.	+\$500
<hr/>	
Total, Northeast Home Heating Oil Reserve	+\$500

**Energy Security and Infrastructure Modernization Fund
Proposed Appropriation Language**

None.

Explanation of Changes

No budget request is made for FY 2023. The Bipartisan Budget Act of 2015 (Public Law 114-74) authorized the final sale to raise revenue for the Energy Security and Infrastructure Modernization Fund to occur in FY 2020. Section 14002 of the CARES Act (P.L. 116-136) provided the Department flexibility to conduct the final sale in FY 2020, FY 2021, or FY 2022. DOE conducted the final sale in FY 2021. Funds in the ESIM account will be used for Life Extension Phase II (LE2) SPR infrastructure modernization project.

Public Law Authorizations

Public Law 114-74, "Bipartisan Budget Act of 2015."

**Energy Security and Infrastructure Modernization Fund
(\$K)**

FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request
0	0	0

Overview

Section 404 of the Bipartisan Budget Act of 2015 directed the Secretary to establish a Strategic Petroleum Reserve (SPR) Modernization Program to protect the United States economy from the impacts of emergency supply disruptions. The Energy Security and Infrastructure Modernization (ESIM) Fund was established in 2016 for the purpose of providing for the construction, maintenance, repair, and replacement of SPR facilities and associated capital equipment. In establishing the ESIM Fund, Congress made the following findings: 1) The SPR is one of the nation’s most valuable energy security assets; 2) The age and condition of the SPR has diminished its value as a federal energy security asset; 3) Global oil markets and the location and amount of U.S. oil production and refining capacity have dramatically changed in the 40 years since the establishment of the SPR; and 4) Maximizing the energy security value of the SPR requires a modernized infrastructure that meets the drawdown and distribution needs of changed domestic and international oil and refining market conditions.

Section 404 also authorizes the drawdown and sale of crude oil from SPR worth up to \$2 billion over four fiscal years (2017 through 2020) to supply revenue to the ESIM fund and thus finance the Life Extension Phase II (LE2) project. Section 14002 of the CARES Act (P.L. 116-136) provided the Department flexibility to conduct the final sale in FY 2020, FY 2021, or FY 2022. The Department has raised a total of \$1.4B through authorized sales of SPR crude oil for this purpose.

The LE2 project will modernize aging SPR infrastructure through systems upgrades and equipment replacement to ensure the SPR is able to meet mission drawdown and distribution requirements and maintain operational readiness for the future.

Highlights and Major Changes in the FY 2022 Budget Request

No budget request is made for FY 2023 and beyond.

**Energy Security and Infrastructure Modernization Fund
Funding by Congressional Control
(\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
Energy Security and Infrastructure Modernization Fund					
Oil Sale Revenue Targets	0	0	0	0	0.0%
Crude Oil Sales Revenue Offsetting Collections	0	0	0	0	0.0%
Total, Energy Security and Infrastructure Modernization Fund	0	0	0	0	0.0%
Federal FTEs	23	23	23	0	0.0%

Energy Security and Infrastructure Modernization Fund

Overview

The Major Milestones (approved and estimated) for the LE2 project are as follows:

Life Extension Phase II Critical Decisions (CD):

- CD-0 Approve Mission Need – FY 2016 (Approved October 2015)
- CD-1 Approve Alternative Selection and Cost Range – FY 2016 (Approved December 2016)
- CD-3A Approve Long Lead Time Equipment Procurement Items (Bryan Mound, Big Hill, West Hackberry) (Approved July 2017)
- CD-3A Approve Long Lead Time Equipment Procurement Items (Bayou Choctaw) (Approved November 2018)
- CD-3B Approve Long Lead Time Equipment Procurement Items (Bryan Mound, Big Hill, West Hackberry) (Approved November 2018)
- CD-3B/C Approve Long Lead Time Equipment Procurement Items/ Site Prep (Bayou Choctaw – CD-3B) (Other Sites CD-3C) (Approved October 2019)
- CD-3C/D Approve Long Lead Time Equipment Procurement Items / Site Prep (Bayou Choctaw – CD-3C, Other sites – CD-3D) (Approved January 2021)
- CD-2 Approve Performance Baseline BM, BH, BC – (Approved June 2021)
- CD-3 Approve Start of Construction/Project Execution BM, BH, BC – (Approved June 2021)
- Award Construction Contracts BM, BH, BC – This would follow immediately after CD 2/3 approvals in June 2021. I'm sure construction contracts have been awarded by now (I know BM had them in hand and would issue the contracts as soon as CD 2/3 was approved) but I don't get info down to that level. I think it would be safe to say June 2021 but you could be more cautious with July 2021
- CD-2 Approve Performance Baseline WH – September 2021
- CD-3 Approve Start of Construction/Project Execution WH – September 2021
- Award Construction Contracts WH – October 2021
- CD-4 Approve Project Completion (Big Hill, Bayou Choctaw, Bryan Mound) (Estimated April 2025)
- CD-4 Approve Project Completion (West Hackberry) (Estimated October 2025)

LE2 involves work at the Bryan Mound, Big Hill, West Hackberry, and Bayou Choctaw storage sites. The major components of work activities at each site are:

- Bryan Mound and Big Hill: Process Piping, Pipelines, Process & Rotating Equipment
- West Hackberry: Brine System, Civil and Security Systems, Process Piping, and Process Equipment
- Bayou Choctaw: Brine Disposal System, Degas Plant, Roadways and Lighting, Security and Electrical Systems
- Cavern Secondary Well Drilling Program at Bryan Mound, Bayou Choctaw, and West Hackberry sites.

**Energy Security and Infrastructure Modernization Fund
Funding (\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
Energy Security and Infrastructure Modernization Fund					
Oil Sale Revenue Targets	0	0	0	0	0.0%
Crude Oil Sales Revenue Offsetting Revenue Collections	0	0	0	0	0.0%
Total, Energy Security and Infrastructure Modernization Fund	0	0	0	0	0.0%

**Energy Security and Infrastructure Modernization Fund
Explanation of Major Changes (\$K)**

Oil Sale Revenue Targets: No budget request is made for FY 2023.

FY 2023 Request vs FY 2021 Enacted

\$0

Total, Energy Security and Infrastructure Modernization Fund

\$0

**Energy Security and Infrastructure Modernization Fund
Life Extension Phase II**

Description

The Life Extension Phase II project funds activities to modernize aging SPR infrastructure through systems upgrades and associated equipment replacement to ensure the ability to maintain operational and drawdown readiness capability. The scope of work includes system upgrades and associated equipment replacement for the following systems:

- Crude oil transfer systems
- Raw water systems
- Power distribution and electrical systems
- Physical security systems
- Firefighting systems
- Crude oil processing (degasification) plant
- Auxiliary systems and facilities

By FY 2023, The Earned Value Management System (EVMS) will be certified by DOE's Office of Project Management. The project technical baseline will be established (CD-2) and approval to begin construction (CD-3) will be achieved for the last remaining site, West Hackberry. During 2023, LE2 will be in the construction phase of the program at all 4 sites.

FY 2023 Anticipated Major Milestones:

- LE2 will be in the construction phase at all 4 sites.
- All CD approvals will be granted, excluding CD-4, which is scheduled for FY 2025.

Energy Security and Infrastructure Modernization Fund

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
Energy Security and Infrastructure Modernization Fund		
SPR Modernization \$0	\$0	\$0
• No Budget Request was made for FY 2022.	• No Budget Request is made for FY 2023.	• There is no further requirement

**Management
Funding (\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
ESIM Program Direction					
Salaries and Benefits	0	0	0	0	0.0%
Travel	0	0	0	0	0.0%
Other Related Expenses	0	0	0	0	0.0%
Total, Management	0	0	0	0	0.0%
Federal FTEs	23	23	23		

**Power
Marketing
Administrations**

**Power
Marketing
Administrations**

**Southeastern Power Administration
Proposed Appropriation Language**

For expenses necessary for operation and maintenance of power transmission facilities and for marketing electric power and energy, including transmission wheeling and ancillary services, pursuant to section 5 of the Flood Control Act of 1944 (16 U.S.C. 825s), as applied to the southeastern power area, \$8,173,000, including official reception and representation expenses in an amount not to exceed \$1,500, to remain available until expended: Provided, That notwithstanding 31 U.S.C. 3302 and section 5 of the Flood Control Act of 1944, up to \$8,173,000, collected by the Southeastern Power Administration from the sale of power and related services shall be credited to this account as discretionary offsetting collections, to remain available until expended for the sole purpose of funding the annual expenses of the Southeastern Power Administration: Provided further, That the sum herein appropriated for annual expenses shall be reduced as collections are received during the fiscal year so as to result in a final fiscal year 2023 appropriation estimated at not more than \$0: Provided further, That, notwithstanding 31 U.S.C. 3302, up to \$78,696,000 collected by the Southeastern Power Administration pursuant to the Flood Control Act of 1944 to recover purchase power and wheeling expenses shall be credited to this account as offsetting collections, to remain available until expended for the sole purpose of making purchase power and wheeling expenditures: Provided further, That for purposes of this appropriation, annual expenses means expenditures that are generally recovered in the same year that they are incurred (excluding purchase power and wheeling expenses).

Explanation of Changes

No changes.

Public Law Authorizations:

Public Law 78-534, Flood Control Act of 1944

Public Law 95-91, DOE Organization Act of 1977, Section 302

Public Law 101-1-1, Title III, Continuing Fund (amended 1989)

Public Law 102-486, Energy Policy Act of 1992

Southeastern Power Administration

Funding (\$K)

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request
Gross	77,409	77,409	100,960
Offsets	-77,409	-77,409	-100,960
Net BA	0	0	0

Outyear Funding (\$K)

	FY 2024 Request	FY 2025 Request	FY 2026 Request	FY 2027 Request
Gross	103,271	105,696	108,130	110,960
Offsets	-103,271	-105,696	-108,130	-110,960
Net BA	0	0	0	0

Overview

Southeastern Power Administration (Southeastern or SEPA) exists to carry out the functions assigned by the Flood Control Act of 1944: to market the electric power and energy generated by the Federal reservoir projects to public bodies and cooperatives in the southeastern United States in a professional, innovative, customer-oriented manner, while continuing to meet the challenges of an ever-changing electric utility environment through continuous improvement. Southeastern provides 473 public power customers with 3,392 megawatts of hydroelectric capacity from 22 Federal multipurpose projects, operated by the U.S. Army Corps of Engineers (Corps) at cost-based rates.

Annually, Southeastern produces an average of 7,613 gigawatt-hours of clean renewable hydroelectric energy. Southeastern maintains and upgrades its energy infrastructure to ensure reliable and efficient delivery of Federal power. Southeastern promotes energy efficiency, renewable energy, and sound management of the dispatch and distribution of Federal hydroelectric power resources in the southeastern United States while also meeting national utility performance standards and balancing the diverse interests of other water resource stakeholders. This budget submission enables Southeastern to promote the effective management of hydroelectric resources.

Program Direction supports day-to-day agency operation and Purchase Power and Wheeling supports acquisition of replacement and pumping power along with contractually required transmission services. Consistent with the authority provided in the FY 2010 Energy and Water Appropriations, the FY 2023 budget provides funding for annual expenses (Program Direction) through discretionary offsetting collections derived from power receipts collected to recover those expenses.

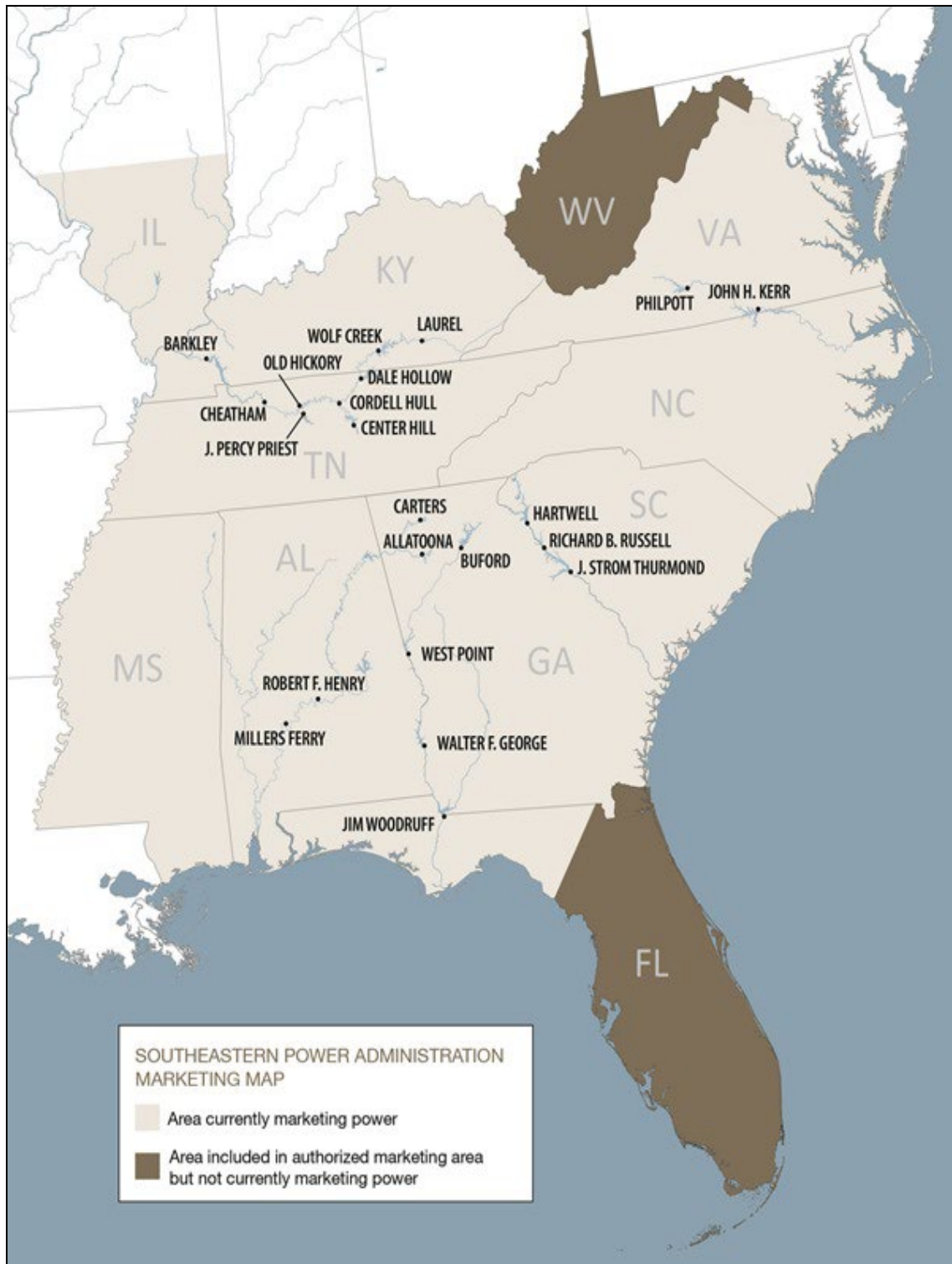
Outyear Priorities and Assumptions

In the FY 2012 Consolidated Appropriations Act (P.L. 112-74), Congress directed the Department to include a future-years energy program (FYEP) in subsequent requests that reflects the proposed appropriations for five years. This FYEP shows outyear funding for each account for FY 2024 - FY 2027. The outyear funding levels use the growth rates from and match the outyear account totals published in the FY 2023 President’s Budget for both the 050 and non-050 accounts. Actual future budget request levels will be determined as part of the annual budget process.

SPWA priorities in the outyears include the following:

- Southeastern's request for FY 2023 increases Purchase Power and Wheeling (+\$26.524 million), reflecting changes in transmission rates and rainfall estimates, and decreases Program Direction (-\$2.973 million) based on more accurate cost estimates.

Service Area Map



**Southeastern Power Administration
Funding by Congressional Control (\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
Southeastern Power Administration					
Purchase Power and Wheeling (PPW)	66,163	66,163	92,687	26,524	40%
Program Direction (PD)	11,246	11,246	8,273	-2,973	-26%
Subtotal, Southeastern Power Administration	77,409	77,409	100,960	23,551	30%
Offsetting Collections, PPW	-52,000	-52,000	-78,696	-26,696	51%
Alternative Financing, PPW	-14,163	-14,163	-13,991	172	-1%
Offsetting Collections, Annual Expenses, PD	-7,246	-7,246	-8,173	-927	13%
Alternative Financing, PD	-4,000	-4,000	-100	3,900	-98%
Total, Southeastern Power Administration	0	0	0	0	0%
Federal FTEs	44	44	44	0	0%

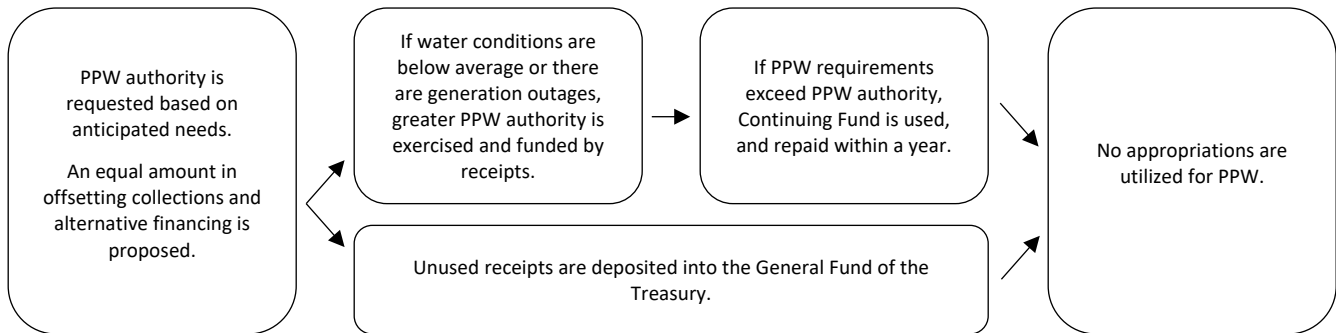
Purchase Power and Wheeling

Overview

The mission of Purchase Power and Wheeling (PPW) is to provide funding for acquisition of transmission services, ancillary services for the system, pumping energy for the Richard B. Russell and Carters Pumped Storage units, and support of the Jim Woodruff Project. Southeastern must purchase power on the open market when its Federal generating assets cannot provide enough power to fulfill its contracts with its customers.

Additionally, because Southeastern does not own or operate any transmission infrastructure, transmission expenses are based on contracts with area transmission providers to deliver specified amounts of Federal power from the hydropower projects to Federal power customers. Southeastern has access to a continuing fund for emergency expenses necessary to ensure continuity of service. Southeastern has implemented a plan to repay any Purchase Power and Wheeling expenditures made through the Continuing Fund within one year.

The FY 2023 request uses customer receipts and net billing to pay for purchase power and wheeling expenses at no cost to the Federal Treasury. Some customers, acting independently or in partnerships, acquire replacement power and transmission services directly from suppliers. Southeastern will continue to assist its customers by arranging funding for these activities through alternative financing instruments, as needed.



Highlights of the FY 2023 Budget Request

The PPW subprogram supports Southeastern's mission to market and deliver reliable, cost-based hydroelectric power and related services. PPW enables Southeastern to wheel Federal power to preference customers, purchase replacement power, and acquire pumping energy to maximize the efficiency and benefits of Southeastern's hydropower resources. Power and services are marketed at rates designed to provide recovery of expenses and Federal investment, as established by law.

**Purchase Power & Wheeling
Funding (\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
Purchase Power					
Replacement Power	3,797	3,797	7,447	3,650	96%
Russell Project pumping power	6,770	6,770	12,017	5,247	78%
Carters Project pumping power	5,500	5,500	13,244	7,744	141%
Jim Woodruff Project support	2,600	2,600	2,000	-600	-23%
Total, Purchase Power	18,667	18,667	34,708	16,041	86%
Wheeling					
Wheeling service charges	42,756	42,756	53,239	10,483	25%
Ancillary Services	4,740	4,740	4,740	0	0%
Total, Wheeling	47,496	47,496	57,979	10,483	22%
Total, Purchase Power and Wheeling	66,163	66,163	92,687	26,524	40%
Alternative Financing					
Net Billing	-14,163	-14,163	-13,991	172	-1%
Subtotal, Purchase Power and Wheeling	52,000	52,000	78,696	26,696	51%
Offsetting Collections Realized	-52,000	-52,000	-78,696	-26,696	51%
Total, Purchase Power and Wheeling Budget Authority	0	0	0	0	0%

**Southeastern Power Administration
Purchase Power and Wheeling
(\$K)**

Activities, Milestones, and Explanation of Changes (\$K)

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
Purchase Power and Wheeling \$66,163	\$92,687	+\$26,524
Purchase Power \$18,667	\$34,708	+\$16,041
<ul style="list-style-type: none"> • On-Peak Replacement Power purchased to meet contract minimum service in drought conditions. • Off-Peak Pumping Power purchased to supplement stream flow energy demand. • Jim Woodruff System Generating Support required for high river flows at low head plant. 	<ul style="list-style-type: none"> • Continuing activities from prior year. 	<ul style="list-style-type: none"> • Reflects anticipated needs based on projected market prices.
Wheeling \$47,496	\$57,979	+\$10,483
<ul style="list-style-type: none"> • Transmission expenses based on contracts with area transmission providers to deliver specified amounts of Federal power from the hydropower projects to Federal power customers. 	<ul style="list-style-type: none"> • Continued funding supports ongoing activities. 	<ul style="list-style-type: none"> • Reflects variations in transmission rates.

Program Direction

Overview

Program Direction provides the Federal staffing resources and associated costs required to provide overall direction and execution of the Southeastern Power Administration. Provision is made for negotiation and administration of transmission and power contracts, collections of revenues, accounting and budget activities, development of wholesale power rates, amortization of the Federal power investment, energy efficiency and competitiveness programs, investigation and planning of proposed water resources projects, scheduling and dispatch of power generation, scheduling storage and release of water, administration of contractual operation requirements, and determination of methods of operating generating plants individually and in coordination with others to obtain maximum allowable utilization of resources.

Highlights of the FY 2023 Budget Request

The FY 2023 Budget Request provides for the continuation of Southeastern's activities related to Program Direction at the level necessary to meet mission requirements.

Program Direction Funding (\$K)

FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
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Program Direction Summary

Southeastern Power Administration

Salaries and Benefits	5,500	5,500	5,800	300	5%
Travel	50	50	50	0	0%
Support Services	0	0	0	0	0%
Other Related Expenses	5,696	5,696	2,423	-3,273	-57%
Subtotal, Southeastern Power Administration	11,246	11,246	8,273	-2,973	-26%
Offsetting Collections (annual expenses)	-7,246	-7,246	-8,173	-927	13%
Alternative Financing, PD	-4,000	-4,000	-100	3,900	-98%
Total, Program Direction	0	0	0	0	0%
Federal FTEs	44	44	44	0	0%

Support Services and Other Related Expenses

Support Services					
Management and Professional Support Services	0	0	0	0	0%
Total, Support Services	0	0	0	0	0%
Other Related Expenses					
Training	21	21	35	14	67%
Communications, Utilities, Misc.	209	209	285	76	36%
Equipment	129	129	426	297	230%
Maintenance Agreements	430	430	570	140	33%
Land and Structures	4,000	4,000	0	-4,000	0%
Rent to GSA	0	0	0	0	0%
Tuition	48	48	75	27	56%
Contract Services	472	472	552	80	17%
Audit of Financial Statements	257	257	320	63	25%
Supplies and Materials	73	73	85	12	16%
Working Capital Fund	49	49	65	16	33%
Printing and Reproduction	8	8	10	2	25%

Total, Other Related Expenses

5,696

5,696

2,423

-3,273

-57%

**Program Direction
(\$K)**

Activities, Milestones, and Explanation of Changes (\$K)

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
Program Direction \$11,246	\$8,273	-\$2,937
Salaries and Benefits \$5,500	\$5,800	+\$300
The funding supports Federal salaries and benefits for 44 FTEs who market Federal hydropower, promote energy efficiency and renewable energy, administrative support, and workloads in cyber-security and operational reliability. These estimates are derived from the current year budgeted salaries, plus cost-of-living adjustments, promotions, within-grade increases, overtime, DOE-cascading performance awards, retirement payouts for unused leave, and newly hired FTEs.	Continue funding support for Federal salaries and benefits for 44 FTEs.	Continue funding support for Federal salaries and benefits including the recruiting and retaining of FTEs.
Travel \$50	\$50	\$0
Funding supports transportation and per diem expenses incurred for preference customer meetings, relocation expenses for new FTEs, contract negotiations, rate forums, Congressional hearings, site visits, and operations meetings with industry organizations.	Continued funding supports ongoing activities.	Continued use of conference calls, webinar sessions, internet training, and video conferencing.
Support Services \$0	\$0	\$0
Funding supports preference customers' efforts in support of the Energy Policy Act of 2005.	No funding is requested for FY 2023.	Reduced customer participation in program funding.
Other Related Expenses \$5,696	\$2,423	-\$3,273
Funding provides administrative support for office, emergency control center, communications, maintenance, contract services, supplies, materials, equipment and support for cyber and physical security, training expenses for power operator certification, support for installation of electronic hardware and software for the operations center and provides maintenance to integrate real-time data from the control area and provides the data to other transmission operators and NERC.	Continue funding support for Southeastern Power Administration's headquarters office and emergency control center, along with services of the Power Marketing Liaison Office, and the Human Resources Shared Service Center (HRSSC).	Reflects required hardware purchases and software service agreements and updates along with training, tuition, and communications costs. Costs are based on the historical usage and actual cost of similar items as well as inflationary increases. FY 2021 request included \$4 million to purchase headquarters facility. FY 2023 request reflects costs associated with ownership of headquarters building.

Additional Tables

Revenue and Receipts (\$K)

	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate
Gross Revenues	295,705	325,095	326,782	328,933	331,199	333,577	336,075
Net Billing (Credited as an Offsetting Receipt)	-13,742	-13,353	-13,991	-14,169	-14,355	-14,551	-14,757
Total Cash Receipts	281,963	311,742	312,791	314,764	316,844	319,026	321,318
Use of Offsetting Collections to fund PPW	-52,000	-53,000	-78,696	-80,674	-82,754	-84,936	-87,229
Use of Offsetting Collections to fund Annual Expenses	-9,746 ^a	-7,184	-8,173	-8,428	-8,587	-8,643	-8,704
Total Receipts, net use of Offsetting Collections	222,717	251,558	225,922	225,662	225,503	225,447	225,385
Cumberland Rehabilitation	-49,169	-50,000	-50,000	-50,000	-50,000	-50,000	-50,000
GA-AL-SC Rehabilitation	-12,735	-15,000	-15,000	-15,000	-1,500	-1,500	-1,500
Kerr-Philpott Rehabilitation	-3,000	-5,000	-5,000	-5,000	-5,000	-5,000	-5,000
Jim Woodruff	-350	-1,000	-1,000	-1,000	-1,000	-1,000	-1,000
Accts Rec Yearly Difference	-3,603	0	0	0	0	0	0
Total Proprietary Receipts	151,360	180,558	154,922	154,662	168,003	167,947	167,885
Percent of Sales to Preference Customers	99%	99%	99%	99%	99%	99%	99%
Energy Sales and Power Marketed (megawatt-hours)	8,128,837	5,587,740	5,587,740	5,587,740	5,587,740	5,587,740	5,587,740

Alternative Financing

<u>2021</u>	Transmission	Purchase Power	Offsetting Collections	Net Billing	Appropriated Funds
Jim Woodruff System	360	613	-138	-835	0
Kerr-Philpott System	17,807	0	-17,807	0	0
GA-AL-SC System	35,980	1,226	-33,980	-3,226	0
Cumberland System	9,756	0	-75	-9,681	0
	63,903	1,839	-52,000	-13,742	0
<u>2022</u>	Transmission	Purchase Power	Offsetting Collections	Net Billing	Appropriated Funds
Jim Woodruff System	359	2,600	-2,259	-700	0
Kerr-Philpott System	10,171	0	-10,171	0	0
GA-AL-SC System	27,605	16,464	-40,496	-3,573	0
Cumberland System	9,154	0	-74	-9,080	0
	47,289	19,064	-53,000	-13,353	0
<u>2023</u>	Transmission	Purchase Power	Offsetting Collections	Net Billing	Appropriated Funds
Jim Woodruff System	348	2,000	-1,648	-700	0
Kerr-Philpott System	18,830	0	-18,830	0	0
GA-AL-SC System	28,986	32,708	-58,139	-3,555	0

^a Includes \$2.5 million for purchase of headquarters building 249

Cumberland System	9,815	0	-80	-9,735	0
	57,979	34,708	-78,697	-13,990	0

Power Marketed, Wheeled, or Exchanged by Project

Project	State	Plants	Installed Capacity (KW)	FY 2021 Estimated Power (GWH)	FY 2022 Estimated Power (GWH)	FY 2023 Estimated Power (GWH)
<u>Kerr-Philpott System</u>				293	293	293
John H. Kerr	VA-NC	1	291,000			
Philpott	VA	1	15,000			
<u>Georgia-Alabama-South Carolina System</u>				2,508	2,508	2,508
Allatoona	GA	1	82,000			
Buford	GA	1	127,000			
Carters	GA	1	600,000			
J. Strom Thurmond	GA-SC	1	364,000			
Walter F. George	GA-AL	1	160,000			
Hartwell	GA-SC	1	424,000			
R. F. Henry	AL	1	82,000			
Millers Ferry	AL	1	90,000			
West Point	GA-AL	1	87,000			
Richard B. Russell	GA-SC	1	656,000			
<u>Jim Woodruff Project</u>	FL-GA	1	43,500	148	148	148
<u>Cumberland System</u>				2,481	2,481	2,481
Barkley	KY	1	130,000			
Center Hill	TN	1	135,000			
Cheatham	TN	1	36,000			
Cordell Hull	TN	1	99,900			
Dale Hollow	TN	1	54,000			
Old Hickory	TN	1	103,752			
J. Percy Priest	TN	1	28,000			
Wolf Creek	TN	1	270,000			
Laurel	TN	1	61,000			
Total Power Marketed		22	3,939,152	5,430	5,430	5,430

System Statistics

	FY 2021 Actual	FY 2022 Estimate	FY 2023 Estimate
<u>Generating Capacity:</u>			
Nameplate Capacity (KW)	3,939,152	3,939,152	3,939,152
Peak Capacity (KW) ^a	4,330,000	4,330,000	4,330,000
<u>Generating Stations</u>			
Generating Projects (Number)	22	22	22
<u>Available Energy</u>			
Energy from Stream-flow (MWH)	7,938,831	4,685,000	4,685,000
Energy generated from Pumping (MWH)	187,519	745,100	745,100
Energy Purchased for Replacement (MWH)	2,487	157,640	157,640
Total, Energy available for marketing ^b (MWH)	8,128,837	5,587,740	5,587,740

^a Southeastern markets capacity based on nameplate plus an overload factor. NERC requires that Southeastern keep a portion of the capacity in reserve for emergency purposes and to cover losses.

^b Gross amount. Transmission losses are deducted from this amount to estimate the amount of energy marketed.

**Southwestern Power Administration
Proposed Appropriation Language**

For expenses necessary for operation and maintenance of power transmission facilities and for marketing electric power and energy, for construction and acquisition of transmission lines, substations and appurtenant facilities, and for administrative expenses, including official reception and representation expenses in an amount not to exceed \$1,500 in carrying out section 5 of the Flood Control Act of 1944 (16 U.S.C. 825s), as applied to the Southwestern Power Administration, \$53,488,000 to remain available until expended: Provided, That notwithstanding 31 U.S.C. 3302 and section 5 of the Flood Control Act of 1944 (16 U.S.C. 825s), up to \$42,880,000 collected by the Southwestern Power Administration from the sale of power and related services shall be credited to this account as discretionary offsetting collections, to remain available until expended, for the sole purpose of funding the annual expenses of the Southwestern Power Administration: Provided further, That the sum herein appropriated for annual expenses shall be reduced as collections are received during the fiscal year so as to result in a final fiscal year 2023 appropriation estimated at not more than \$ 10,608,000: Provided further, That, notwithstanding 31 U.S.C. 3302, up to \$70,000,000 collected by the Southwestern Power Administration pursuant to the Flood Control Act of 1944 to recover purchase power and wheeling expenses shall be credited to this account as offsetting collections, to remain available until expended for the sole purpose of making purchase power and wheeling expenditures: Provided further, That for purposes of this appropriation, annual expenses means expenditures that are generally recovered in the same year that they are incurred (excluding purchase power and wheeling expenses).

Note: A full-year 2022 appropriation for this account was not enacted at the time the Budget was prepared; therefore, the Budget assumes this account is operating under the Continuing Appropriations Act, 2022 (Division A of P.L. 117-43, as amended). The amounts included for 2022 reflect the annualized level provided by the continuing resolution.

Explanation of Changes

No changes.

Public Law Authorizations

Southwestern Power Administration:

- P.L. 78-534, Section 5, Flood Control Act of 1944
- P.L. 95-91, Section 302, DOE Organization Act of 1977
- P.L. 100-71, Supplemental Appropriations Act, 1987
- P.L. 101-101, Title III, Continuing Fund (amended 1989)
- P.L. 102-486, Section 721, Energy Policy Act of 1992
- P.L. 108-447, Appropriations Act, FY 2005
- P.L. 111-85, Appropriations Act, FY 2010

**Southwestern Power Administration
Overview
(\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request
Gross	116,194	116,194	162,802
Offsets	-105,794	-105,794	-152,194
Net BA	10,400	10,400	10,608

Overview

Southwestern Power Administration’s (Southwestern) mission is to market and reliably deliver Federal hydroelectric power, with preference to public bodies and cooperatives. This is accomplished by maximizing the use of Federal assets to repay the Federal investment, participating with other water resource users in an effort to balance diverse interests with power needs within broad parameters set by the U.S. Army Corps of Engineers (Corps), and implementing public policy.

Southwestern markets and delivers power at wholesale rates to 78 municipal utilities, 21 rural electric cooperatives, and 3 military installations in the six states of Arkansas, Kansas, Louisiana, Missouri, Oklahoma, and Texas¹. In turn, these customers distribute that power to approximately 10 million end users in the six-state area. To integrate the operation of the Federal hydroelectric generating plants and to transmit power from 24 multi-purpose Corps dams to customers, Southwestern operates and maintains 1,381 miles of high-voltage transmission lines, 26 substations/switchyards, and 51 microwave and very high frequency (VHF) radio sites. Southwestern is headquartered in Tulsa, Oklahoma, and has maintenance facilities in Gore, Oklahoma; Jonesboro, Arkansas; and Springfield, Missouri. In addition, around-the-clock power scheduling and dispatching are conducted by staff in Southwestern’s Operations Center located in southwest Missouri.

Southwestern participates in the Southwest Power Pool (SPP) Regional Transmission Organization (RTO) and the Midcontinent Independent System Operator (MISO) RTO, which reinforces Southwestern’s role as part of the Nation’s interconnected generation and transmission system. In participation with the RTOs, Southwestern works on regional and interregional transmission policy initiatives in response to the evolution of the electric utility industry. Furthermore, Southwestern coordinates its varied utility activities in conjunction with a broader group of stakeholders. As the demand for the transmission of power increases across regional and interregional footprints, maintaining and improving the Nation’s energy infrastructure through improvements, replacements, interconnections, and coordination with the RTOs in Southwestern’s marketing area has become more critical than ever. Southwestern assures the efficient and reliable delivery of Federal hydropower, thus fulfilling clean energy security for the present as well as for future generations.

Southwestern’s marketing services and delivery capability provide for recovery of all annual operating costs, including the Corps’ hydropower related costs, and for repayment of taxpayer investment in all assets and facilities that support the Federal hydropower program. Hydropower is not only an important part of the Nation’s clean energy portfolio due to clean generation capabilities, but it also provides support for other renewable resources. Federal hydropower supports the Nation’s grid and complements other generation to create stability as the industry faces energy production changes, organized market evolution and increased threats to the grid. Hydroelectric power is a domestic energy source that helps America achieve clean energy security. Southwestern markets an average of 5,570 gigawatt-hours of clean renewable hydroelectric energy annually.

Southwestern will use the following strategies to fulfill its mission:

- Market and deliver, at the lowest possible cost, all available Federal hydropower generated at the Corps multipurpose projects and work with the Corps, States, cooperatives, and municipalities to meet its statutory requirements while balancing the interests of other water users.

¹ Southwestern’s system map can be found at <https://www.swpa.gov/PDFs/SystemMap2016.pdf?v=2018>.

- Maintain infrastructure and modernize systems to increase the resilience, reliability, efficiency, and use of Federal assets. This will be accomplished using appropriations; Federal power receipts; and alternative financing arrangements, which include net billing and/or reimbursable authority (customer advances).²
- Conduct annual power repayment studies to ensure power rates are sufficient to repay all annual operating costs and the Federal investment with interest.
- Meet Southwestern’s 1200-hour peaking power contractual obligations with necessary purchase power and wheeling using Federal power receipts; alternative financing arrangements, which include net billing and/or reimbursable authority (customer advances); and the Continuing Fund as necessary in periods of below-average hydropower generation.
- Operate the transmission system efficiently to support the Nation’s integrated power grid and engage in transmission policy initiatives within the RTOs in Southwestern’s marketing area to respond effectively to the evolution of the electric utility industry.
- Meet requirements for Southwestern’s compliance with the latest North American Electric Reliability Corporation (NERC) standards.
- Bolster Southwestern’s grid resilience and cyber and physical security postures using best-available technologies and in cooperation with Department of Energy (DOE) and industry partners to protect the Federal transmission system and the Nation’s power grid. Ongoing assessments, realigning vacant positions, investments in the cyber and physical security programs, and infrastructure protection improvements enable Southwestern to continue to provide a safe and reliable product. Southwestern will continue to emphasize security, both cyber and physical, as an agency priority.

External factors that present potential impacts to the overall achievement of the programs’ strategic goals include weather, natural disasters, NERC reliability standards, industry market developments, physical and cybersecurity, changing electric industry organizational structure, interconnections, open access, the uncertainty of sustainable funding resources, competing users’ demand for the limited water resource, and other unforeseen requirements. More specifically:

- The bulk of Southwestern’s transmission infrastructure is approximately 60 years old and requires ongoing maintenance and replacement while concurrently balancing changing and increasing demands for availability.
- Industry efforts to improve the reliability of the Nation’s power grid are placing more requirements on Southwestern’s workforce to implement mandatory reliability standards.
- The potential for malicious physical and cyber-attacks on Southwestern’s assets remains a primary concern. These attacks, cyber and physical, on a utility’s operation would threaten electric system reliability and potentially result in large scale power outages.
- As more of Southwestern’s employees retire or leave Federal service, Southwestern must compete with the rest of the electric utility industry to attract and retain the quality workforce needed to provide a reliable power supply and transmission service.
- Southwestern is increasingly challenged by more complex transmission policy developments including intricate energy and capacity markets, transmission planning processes, and technical rate structures; the deployment of new technologies such as renewables and distributed generation; and heightening emissions and environmental restrictions.
- The Corps water resources projects from which Southwestern markets the hydropower are all multi-purpose. As the demand for water for other purposes increases, energy generation and operating capacity of the hydropower units can be impacted by loss of water storage and availability as well as required operational changes.
- Extreme regional weather events have demonstrated increased price volatility for potential replacement energy purchases necessary to meet contractual power delivery obligations.
- Greater support for climate resilience, regional grid reliability, infrastructure investment, and rate stability as regional utility customers make decisions to transition to cleaner energy resources.

Highlights of the FY 2023 Budget Request

² Southwestern’s authority to use net billing is inherent in the authority provided by the Flood Control Act of 1944 and has been affirmed by the Comptroller General to the Honorable Secretary of the Interior B-125127 (February 14, 1956). This allows Southwestern to accept goods and services in lieu of payment.

Southwestern requests a net appropriation of \$10.6 million for FY 2023. Southwestern’s appropriation consists of four subprograms: Operations and Maintenance, Construction, Purchase Power and Wheeling, and Program Direction. Southwestern utilizes a variety of financing methods including appropriations, Federal power receipts, and alternative financing arrangements, which include net billing and/or reimbursable authority (customer advances).

**Southwestern Power Administration
Outyear Funding**

Net BA (\$K)

	FY 2023 Request	FY 2024	FY 2025	FY 2026	FY 2027
Operation and Maintenance	10,608	10,608	10,608	10,608	10,608

Outyear Priorities and Assumptions

In the FY 2012 Consolidated Appropriations Act (P.L. 112-74), Congress directed the Department to include a future-years energy program (FYEP) in subsequent requests that reflects the proposed appropriations for five years. This FYEP shows outyear funding for each account for FY 2024 - FY 2027. The outyear funding levels use the growth rates from and match the outyear account totals published in the FY 2023 President’s Budget for both the 050 and non-050 accounts. Actual future budget request levels will be determined as part of the annual budget process.

SWPA priorities in the outyears include the following:

Outyear funding levels for Southwestern’s Operation and Maintenance net appropriation total \$42,432,000 for FY 2024 through FY 2027.

- Priority is placed on maintenance, upgrades, physical and cybersecurity, compliance, and cost containment.
- Replacement of Southwestern’s transmission line structures many of which are approaching the estimated average service life for the components, to include the related capitalized payroll and travel costs.
- Increase physical security over Southwestern’s assets to include the Substation Security Fence Replacement Program and IT’s hardware and software upgrades that improve the ability to manage IT assets while driving efficiencies, controlling costs, maintaining compliance and reducing vulnerability.
- Implementation of DOE Order 470.3C Design Basis Threat (DBT) which places greater emphasis on limiting physical security risks at Power Marketing Administrations to include enhanced intrusion detection with surveillance cameras that link to existing Genetec Security system.

**Southwestern Power Administration
Funding by Congressional Control (\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
Operation and Maintenance					
Operations and Maintenance (O&M)	13,292	13,292	15,517	+ 2,225	+ 17%
Construction (CN)	13,267	13,267	16,035	+ 2,768	+ 21%
Purchase Power and Wheeling (PPW)	54,000	54,000	93,000	+ 39,000	+ 72%
Program Direction (PD)	35,635	35,635	38,250	+ 2,615	+ 7%
Subtotal, Operation and Maintenance	116,194	116,194	162,802	+ 46,608	+ 40%
Offsetting Collections, O&M	- 5,657	- 5,657	- 7,998	- 2,341	- 41%
Offsetting Collections, PD	- 31,483	- 31,483	- 34,882	- 3,399	- 11%
Offsetting Collections, PPW	- 34,000	- 34,000	- 70,000	- 36,000	- 106%
Alternative Financing, O&M	- 5,635	- 5,635	- 5,279	- 356	- 6%
Alternative Financing, CN	- 8,167	- 8,167	- 11,035	- 2,868	- 35%
Alternative Financing, PD	- 852	- 852	0	- 852	- 100%
Alternative Financing, PPW	- 20,000	- 20,000	- 23,000	- 3,000	- 15%
Net Budget Authority, Operation and Maintenance	10,400	10,400	10,608	+ 208	+ 2%
Federal FTEs	194	194	194	0	0%

**Operation and Maintenance
Explanation of Major Changes (\$K)**

Explanation of Changes FY 2023 Request vs FY 2021 Enacted

<p>Operations and Maintenance: The increase reflects a renegotiation of the contract for an Archeological Survey of the transmission lines; increased IT costs including non-voice telecommunications for the field, service agreements, hardware replacements and maintenance, and support services costs previously classified Program Direction; a decrease in scheduled improvements at the Springfield, Missouri Operations Center (server room, HVAC); and increases in various services contracts.</p>	<p>+ 2,225</p>
<p>Construction: The increase in the construction subprogram reflects the Reconductor Dardanelle Dam-steel structure (line 3001C, west side, phase 2).</p>	<p>+ 2,768</p>
<p>Purchase Power and Wheeling: The request reflects the anticipated needs based on projected market prices and severe drought hydrologic conditions. It is important for Southwestern to maintain Purchase Power and Wheeling (PPW) funding authority at a level that allows for timely response to severe drought conditions that can develop rapidly (in a matter of months) in Southwestern’s region. Access to funding via spending authority from offsetting collections and utilizing alternative financing provides Southwestern PPW funding options to best plan for and respond to varied hydrologic conditions, such as periods of drought or low water conditions, as well as operational impacts, such as hydropower unit outages for major rehabilitation. This increase reflects anticipated needs for periods of drought or low water conditions.</p>	<p>+ 39,000</p>
<p>Program Direction: The increase in the program direction subprogram reflects aggressive recruiting to fill several technical hard to fill positions, back-filling retirees, cost of living increases for craft workers and power system dispatchers, and filling succession planning positions for knowledge transfer. Also, increase in support services for projected contractual cost of living adjustments.</p>	<p>+ 2,615</p>
<p>Total, Southwestern, Operation and Maintenance</p>	<p>+ 46,608</p>

**Operations and Maintenance
Funding (\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)
Operations and Maintenance (O&M)				
Power Marketing	200	200	200	0
Operations	8,178	8,178	8,413	+ 235
Maintenance	3,550	3,550	4,825	+ 1,275
Capitalized Moveable Equipment	1,364	1,364	2,079	+ 715
Subtotal, Operations and Maintenance	13,292	13,292	15,517	+ 2,225
Offsetting Collections (annual expenses)	- 5,657	- 5,657	- 7,998	- 2,341
Alternative Financing	- 5,635	- 5,635	- 5,279	+ 356
Total, Operations and Maintenance	2,000	2,000	2,240	+ 240

Southwestern Power Administration Operations and Maintenance

Description

The activities of the Operations and Maintenance (O&M) subprogram are critical components in maintaining the reliability of the Federal power system, which is part of the Nation's interconnected generation and transmission system. By marketing and delivering hydroelectric energy, Southwestern makes a meaningful contribution of clean, safe, reliable, affordable, and secure renewable hydroelectric energy to our Nation. The Energy Policy Act (EPACT) and the DOE and Administration's policies emphasize its significant contribution to the Nation's past, current, and future energy supply; and identify Southwestern's important role in meeting electricity demand by supplying hydroelectric energy to its customers. These laws and policies emphasize the need to repair, maintain, and improve transmission and generation facilities to ensure safety, security, resilience and reliability of the Nation's energy infrastructure. SWPA continuously assesses changing climate forecast data to improve climate resilience, including efforts to support the value and stability of the SWPA Federal hydropower products and to ensure response and recovery from climate and extreme weather events. SWPA is participating in the DOE Climate Adaptation and Resilience Plan implementation, and as part of that effort SWPA is in the process of conducting a Vulnerability Assessment and Resilience Plan.

Southwestern's planned O&M projects are subject to change due to unanticipated equipment failure, customer needs, and weather conditions. The realities of maintaining a complex interconnected electric power system periodically require unforeseen reprioritizations of planned projects. All projects share the commonality of maintaining, repairing, and improving the aging infrastructure to ensure the resilience and reliability of the Federal power system.

Power Marketing

The Power Marketing activity funds technical and economic studies to support Southwestern's transmission planning, water resources management, and communication functions. Technical and economic studies provide data to analyze and evaluate the impacts of proposed operational changes and decision-making based on cost-benefit analysis. Funding is also required for Southwestern's coordination with the RTOs and to provide regional power restoration assistance to other non-hydropower generation sources during electric power grid emergencies. The National Electric Transmission Congestion Study identified constraints in the Nation's interconnected electrical grid which could impede power flows. Studies to identify any constraints on Southwestern's system will continue to be conducted. These studies show how the marketing and delivery of power is operationally impacted. The funding level for this activity is derived from Southwestern's engineering plan, negotiated architect/engineering contracts, and the number of studies required per year.

Operations

The Operations activity funds communication functions associated with the dispatch and delivery of power; environmental, safety, and health activities; and other transmission activity costs such as physical security, cybersecurity, and day-to-day power dispatch functions. The Operations activity includes three subactivities:

Communications

This subactivity funds telemetering improvements, technical support to protect cyber infrastructure, an e-tagging system that electronically schedules power for customers, load forecasting, digital test equipment, the radio frequency spectrum fee, and supplies and materials. The telemetering improvements include replacement of obsolete power and energy accounting equipment and modification of existing remote terminal units that improve the reliability of the power system, specifically in the areas of monitoring and control. Funding is required for upgrades that enable Southwestern to meet the goals of the EPACT and NERC by replacing aging infrastructure while assuring reliability and continuing to coordinate with the RTOs in its marketing area.

Southwestern will continue to strengthen cyber and physical security postures using strong and proven technologies that are part of the Continuous Diagnostics and mitigation (CDM) program. In addition to CDM, Southwestern continues to look for other technologies that can be leveraged to ensure compliance with applicable laws and standards to protect the Federal transmission system and the Nation's power grid.

Environmental, Safety, and Health

This subactivity funds environmental activities including waste disposal and clean-up of transformers, grounding and drainage, cultural resource reviews, and environmental assessments for threatened and endangered species such as the American Burying Beetle, various endangered bats, the Leopard Darter, and Interior Least Tern. Additionally, Southwestern may have environmental activities it performs as a Consulting Agency or participating agency resulting from a Biological Opinion or Biological Assessment, or as a participant on an interagency committee or working group. This subactivity also funds property transfers, wetland assessments, environmental library access, Toxic Substance Control Act and Resource Conservation Recovery Act compliance, contractor services, and requirements of the Environmental Protection Program as identified in DOE Order 450.1. The Safety and Health Program activities require funding for aviation safety, industrial hygiene, medical examinations, medical officer, wellness program, safety equipment, and first aid equipment and supplies.

Other Transmission

This subactivity funds physical security, field utility costs, and day-to-day power expenses of the dispatch center and the Alternate Control Center.

Maintenance

The Maintenance activity funds routine repair, maintenance, and improvement of Southwestern's substations/switchyards and high-voltage transmission lines and ensures delivery of reliable, efficient, and clean power to its customers. Southwestern's initial facilities, which were built approximately 60 years ago, are constantly evaluated. Internal and external factors that impact SWPA's maintenance activities and the asset replacement plan include obsolescence of technology and unavailability of replacement parts. By replacing aging equipment and removing constraints that impede power flows, Southwestern ensures the provision of a reliable Federal transmission system. The maintenance activity includes two subactivities:

Substation Maintenance

This subactivity funds power circuit breakers, disconnect switches, instrument transformers, protective relays and related equipment, computer aided drafting and design, revenue meters, vehicle maintenance, fuel, and other equipment to reliably perform general maintenance projects.

Transmission Line Maintenance

This subactivity funds the purchase and maintenance of wood and steel structures, crossarms and braces, right-of-way (ROW) clearing, herbicide application, aerial patrol of the transmission system to identify maintenance needs, routine vehicle repair and maintenance, tractors, equipment, and fuel. The number of steel or wood poles and crossarms and high-voltage insulators replaced is derived from internal maintenance information system criteria. Emphasis has been placed on ROW clearing since NERC identified improper/insufficient ROW clearing as a major factor in potential blackouts. The funding level is appropriate for the number of structures and components to be replaced and the miles of ROW to be cleared as set forth by Southwestern's maintenance plan for meeting the goals of the EPACT and NERC to maintain a reliable transmission system.

Capitalized Moveable Equipment

This activity funds the replacement of vehicles, tractor-trailers, and heavy equipment used for the maintenance and repair of the transmission system and facilities. These vehicles and equipment have exceeded their useful lives and require high levels of maintenance. The vehicle cost estimates are derived from General Services Administration (GSA) pricing schedules.

Operations and Maintenance

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
Operations and Maintenance \$13,292,000	\$15,517,000	+ \$2,225,000
Power Marketing \$200,000	\$200,000	\$0
<ul style="list-style-type: none"> The Power Marketing activity funds the technical and economic studies to support transmission planning. 	<ul style="list-style-type: none"> The Power Marketing activity funds the technical and economic studies to support transmission planning. 	<ul style="list-style-type: none"> Funding request remains the same.
Operations \$8,178,000	\$8,413,000	+\$235,000
<i>Communications (\$5,408,000)</i>	<i>Communications (\$4,903,000)</i>	<i>Communications (- \$505,000)</i>
<ul style="list-style-type: none"> This subactivity funds telemetering improvements, technical support to protect cyber infrastructure, SCADA/EMS system maintenance, load forecasting, and digital testing equipment. 	<ul style="list-style-type: none"> This subactivity funds telemetering improvements, technical support to protect cyber infrastructure, SCADA/EMS system maintenance, load forecasting, and digital testing equipment. 	<ul style="list-style-type: none"> The decrease reflects completion of the Springfield Operations building improvements and server upgrade in support of a more robust cyber security network.
<i>Environmental, Safety, and Health (\$2,050,000)</i>	<i>Environmental, Safety, and Health (\$2,421,000)</i>	<i>Environmental, Safety, and Health (+ \$371,000)</i>
<ul style="list-style-type: none"> The subactivity funds environmental, safety, and health services. 	<ul style="list-style-type: none"> The subactivity funds environmental, safety, and health services. 	<ul style="list-style-type: none"> The increase reflects a renegotiation of the cultural resources archeological survey on Southwestern's transmission lines.
<i>Other Transmission (\$720,000)</i>	<i>Other Transmission (\$1,089,000)</i>	<i>Other Transmission (+ \$369,000)</i>
<ul style="list-style-type: none"> The subactivity funds physical security, field utility costs, and day to day expenses of the dispatch center. 	<ul style="list-style-type: none"> The subactivity funds physical security, field utility costs, and day to day expenses of the dispatch center. 	<ul style="list-style-type: none"> The increase reflects an increase in planned security enhancements.

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
Maintenance \$3,550,000	\$ 4, 825,000	+ \$1,275,000
<i>Substation (\$2,001,000)</i> <ul style="list-style-type: none"> This subactivity funds all equipment, parts, and materials for the operation of high voltage substations. 	<i>Substation (\$2,842,000)</i> <ul style="list-style-type: none"> This subactivity funds all equipment, parts, and materials for the operation of high voltage substations. 	<i>Substation (+ \$841,000)</i> <ul style="list-style-type: none"> The increase reflects substation grounding and drainage improvements.
<i>Transmission Line Maintenance (\$1,549,000)</i> <ul style="list-style-type: none"> This subactivity funds all equipment, parts, and materials for the operation of the high voltage transmission system. Also, vegetation management contracts. 	<i>Transmission Line Maintenance (\$1,983,000)</i> <ul style="list-style-type: none"> This subactivity funds all equipment, parts, and materials for the operation of the high voltage transmission system. Also, vegetation management contracts. 	<i>Transmission Line Maintenance (+ \$434,000)</i> <ul style="list-style-type: none"> The increase reflects an increase in line miles scheduled.
Capitalized Moveable Equipment \$1,364,000	\$2,079,000	+ \$715,000
<ul style="list-style-type: none"> This activity funds the replacement of vehicles, tractor-trailers, and heavy equipment used for the maintenance and repair of the transmission system and facilities. 	<ul style="list-style-type: none"> This activity funds the replacement of vehicles, tractor-trailers, and heavy equipment used for the maintenance and repair of the transmission system and facilities. 	<ul style="list-style-type: none"> The increase reflects the estimated replacement cost of the heavy equipment and utility trucks being purchased.

**Construction
Funding (\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)
Construction				
Transmission System				
Substation Upgrades	0	0	567	+ 567
Communication Upgrades	2,980	2,980	4,122	+ 1,142
Transmission Upgrades	10,287	10,287	11,346	+ 1,059
Subtotal, Construction	13,267	13,267	16,035	+ 2,768
Alternative Financing	- 8,167	- 8,167	- 11,035	- 2,868
Total, Construction	5,100	5,100	5,000	-100

Southwestern Power Administration Construction

Description

The activities of the Construction subprogram enable Southwestern to market and deliver Federal hydropower in the most reliable, safe, efficient, and cost-effective manner to meet the operational criteria required by the North American Electric Reliability Corporation while avoiding transmission infrastructure deterioration. Southwestern's planned construction projects are subject to change based on unanticipated equipment failure, customer needs, and weather conditions. The realities of maintaining a complex interconnected power system include unforeseen priority projects which arise periodically, causing a reprioritization of planned projects. All projects share the commonality of replacing aging infrastructure necessary to maintain the resilience and reliability of the Federal power system. SWPA supports climate resilience through improved response and recovery controls aimed to reduce the impact of various potential natural disaster risks to the transmission system.

Transmission System

This activity funds current construction projects that require expansion of, or additions to, existing facilities. Southwestern ensures system reliability and resiliency by replacing aging equipment and removing constraints that limit power flows. The projects outlined below address Southwestern's efforts to reduce the risk of extended service outages, avoid more costly replacements in the future, and support the increased transmission system usage. The funding level for this activity is derived from internal and external management decisions and field crew observations. System age, risk of equipment failure, life-cycles, obsolescence of technology and unavailability of spare parts, cost, and demand for more capacity are also considered in these budgeting decisions. These variables are assessed and incorporated into Southwestern's ten-year construction plan. The transmission activity includes three subactivities:

Substation Upgrades

This subactivity funds the construction and upgrade of the substations and the components necessary to provide improved system reliability and reduce future maintenance and equipment costs. Southwestern owns and operates 26 substation/switching stations. Many of these facilities were designed and constructed over 60 years ago. The equipment which will be replaced or upgraded includes power transformers, circuit breakers, and control equipment, as well as the structural components necessary to sustain reliable power delivery and support a stable, flexible interconnected power grid.

Communication Upgrades

This subactivity funds all communication equipment planned to provide improved system reliability and reduce future maintenance and equipment costs. This subactivity also provides funding for microwave radios and microwave tower additions, replacements, and modifications that will increase the reliability of communications with generating plants and substations. The communication system provides for the transfer of voice and data traffic to allow monitoring and control of power system generation and transmission assets.

Transmission Upgrades

This subactivity funds transmission system upgrades. Much of the conductor, optical ground wire (OPGW), and static wire on Southwestern's transmission lines has reached the end of its original assumed service life. With this assumed service life, approximately 20 to 30 miles of transmission line, including the conductor, OPGW, static wire, and structures, will need to be replaced each year. As Southwestern replaces the conductor, Southwestern will use the opportunity to increase line capacity where practical to accommodate increased loads in the region.

Spectrum Relocation

The Commercial Spectrum Enhancement Act of 2004 (CSEA, Title II of P.L. 108-494) created the Spectrum Relocation Fund (SRF) to streamline the relocation of Federal systems from existing spectrum bands and accommodate commercial use by facilitating reimbursement of relocation costs to affected agencies. Southwestern has received \$42.8 million in spectrum relocation funds, as approved by the Office of Management and Budget, and as reported to the Congress. Southwestern has completed 100 percent of the tower installation project and anticipates completing antenna and radio installation and obtaining comparable capability by December 31, 2023. These mandatory funds will remain available until expended, and

Southwestern will return any amounts received in excess of actual relocation costs to the SRF. Spectrum relocation activities were funded from spectrum auction proceeds; thus, no funding is requested in this subactivity.

Construction

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
Construction \$13,267,000	\$16,035,000	+ \$2,768,000
Transmission System \$13,267,000	\$16,035,000	+ \$2,768,000
<i>Substation Upgrades (\$0)</i> <ul style="list-style-type: none"> No planned transformer replacements in FY 2021. 	<i>Substation Upgrades (\$567,000)</i> <ul style="list-style-type: none"> No planned upgrades in FY 2023, funding for security fence replacement. 	<i>Substation Upgrades (+ \$567,000)</i> <ul style="list-style-type: none"> The increase reflects the security fence replacement.
<i>Communication Upgrades (\$2,980,000)</i> <ul style="list-style-type: none"> This subactivity funds all communication equipment additions and upgrades. Projects include microwave equipment, fiber terminal equipment upgrades, and microwave tower at Tulsa Headquarters. 	<i>Communication Upgrades (\$4,122,000)</i> <ul style="list-style-type: none"> This subactivity funds all communication equipment additions and upgrades. Projects include microwave equipment, fiber terminal equipment upgrades, and microwave tower replacement at Bull Shoals. 	<i>Communication Upgrades (+ \$1,142,000)</i> <ul style="list-style-type: none"> The increase reflects cost of replacing Bull Shoals tower.
<i>Transmission Upgrades (\$10,287,000)</i> <ul style="list-style-type: none"> Rebuild structures from Clarksville to Structure 87TC, 15.15 miles and Reconductor Dardanelle Dam to structure 39, Line 3001C, phase one (west side), 8.66 miles. 	<i>Transmission Upgrades (\$11,346,000)</i> <ul style="list-style-type: none"> Reconductor Dardanelle Dam-steel structure (line 3001C), west side, phase 2, 14.95 miles and Purchase materials for Rebuild Tupelo-Allen (line 3101), phase 2, 4.89 miles. 	<i>Transmission Upgrades (+ \$1,059,000)</i> <ul style="list-style-type: none"> The increase in the transmission upgrades reflects the additional materials needed for the increase in line miles to be rebuilt.

**Purchase Power and Wheeling
Funding (\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)
Purchase Power and Wheeling				
System Support	50,500	50,500	89,500	+ 39,000
Other Contractual Services	3,500	3,500	3,500	0
Subtotal, Purchase Power and Wheeling	54,000	54,000	93,000	+ 39,000
Offsetting Collections (PPW)	- 34,000	- 34,000	- 70,000	- 36,000
Alternative Financing	- 20,000	- 20,000	- 23,000	- 3,000
Total, Purchase Power and Wheeling	0	0	0	0

Southwestern Power Administration Purchase Power and Wheeling

Description

The Purchase Power and Wheeling (PPW) subprogram provides for the purchase of energy to meet peaking power contractual obligations and the delivery of Federal power. Except for contractual arrangements pertaining to a few electrically-isolated hydropower projects, Southwestern's power sales contracts provide for 1200-hours of peaking power per year delivered from its interconnected system of hydropower projects. At times, due to below average water conditions or hydropower unit outages, Southwestern must purchase power when the hydropower projects cannot produce enough to fulfill its 1200-hour contract obligations. Blending purchased power with the Federal hydropower provides a reliable product while ensuring contract fulfillment occurs. Extreme regional weather events in recent years have demonstrated increased price volatility for potential replacement energy purchases. Availability of requested PPW funding levels supports rate stability. Rate stability is increasingly important as regional utility customers make decisions regarding Federal hydropower and other clean energy resources as part of their evolving energy portfolios.

Southwestern assesses its purchase power needs based on hydrologic conditions and anticipated hydropower unit outages. Hydrologic conditions can vary widely and change rapidly, such that purchase power needs are assessed at least seasonally and can change daily. Unit outages for major rehab and replacement work are known years in advance so that purchase power needs can be planned; however, forced outages or delays in units returning to service can cause sudden changes to anticipated purchase power needs. Power purchases are typically made through contractual arrangements but may also be made on the spot market when conditions are more severe than anticipated or otherwise unexpected. Delivery of purchase power to Southwestern's system is made via the SPP RTO or Southwestern's own transmission system.

In prior years, inadequate funding for PPW and hydrological fluctuations required multiple requests to access the Continuing Fund to ensure sufficient funding was available to fulfill Southwestern's 1200-hour peaking power contractual obligations. Today, requirements associated with utilizing the Continuing Fund for PPW needs could spike power rates for customers and limits the usefulness of this tool for replacement energy needs. In FY 2001, Southwestern requested, and Congress enacted, authority to use Federal power receipts that recover purchase power and wheeling expenses (offsetting collections) to fund its PPW program (up to a specified limit). However, since FY 2018, the enacted levels have been significantly below the requested levels. The use of requested offsetting collections will be largely dependent upon the hydrological conditions realized during the fiscal year. Under average conditions, less than half of the limit requested will be collected and used.

Southwestern's budget request for the PPW subprogram reflects the maximum anticipated need to ensure adequate funding to fulfill its 1,200-hour peaking power contractual obligations considering volatile market prices, unknown forced generation outages, and all but the most severe hydrological conditions. Southwestern will continue to use offsetting collections and alternative financing arrangements, which include net billing and/or reimbursable authority (customer advances), to fund this subprogram. When hydropower generation falls significantly below normal due to severe drought conditions or major outages, Southwestern will utilize the Continuing Fund for emergency PPW expenses.

Southwestern employs a risk mitigation strategy to ensure continuous operations during periods of significant drought. The strategy involves maintaining an unobligated reserve balance of funds from receipts credited as offsetting collection for PPW, in order to respond to rapid-developing severe drought conditions. Any receipts retained are available until expended and are available only for PPW expenses. As of the end of FY 2021, Southwestern's PPW reserve balance was \$86 million. Customers will provide other power resources and/or purchases for the remainder of their firm loads.

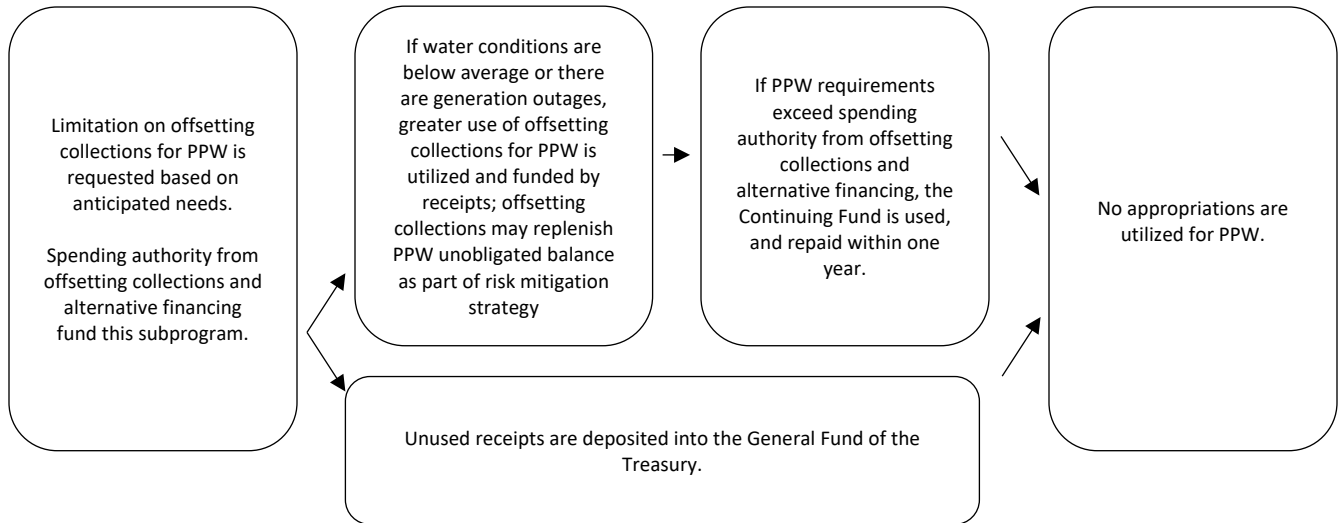
The activities of the PPW subprogram provide for the purchase of power that helps fulfill limited peaking power contractual obligations, thereby ensuring the marketability of the Federal hydropower resource and repayment of the Federal investment. This subprogram also provides for wheeling services that deliver Federal power to optimize the operation of the hydropower facilities marketed by Southwestern. This subprogram enhances the reliability of the electrical transmission grid. PPW includes two activities:

System Support

This activity funds Southwestern’s purchase power requirements needed to fulfill all 1200-hour contractual peaking power obligations with customers. System support requirements depend on the conditions of the interconnected system of hydropower projects which is affected by weather, unit operational condition, power market prices (which can be volatile), and limited availability of energy banks. Since the rates Southwestern charges its customers are based on full cost recovery, Southwestern has a built-in incentive to minimize expenditures for purchase power.

Other Contractual Services

This activity funds other contractual services that provide for wheeling associated with the purchase of transmission service to meet limited peaking power obligations and for the integration of projects for the delivery of Federal power. The funding level is derived from contractual wheeling requirements. The FY 2023 funding request reflects the projected cost for wheeling services based on contractual pricing and delivery terms.



Purchase Power and Wheeling

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
Purchase Power and Wheeling \$54,000,000	\$ 93,000,000	+ \$39,000,000
<i>System Support (\$50,500,000)</i>	<i>(\$89,500,000)</i>	<i>(+ \$39,000,000)</i>
<ul style="list-style-type: none"> This activity funds purchase power requirement needed to fulfill all 1200-hour contractual peaking power obligations with customers. 	<ul style="list-style-type: none"> This activity funds purchase power requirement needed to fulfill all 1200-hour contractual peaking power obligations with customers. 	<ul style="list-style-type: none"> The overall increase in system support reflects maximum anticipated needs based on projected market prices and severe drought hydrologic conditions. Droughts in Southwestern’s region can develop in a matter of months, such that adequate PPW funding must be available for proactive planning and rapid response.
<i>Other Contractual Services (\$3,500,000)</i>	<i>(\$3,500,000)</i>	<i>(+ \$0)</i>
<ul style="list-style-type: none"> Contractual services for wheeling associated with the purchase of transmission service. 	<ul style="list-style-type: none"> Contractual services for wheeling associated with the purchase of transmission service. 	<ul style="list-style-type: none"> Funding request remains the same.

**Program Direction
Funding (\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)
Southwestern Power Administration				
Salaries and Benefits	25,238	25,238	28,528	+ 3,290
Travel	1,710	1,710	1,654	- 56
Support Services	4,037	4,037	4,387	+ 350
Other Related Expenses	4,650	4,650	3,681	- 969
Subtotal, Southwestern Power Administration	35,635	35,635	38,250	+ 2,615
Offsetting Collections (annual expenses)	-31,483	-31,483	- 34,882	- 3,399
Alternative Financing	-852	-852	0	+ 852
Total, Program Direction	3,300	3,300	3,368	+ 66
Federal FTEs	194	194	194	0
Support Services				
Management Support				
Engineering and Technical Services	2,624	2,624	0	- 2,624
Technical Support				
Management and Professional Support Services	1,413	1,413	4,387	+ 2,974
Total Support Services	4,037	4,037	4,387	+ 350
Total, Support Services	4,037	4,037	4,387	+ 350
Other Related Expenses				
Rent to Others	852	852	0	- 852
Communication, Utilities, Misc.	937	937	882	- 55
EITS	36	36	50	+ 14
Printing and Reproduction	76	76	45	- 31
Other Services	719	719	766	+ 47
Training	190	190	197	+ 7
Power Marketing Liaison	140	140	104	- 36
Financial Audit	430	430	450	+ 20
Supplies and Materials	170	170	150	- 20

Equipment
 Working Capital Fund
Total, Other Related Expenses

FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)
450	450	473	+ 23
650	650	564	- 86
4,650	4,650	3,681	- 969

Program Direction

Overview

Southwestern’s Program Direction subprogram ensures continued reliability of the Federal power system by utilizing Federal staffing resources and associated funds required to provide overall direction and execution of Southwestern’s Operation and Maintenance Program.

The Program Direction subprogram supports DOE’s and Southwestern’s missions by providing compensation and all related expenses for its workforce, including those employees that operate and maintain Southwestern’s high-voltage interconnected transmission system and associated facilities; those that plan, design, and supervise the construction of replacements, upgrades, and additions (capital investments) to the transmission facilities; those that market the power and energy produced to repay annual expenses and capital investment; those that perform cyber and physical security roles; and those that administratively support these functions.

Southwestern will use available programs and develop new strategies to hire and train the next generation of engineers, cyber and physical security specialists, power system dispatchers, high voltage electricians, and linemen. These initiatives will address the shortage of these valuable resources because of retirement trends, and the ever-expanding demands on the electric utility industry, such as compliance with NERC and FISMA standards.

Southwestern trains all employees on a continuing basis in occupational safety and health regulations, policies, and procedures to keep the safety culture strong. Accidents are always reviewed to ensure lessons are learned and proper work protocol is in place.

Program Direction is mainly funded from offsetting collections. Other funding utilized for Program Direction is appropriations and if necessary alternative financing arrangements.

Program Direction

Activities and Explanation of Changes		
FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
Program Direction \$35,635,000	\$38,250,000	+ \$2,615,000
<i>Salaries and Benefits (\$25,328,000)</i>	<i>(\$28,528,000)</i>	<i>(+ \$3,290,000)</i>

Program Direction

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
<ul style="list-style-type: none"> The FY 2022 level supports 194 Federal employees: 54 percent of the employees are GS; salaries of the remaining 46 percent (craft workers and power system dispatchers) are determined through union negotiations and wage surveys. This activity also includes overtime, awards, relocation, workers' compensation, recruitment bonuses, retention pay, and advanced in-hire rates. By the end of FY 2021, approximately 27 percent of Southwestern's staff will be eligible for optional retirement. Southwestern will continue to invest in its employees, emphasizing strong development programs, completing skills gap analyses, and pursuing aggressive recruitment and retention efforts. 	<ul style="list-style-type: none"> The FY 2023 level supports 194 Federal employees: 54 percent of the employees are GS; salaries of the remaining 46 percent (craft workers and power system dispatchers) are determined through union negotiations and wage surveys. This activity also includes overtime, awards, relocation, workers' compensation, recruitment bonuses, retention pay, and advanced in-hire rates. By the end of FY 2023, approximately 25 percent of Southwestern's staff will be eligible for optional retirement. Southwestern will continue to invest in its employees, emphasizing strong development programs, completing skills gap analyses, and pursuing aggressive recruitment and retention efforts. 	<ul style="list-style-type: none"> The increase in Salaries and Benefits reflects aggressive recruiting to fill several technical hard to fill positions, back-filling retirees, and filling succession planning positions for knowledge transfer.
<i>Travel (\$1,710,000)</i>	<i>(\$1,654,000)</i>	<i>(- \$56,000)</i>
<ul style="list-style-type: none"> This activity funds all related travel and per diem expenses for mission-related travel to maintain the integrity and reliability of Southwestern's geographically dispersed power system. The funding level for this activity is primarily derived from the daily requirement of the field maintenance personnel to maintain 1,381 miles of transmission lines, 26 substations/switchyards, 51 microwave/radio sites, communication equipment, and the Supervisory Control and Data Acquisition network. Travel for the performance of general and administrative functions is also included. 	<ul style="list-style-type: none"> This activity funds all related travel and per diem expenses for mission-related travel to maintain the integrity and reliability of Southwestern's geographically dispersed power system. The funding level for this activity is primarily derived from the daily requirement of the field maintenance personnel to maintain 1,381 miles of transmission lines, 26 substations/switchyards, 51 microwave/radio sites, communication equipment, and the Supervisory Control and Data Acquisition network. Travel for the performance of general and administrative functions is also included. 	<ul style="list-style-type: none"> The decrease in travel reflects estimated transmission policy related efforts, water resource activities, and field maintenance crew travel.

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
<p><i>Support Services (\$4,037,000)</i></p> <ul style="list-style-type: none"> This activity funds contracted management support services including information technology, E-government, and administrative/records management support. The funding level for this activity is derived from the most recent negotiated contract for support services essential to achieve Southwestern’s mission. 	<p><i>(\$4,387,000)</i></p> <ul style="list-style-type: none"> This activity funds contracted management support services including information technology, E-Government, and administrative/records management support. The funding level for this activity is derived from the most recent negotiated contract for support services essential to achieve Southwestern’s mission. 	<p><i>(+ \$350,000)</i></p> <ul style="list-style-type: none"> Increase reflects new contract costs for headquarters support services.
<p><i>Other Related Expenses (\$4,650,000)</i></p> <ul style="list-style-type: none"> This activity funds rental space, facility security, the financial audit, services of the Power Marketing Liaison Office, the Human Resources Shared Service Center (HRSSC), the working capital fund, technology refresh in the areas of personal computers, hardware and software, printing and reproduction, and training and tuition fees in support of workforce planning and required training to meet the NERC emergency operations requirement. Rental space costs assume the GSA inflation factor. Other costs are based on the historical usage and actual cost of similar items. 	<p><i>(\$3,681,000)</i></p> <ul style="list-style-type: none"> This activity funds facility security, the financial audit, services of the Power Marketing Liaison Office, the Human Resources Shared Service Center (HRSSC), the working capital fund, technology refresh in the areas of personal computers, hardware and software, printing and reproduction, and training and tuition fees in support of workforce planning and required training to meet the NERC emergency operations requirement. Costs are based on the historical usage and actual cost of similar items. 	<p><i>(- \$969,000)</i></p> <ul style="list-style-type: none"> Decrease reflects the reduction in rent at the Tulsa Headquarters Facility and related costs. Although the move to Southwestern’s new HQ facility has been delayed, costs associated with continued rent will be covered through available prior year alternative financing.

**Southwestern Power Administration
Revenues and Receipts
Funding (\$K)**

	FY 2021 Actual	FY 2022 Estimate	FY 2023 Estimate	FY 2024 Estimate	FY 2025 Estimate	FY 2026 Estimate	FY 2027 Estimate
Gross Revenues							
Sale and Transmission of Electric Energy	222,274	198,610	198,610	198,610	198,610	198,610	198,610
Alternative Financing Credited as an Offsetting Receipt (O&M, CN, PD, PPW), Net Billing	-24,496	-38,492	-39,314	-39,555	-37,126	-38,913	-38,900
Alternative Financing Credited as an Offsetting Receipt (Section 212), Net Billing ³	-41,989	-45,611	-39,909	-43,068	-44,797	-43,010	-43,010
Offsetting Collections, Annual Expenses (Net Zero)	-37,140	-37,924	-42,880	-39,440	-40,098	-40,098	-40,098
Offsetting Collections, Purchase Power and Wheeling ('up to' ceiling) ⁴	-34,000	-39,000	-70,000	-70,000	-70,000	-70,000	-70,000
Total Proprietary Receipts	84,649	37,583	6,507	6,547	6,589	6,589	6,602
Percent of Sales to Preference Customers	100%	100%	100%	100%	100%	100%	100%
Energy Sales from Power Marketed (billions of kilowatt hours)	6.5	5.2	5.2	5.2	5.4	5.4	5.4

³ Actual Alternative Financing in estimated years may be more than estimated to provide funding to the WRDA 2000 Section 212 Customer Funding Program, as authorized, dependent upon available receipts based on actual revenues from the sale and transmission of electric energy and utilization of PPW offsetting collections and/or Alternative Financing for PPW in each FY.

⁴ FY 2021 amount enacted for the limit on PPW offsetting collections was \$34 million. For FY 2022 through FY 2027, the estimated amount of offsetting collections for PPW is equivalent to the "up to" amount enacted (FY 2022), requested (FY 2023), or anticipated to be requested (FY 2024-2027) in the budget. The PPW offsetting collections limit requested (when matched with PPW receipts), along with alternative financing used for PPW, could potentially fund a drought for one year or replenish unobligated balances after a drought has occurred. This will also allow funding to be collected in case the drought persists for more than a year.

Southwestern Power Administration
Estimate of Offsetting Collections for Reimbursable Work and Work for Others⁵

	Funding (\$K)		
	FY 2021	FY 2022	FY 2023
Offsetting Collections for Reimbursable Work ⁶			
Alternative Financing			
Operations and Maintenance	5,635	4,591	5,279
Construction	8,167	10,901	11,035
Purchase Power and Wheeling (PPW)	20,000	23,000	23,000
Program Direction	852	0	0
Subtotal, Alternative Financing	34,654	38,492	39,314
Offsetting Collections not anticipated for obligation in budget year	0	0	0
Subtotal, Offsetting Collections for Reimbursable Work	34,654	38,492	39,314
Offsetting Collections for Reimbursable Work-for-Others ⁷	11,346	12,508	12,686
Total, Offsetting Collections for Reimbursable	46,000	51,000	52,000

⁵Southwestern received permanent non-Federal reimbursable authority pursuant to 16 USC 825s-4. Table is shown for transparency purposes.

⁶Southwestern relies significantly on alternative financing arrangements with customers to finance much of its direct mission work on a reimbursable basis.

⁷ Southwestern utilizes various forms of Federal and non-Federal reimbursable agreements. Work-for-Others agreements include interconnection requests, system upgrades for reliability, relocation of structures for State and Federal highways and work for other Federal agencies.

**Southwestern Power Administration
System Statistics**

	FY 2021 Actual	FY 2022 Estimate	FY 2023 Estimate	FY 2024 Estimate	FY 2025 Estimate	FY 2026 Estimate	FY 2027 Estimate
Generating Capacity (kilowatts)							
Installed Capacity	2,213,500	2,213,500	2,242,500	2,242,500	2,242,500	2,242,500	2,242,500
Marketed Capacity	2,058,300	2,058,500	2,058,500	2,058,500	2,058,500	2,058,500	2,058,500
Generating Stations							
Generating Projects (Number)	24	24	24	24	24	24	24
Substations/Switchyards (Number)	26	26	26	26	26	26	26
Substations/Switchyards (kVA Capacity)	1,026,900	1,026,900	1,026,900	1,026,900	1,026,900	1,026,900	1,026,900
Available Energy ⁸ (Megawatt-hours)							
Energy Generated	6,343,219	4,897,600	4,910,400	4,939,000	5,160,900	5,160,900	5,160,900
Energy Received	149,917	320,700	314,800	309,400	252,300	252,300	252,300
Total, Energy Available for Marketing	6,493,136	5,218,300	5,225,200	5,248,400	5,413,200	5,413,200	5,413,200
Transmission Lines (Circuit-Miles)							
161-KV	1,118	1,118	1,118	1,118	1,118	1,118	1,118
138-KV	164	164	164	164	164	164	164
69-KV	99	99	99	99	99	99	99
Total, Transmission Lines	1,381	1,381	1,381	1,381	1,381	1,381	1,381

⁸ Available Energy: actual available energy data is net of losses and other non-marketed energy; estimated data comes from Southwestern's 2021 power repayment studies.

Power Marketed, Wheeled, or Exchanged by Project

State	Number of Plants	Installed Capacity (kW)	Marketed Capacity (kW)	FY 2021 Actual Energy (GWh)	FY 2022 Estimated Energy (GWh)	FY 2023 Estimated Energy (GWh)	FY 2024 Estimated Energy (GWh)	FY 2025 Estimated Energy (GWh)	FY 2026 Estimated Energy (GWh)	FY 2027 Estimated Energy (GWh)
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Power Marketed

Integrated System:

Missouri	4	470,000	688,245	2,178	1,744	1,747	1,755	1,811	1,811	1,811
Arkansas	9	1,058,050	378,008	1,196	958	959	964	995	995	995
Oklahoma	7	514,100	415,185	1,314	1,052	1,054	1,059	1,093	1,093	1,093
Texas	2	112,000	218,386	691	553	554	557	575	575	575
Louisiana	0	0	143,150	453	363	363	365	377	377	377
Kansas	0	0	156,214	494	396	396	398	411	411	411
Subtotals	22	2,154,150	1,999,188	6,327	5,067	5,074	5,097	5,262	5,262	5,262

Isolated:

(Sam Rayburn and Robert D. Willis Projects)

Texas	2	59,350	29,675	154	76	76	76	76	76	76
Louisiana	0	0	29,675	12	76	76	76	76	76	76
Subtotals	2	59,350	59,350	166	152	152	152	152	152	152

Total, Power Marketed⁹	24	2,213,500	2,058,338	6,493	5,218	5,225	5,248	5,413	5,413	5,413
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<u>Power Wheeled (MW)</u>				536	523	519	522	526	526	526
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⁹ Total, Power Marketed: actual energy data is the energy delivered and therefore net of losses and other non-marketed energy; estimated data comes from Southwestern's 2021 power repayment studies.

**Construction, Rehabilitation, Operation and Maintenance
Western Area Power Administration
Proposed Appropriation Language**

For carrying out the functions authorized by title III, section 302(a)(1)(E) of the Act of August 4, 1977 (42 U.S.C. 7152), and other related activities including conservation and renewable resources programs as authorized, \$299,573,000, including official reception and representation expenses in an amount not to exceed \$1,500, to remain available until expended, of which \$299,573,000 shall be derived from the Department of the Interior Reclamation Fund: Provided, That notwithstanding 31 U.S.C. 3302, section 5 of the Flood Control Act of 1944 (16 U.S.C. 825s), and section 1 of the Interior Department Appropriation Act, 1939 (43 U.S.C. 392a), up to \$200,841,000 collected by the Western Area Power Administration from the sale of power and related services shall be credited to this account as discretionary offsetting collections, to remain available until expended, for the sole purpose of funding the annual expenses of the Western Area Power Administration: Provided further, That the sum herein appropriated for annual expenses shall be reduced as collections are received during the fiscal year so as to result in a final fiscal year 2023 appropriation estimated at not more than \$98,732,000 of which \$98,732,000 is derived from the Reclamation Fund: Provided further, That notwithstanding 31 U.S.C. 3302, up to \$350,083,000 collected by the Western Area Power Administration pursuant to the Flood Control Act of 1944 and the Reclamation Project Act of 1939 to recover purchase power and wheeling expenses shall be credited to this account as offsetting collections, to remain available until expended for the sole purpose of making purchase power and wheeling expenditures: Provided further, That for purposes of this appropriation, annual expenses means expenditures that are generally recovered in the same year that they are incurred (excluding purchase power and wheeling expenses).

Explanation of Changes

There is no change in the appropriation language.

Public Law Authorizations

P.L. 57-161, "The Reclamation Act of 1902"
P.L. 78-534, "Flood Control Act of 1944"
P.L. 95-91, "Department of Energy Organization Act" (1977)
P.L. 102-486, "Energy Policy Act of 1992"
P.L. 66-389, "Sundry Civil Appropriations Act" (1922)
P.L. 76-260, "Reclamation Project Act of 1939"
P.L. 80-790, "Emergency Fund Act of 1948"
P.L. 102-575, "Reclamation Projects Authorization and Adjustment Act of 1992"
"Economy Act" of 1932, as amended (41 Stat. 613)
"Interior Department Appropriation Act of 1928"
(44 Stat. 957)
P.L. 70-642, "Boulder Canyon Project Act" (1928)
P.L. 75-756, "Boulder Canyon Project Adjustment Act" (1940)
P.L. 98-381, "Hoover Power Plant Act of 1984"
P.L. 75-529, "The Fort Peck Project Act of 1938"
P.L. 84-484, "The Colorado River Storage Project Act of 1956"
P.L. 90-537, "The Colorado River Basin Project Act of 1968"
The Act of June 18, 1954 (68 Stat. 255)
P.L. No 111-5, "American Recovery and Reinvestment Act of 2009"

**Falcon and Amistad Operating and Maintenance Fund
Proposed Appropriation Language**

For operation, maintenance, and emergency costs for the hydroelectric facilities at the Falcon and Amistad Dams, \$6,330,000, to remain available until expended, and to be derived from the Falcon and Amistad Operating and Maintenance Fund of the Western Area Power Administration, as provided in section 2 of the Act of June 18, 1954 (68 Stat. 255): Provided, That notwithstanding the provisions of that Act and of 31 U.S.C. 3302, up to \$6,102,000 collected by the Western Area Power Administration from the sale of power and related services from the Falcon and Amistad Dams shall be credited to this account as discretionary offsetting collections, to remain available until expended for the sole purpose of funding the annual expenses of the hydroelectric facilities of these Dams and associated Western Area Power Administration activities: Provided further, That the sum herein appropriated for annual expenses shall be reduced as collections are received during the fiscal year so as to result in a final fiscal year 2023 appropriation estimated at not more than \$228,000: Provided further, That for purposes of this appropriation, annual expenses means expenditures that are generally recovered in the same year that they are incurred: Provided further, That for fiscal year 2023, the Administrator of the Western Area Power Administration may accept up to \$1,598,000 in funds contributed by United States power customers of the Falcon and Amistad Dams for deposit into the Falcon and Amistad Operating and Maintenance Fund, and such funds shall be available for the purpose for which contributed in like manner as if said sums had been specifically appropriated for such purpose: Provided further, That any such funds shall be available without further appropriation and without fiscal year limitation for use by the Commissioner of the United States Section of the International Boundary and Water Commission for the sole purpose of operating, maintaining, repairing, rehabilitating, replacing, or upgrading the hydroelectric facilities at these Dams in accordance with agreements reached between the Administrator, Commissioner, and the power customers.

Explanation of Changes

There is no change in the appropriation language.

Public Law Authorizations

P.L. 103-236, "Foreign Relations Authorization Act, Fiscal Years 1994 and 1995"
The Act of June 18, 1954 (68 Stat. 255)

**Western Area Power Administration
Funding (\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request
Gross	1,108,393	1,108,393	1,314,146
Offsets	-1,040,193	-1,040,193	-1,223,754
Net BA	68,200	68,200	90,392

**Bipartisan Infrastructure Legislation (BIL) Appropriation
(\$K)**

FY 2022 BIL Appropriation	FY 2023 BIL Appropriation
499,500	0

Overview

Western Area Power Administration (WAPA) continues to support the Department of Energy (DOE) priorities for a resilient, reliable and secure North American electricity system.

WAPA’s mission is to market and reliably deliver cost-based Federal hydroelectric power. WAPA markets power in 15 central and western states from Federally owned power plants operated primarily by the U.S. Army Corps of Engineers, U.S. Bureau of Reclamation and the Department of State’s International Boundary and Water Commission. WAPA operates and maintains a high-voltage, integrated transmission system, including approximately 17,000 circuit-miles of high-voltage transmission lines, more than 300 substations/switchyards and associated power system controls, and communication and electrical facilities.

WAPA serves a diverse group of nearly 700 wholesale customers, including more than two dozen military installations, DOE National labs, municipalities, cooperatives, public utility and irrigation districts, Federal and state agencies and Native American tribes. In turn, WAPA’s customers provide service to millions of retail consumers, including many disadvantaged and energy communities.

WAPA’s base program is funded through three appropriation accounts: 1) the Construction, Rehabilitation, Operation and Maintenance Account (CROM); 2) Falcon and Amistad Operating and Maintenance Fund; and 3) Colorado River Basins Power Marketing Fund (CRBPMF). Within these three accounts, there are seven subprograms: four in the CROM Account, one in the Falcon and Amistad Operating and Maintenance Fund and two in CRBPMF.

In FY 2023, WAPA’s request has been formulated to meet its power marketing and contractual power delivery obligations with continued high marks for reliability. The request prioritizes grid modernization through data-driven investment decisions designed to improve resiliency and reliability of WAPA's transmission system.

**Western Area Power Administration
Funding by Congressional Control (\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
Construction, Rehabilitation, Operation and Maintenance (CROM)					
Operation and Maintenance	77,874	77,874	85,229	+7,355	+9%
Construction and Rehabilitation	26,251	26,251	47,189	+20,938	+80%
Purchase Power and Wheeling	485,890	485,890	625,405	+139,515	+29%
Program Direction	253,575	253,575	277,287	+23,712	+9%
Subtotal, CROM Program	843,590	843,590	1,035,110	+191,520	+23%
Alternative Financing					
Operation and Maintenance	-6,297	-6,297	-7,641	-1,344	+21%
Construction and Rehabilitation	-20,353	-20,353	-38,219	-17,866	+88%
Purchase Power and Wheeling	-293,890	-293,890	-275,322	18,568	-6%
Program Direction	-48,546	-48,546	-54,868	-6,322	+13%
Subtotal, Alternative Financing	-369,086	-369,086	-376,050	-6,964	+2%
Offsetting Collections from Colorado River Dam Fund					
Operation and Maintenance	-1,868	-1,868	-1,449	+419	-22%
Program Direction	-6,510	-6,510	-7,955	-1,445	+22%
Subtotal, Offsetting Collections from Colorado River Dam Fund	-8,378	-8,378	-9,404	-1,026	+12%
Offsetting Collections, annual Operation and Maintenance and Program Direction					
Operation and Maintenance	-24,744	-24,744	-29,180	-4,436	+18%
Program Direction	-145,010	-145,010	-171,661	-26,651	+18%
Subtotal, Offsetting Collections, annual Operation and Maintenance and Program Direction	-169,754	-169,754	-200,841	-31,087	+18%
Offsetting Collections, Purchase Power and Wheeling	-192,000	-192,000	-350,083	-158,083	+82%
Use of Prior Year Balances					
Annual Operation and Maintenance	-2,200	-2,200	0	+2,200	-100%
Annual Program Direction	-12,800	-12,800	0	+12,800	-100%
Subtotal, Use of Prior Year Balances	-15,000	-15,000	0	+15,000	-100%
Subtotal, CROM	89,372	89,372	98,732	+9,360	+10%
Rescission of Prior Year Balances	0	0	0	0	0%

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
Total, CROM	89,372	89,372	98,732	+9,360	+10%
Federal FTEs	1,216	1,216	1,201	-15	-1%
Falcon and Amistad Operating and Maintenance Fund	7,302	7,302	7,928	+626	+9%
Offsetting Collections, annual Operation and Maintenance	-5,548	-5,548	-6,102	-554	+10%
Use of Prior Year Balances	0	0	0	0	0%
Alternative Financing	-1,526	-1,526	-1,598	-72	+5%
Total, Falcon and Amistad	228	228	228	0	0%
Federal FTEs	0	0	0	0	0%
Colorado River Basins Power Marketing Fund (CRBPMF)	245,047	245,047	258,466	+13,419	+5%
Offsetting Collections	-266,447	-266,447	-267,034	-587	0%
Total, CRBPMF	-21,400	-21,400	-8,568	+12,832	-60%
Federal FTEs	294	294	308	+14	+5%
Transmission Infrastructure Program Fund (TIP)	12,454	12,454	12,642	+188	+2%
Advance Funding	-2,025	-2,025	-1,750	+275	-14%
Offsetting Collections	-10,429	-10,429	-10,892	-463	+4%
Total TIP	0	0	0	0	0%
Federal FTEs	11	11	12	+1	+9%
Total, Western Area Power Administration	68,200	68,200	90,392	+22,192	+33%
Federal FTEs	1,521	1,521	1,521	0	0%

**Construction, Rehabilitation, Operation and Maintenance
Western Area Power Administration
Funding (\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request
Gross	843,590	843,590	1,035,110
Offsets	-754,218	-754,218	-936,378
Subtotal	89,372	89,372	98,732
Rescission of prior year balances	0	0	0
Net BA	89,372	89,372	98,732

Overview

WAPA markets and delivers reliable, cost-based Federal hydroelectric power and related services. WAPA’s marketing efforts and delivery capability provide for recovery of annual operational costs, including the generating agencies’ hydropower related costs, and repayment of taxpayer investment in the Federal hydropower program. WAPA repays the Federal investment for which it is responsible within the timeframes established by law and regulations.

WAPA’s Construction, Rehabilitation, Operation and Maintenance Account (CROM) is comprised of four subprograms:

- Operation and Maintenance
- Construction and Rehabilitation
- Purchase Power and Wheeling
- Program Direction

WAPA’s subprograms are funded using a variety of financing methods including appropriations, alternative financing (primarily customer advances), and use of receipt authorities.

In FY 2023, WAPA’s request has been formulated to meet its power marketing and contractual power delivery obligations with continued high marks for reliability. The request prioritizes grid modernization through data-driven investment decisions designed to improve resiliency and reliability of WAPA's transmission system.

**Outyear Funding
(\$K)**

	FY 2023 Request	FY 2024	FY 2025	FY 2026	FY 2027
CROM Net BA	98,732	101,200	103,224	106,324	108,982

Major Outyear Priorities and Assumptions

Outyear funding levels for WAPA CROM total \$419,730,000 for FY 2024 through FY 2027. The CROM appropriation priorities include:

- Operation and maintenance requirements for reliable and resilient transmission system
- Capital investments in grid modernization and safeguards
- Purchase power and wheeling to meet contractual power delivery obligations

**Operation and Maintenance
Funding (\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
Operation and Maintenance					
Regular Operation and Maintenance	35,586	35,586	38,490	+2,904	+8%
Replacements and Additions	42,288	42,288	46,739	+4,451	+11%
Total, Operation and Maintenance	77,874	77,874	85,229	+7,355	+9%
Alternative Financing	-6,297	-6,297	-7,641	-1,344	+21%
Use of Receipts from Colorado River Dam Fund	-1,868	-1,868	-1,449	+419	-22%
Offsetting Collections	-24,744	-24,744	-29,180	-4,436	+18%
Use of Prior Year Balances	-2,200	-2,200	0	+2,200	-100%
Total, Operation and Maintenance (Budget Authority)	42,765	42,765	46,959	+4,194	+10%

Construction, Rehabilitation, Operation and Maintenance Operation and Maintenance

Description

The Operation and Maintenance (O&M) subprogram provides the supplies, materials and equipment necessary for WAPA to continue to deliver on its mission of providing reliable, resilient domestic energy to 40 million Americans across its 15-state footprint.

Regular Operation and Maintenance

Supplies and materials necessary to respond to routine and emergency situations across WAPA's 17,000 miles of high-voltage interconnected transmission system will be purchased. This includes miscellaneous equipment and software used for power billing, transmission planning, e-tagging, and energy scheduling, as well as supplies and materials such as wood poles (individual pole replacement only; excludes whole line replacements), instrument transformers, meters, relays, etc. Additionally, cyber and physical security audits and monitoring as well as grid operations and monitoring are provided through this activity, which is funded primarily through offsetting collections and alternative customer financing.

Replacements and Additions

WAPA's planned replacements and additions activity is based on cyber and physical security audits, assessments of condition and criticality of equipment, maintenance and frequency of problems on individual items of equipment, availability of replacement parts, safety of the public and WAPA's personnel, environmental concerns and an orderly work plan. Cost estimates are based on an analysis of system operation and maintenance requirements and concerns, customer-coordinated work plans, actual costs of recent similar projects, and bottom-up budgeting techniques. Planned activity is detailed by category below.

Cyber and Physical Security

Investments in the hardening of the transmission grid against increasing foreign and domestic threats include firewalls, cybersecurity upgrades, encryptors for operations offices, security equipment such as perimeter intrusion detection devices, card readers and associated software, security cameras and recording devices at various sites throughout WAPA's service area. These investments in cyber, physical security, and grid technology improvements rely primarily on appropriated funds.

Electrical Equipment

Electrical equipment, such as circuit breakers, transformers, relays, batteries and chargers, reactors, meters, buses, surge arresters, capacitor banks and disconnect switches, will replace obsolete equipment at facilities throughout WAPA's 15-state area. Test equipment used by maintenance crews, such as metering and relaying test sets, pentameters, Ohm testers, oil dielectric testers, battery load testers, and specialized communication and environmental control test equipment is also included. Also included in this request is funding for WAPA's wood pole replacement program. This is a continuing program to replace aging wood transmission line structures, line hardware, and repair damaged conductors and static wires. Many of WAPA's wood transmission line structures were built in the 1950's and 1960's, with the facilities reaching ages in excess of recommended lifespan. Due to age, woodpecker damage, vibratory fatigue, and general deterioration, the system requires constant maintenance upgrades and repairs in order to eliminate the weak links and improve the reliability to our customers.

Communications Equipment

Key to system reliability, replacement of aged or obsolete remote terminal units (RTU), telephone systems, microwave and mobile radio systems with new generation digital radio and fiber optic systems continues. Manufacturers are discontinuing support of obsolete time domain multiplexing (TDM) digital technology equipment in favor of newer packet/internet protocol (IP) based technology as the industry transitions to packet-based networks. WAPA continues with its migration plans to incorporate packet technologies as the current TDM based equipment reaches its end-of-life. Manufacturers have discontinued support of the digital mobile radio equipment WAPA is operating due to obsolescence; this equipment is being replaced with new digital mobile radio technology equipment now and will continue for the next several years.

WAPA's communication systems are currently comprised of approximately 20 percent fiber optics, 70 percent fixed radio, and 10 percent mobile radio. WAPA currently has 1,193 radio frequency authorizations in the fixed radio bands, all of which are digital. This funding will not be used to replace equipment impacted by the Spectrum Relocation initiative.

In addition, WAPA will continue to upgrade its existing supervisory control and data acquisition (SCADA) systems which control WAPA's electric power system. These hardware and software upgrades improve grid reliability by allowing the main SCADA computer to communicate with RTUs in over 300 substations across WAPA's territory, thus allowing the power system dispatcher to operate a device in any of these substations to rapidly make changes in response to electric power industry requirements or system emergencies.

Spectrum Relocation Equipment

The Commercial Spectrum Enhancement Act (CSEA, Title II of P.L. 108-494) of 2004, created the Spectrum Relocation Fund (SRF) to streamline the relocation of Federal systems from specific radio spectrum bands. These spectrum bands will accommodate commercial users and the SRF will facilitate reimbursement to affected agencies for relocation costs. The Federal Communications Commission has allocated this spectrum for Advanced Wireless Services. Funds have been made available to agencies from the crediting of auction receipts to the SRF during FY 2007 and system relocation efforts commenced. WAPA received \$108.2 million for this effort. This amount included WAPA's estimated relocation costs, as approved by the Office of Management and Budget, and as reported to the Congress by the Department of Commerce in December 2005. Since receipt of these funds, WAPA has completed all design work including radio path analysis, tower load analysis, communication building upgrades and replacements, acquiring radio frequency authorizations, and all communication equipment purchases. Final communication equipment installation has been completed. Due to complications during system transition, system clean-up activities and acceptance testing will now be completed by FY 2023. WAPA anticipates returning approximately \$16 million received in excess of actual relocation costs to the SRF. No appropriations are being requested for this activity.

Capitalized Movable Equipment

The majority of these funds will be used to purchase and lease the fleet of standard and specialized vehicles required for WAPA's O&M activities. Although WAPA prefers to lease its vehicles from GSA, GSA cannot always provide the necessary specialized vehicles, especially in the Upper Great Plains Region and the Desert Southwest Region, where they must be equipped for extreme weather and terrain conditions. In these instances, WAPA is forced to purchase its specialized vehicles. All sedans, vans, SUVs, and light trucks are leased from GSA. WAPA replaces government-owned vehicles according to the Federal Management Regulations guidelines, the same guidelines used by GSA. Other capitalized movable equipment in this estimate includes substation test equipment, brush chipper, map board replacement, information technology equipment such as server and router replacements, LAN upgrades, network equipment replacements, storage upgrades, upgrades to WAPA's power system simulator equipment for training purposes, auto-CAD workstation replacements, helicopter and helicopter equipment replacements that add value to the helicopter or extend the service life, such as engine, rotor blades, avionics, airframe, and other major components.

Operation and Maintenance

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
Operation and Maintenance \$77,874,000	\$85,229,000	+\$7,355,000
<i>Regular O&M (\$35,586,000)</i> The continuing maintenance of WAPA's transmission system at or above industry standards supports DOE and WAPA missions by minimizing sudden failure, unplanned outages, and possible regional power system disruptions. The request is based on projected work plans for activities funded from this account. Estimates are based on historical data of actual supplies needed to operate and maintain the transmission system and recent procurement of similar items. This request also includes approximately \$137,000 for appropriated O&M annual expenses that are required to fund WAPA's Salinity and Levee non-reimbursable power systems. The request includes approximately \$1,868,000 for activities in the Boulder Canyon Project, funded through receipts from the Colorado River Dam Fund.	<i>Regular O&M (\$38,490,000)</i> The continuing maintenance of WAPA's transmission system at or above industry standards supports DOE and WAPA missions by minimizing sudden failure, unplanned outages, and possible regional power system disruptions. The request is based on projected work plans for activities funded from this account. Estimates are based on historical data of actual supplies needed to operate and maintain the transmission system and recent procurement of similar items. This request also includes approximately \$220,000 for appropriated O&M annual expenses that are required to fund WAPA's Salinity and Levee non-reimbursable power systems. The request includes approximately \$1,449,000 for activities in the Boulder Canyon Project, funded through receipts from the Colorado River Dam Fund.	<i>Regular O&M (+\$2,904,000)</i> Regular O&M increases are largely driven by substation maintenance requirements and inflationary factors.
<i>Replacements and Additions (\$42,288,000)</i> Replacement needs are based on age, reliability, and safety of equipment, customer-coordinated review, cost analysis of rebuild versus replacement, availability of replacement parts, and obsolescence of diagnostic maintenance tools. Estimates are determined using actual costs of similar items.	<i>Replacements and Additions (\$46,739,000)</i> Replacement needs are based on age, reliability, and safety of equipment, customer-coordinated review, cost analysis of rebuild versus replacement, availability of replacement parts, and obsolescence of diagnostic maintenance tools. Estimates are determined using actual costs of similar items.	<i>Replacements and Additions (+\$4,451,000)</i> Replacements and Additions increases reflect year to year fluctuations in the equipment replacement cycle and are largely driven by substation and movable equipment replacements.

**Construction and Rehabilitation
Funding (\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
Construction and Rehabilitation					
Transmission Lines and Terminal Facilities	13,722	13,722	15,027	+1,305	+10%
Substations	2,727	2,727	22,801	+20,074	+736%
Other	9,802	9,802	9,361	-441	-4%
Subtotal, Construction and Rehabilitation	26,251	26,251	47,189	+20,938	+80%
Alternative Financing	-20,353	-20,353	-38,219	-17,866	+88%
Total, Construction and Rehabilitation	5,898	5,898	8,970	+3,072	+52%

Construction, Rehabilitation, Operation and Maintenance Construction and Rehabilitation

Description

The Construction and Rehabilitation (C&R) subprogram supports WAPA's mission to deliver reliable, clean Federal hydroelectric power by emphasizing the replacement, upgrade, and modernization of the electrical system infrastructure to bring continued reliability, improved connectivity, and increased resilience, flexibility and capability to the power grid.

Financing of the FY 2023 C&R budget, planned at \$47.2 million, will continue to rely heavily on voluntary stakeholder participation in alternative methods for capital financing. Approximately 81 percent of the program funding, or \$38.2 million, will be required from stakeholders, requiring significant partnering efforts.

WAPA has initiated a formalized asset management program to capture data uniformly and systematically on condition, consequences of failure data, and other relevant asset information. The improvements to WAPA's current asset management practices include stronger, more objective data driven evidence, risk-informed priority and decision making, and greater transparency to stakeholders in the allocation of limited resources.

The request incorporates the most current information to identify and schedule necessary C&R projects. WAPA assigns priority to those situations that pose the highest risk to compliance, system reliability, and economic impact to WAPA and its customers, while meeting the mandates for open access to our transmission system. When conditions change, WAPA shifts funding as necessary to ensure the highest program priorities continue to be met to maintain the reliability and integrity of WAPA's power transmission system.

All replacement and rehabilitation plans are coordinated with stakeholders to help establish the timing and scope of work at specific substations. When upgrades or additional capacity are required, WAPA actively pursues partnering with neighboring utilities to jointly finance activities, resulting in cost savings and increased efficiencies for participants.

Unless otherwise provided by law, all C&R costs are recovered from ratepayers with interest over the useful life of the asset providing a revenue stream to the U.S. Treasury. In rare cases, where a C&R project is abandoned, costs are still recovered, but may be expensed.

Transmission Lines and Terminal Facilities

WAPA's 17,000 circuit-mile transmission infrastructure was primarily constructed in the 1940s through 1960s. Thousands of miles of transmission line already exceed their design life. WAPA continues to focus on replacement and upgrade of deteriorating and inadequate infrastructure across WAPA's service area using alternative financing, with continued emphasis on deteriorating transmission lines with high risk of failure and high consequence of failure as determined through data-driven asset management assessments. This activity funds the construction, replacement, or upgrade of transmission line infrastructure and related components necessary to sustain reliable power delivery and support a stable, flexible interconnected power grid.

Substations

WAPA owns and operates more than 320 substations across its 15-state service territory. Many of these facilities were designed and constructed more than 50 years ago. As substation equipment (such as power transformers, circuit breakers, and control equipment) ages, maintenance costs increase, replacement parts become unavailable, risk of outages increase, and system reliability declines. The normal service life for power transformers and circuit breakers is 40 years and 35 years, respectively. This activity funds the construction, replacement, or upgrade of the substations and its components necessary to sustain reliable power delivery and support a stable, flexible interconnected power grid.

Other

The Other category includes C&R activities not otherwise included in the Substations or Transmission Lines and Terminal Facilities categories. These include communication system equipment and other miscellaneous projects covering items like

construction or major rehabilitation of maintenance facilities, access roads, and facility decommissioning and removal costs.

Construction and Rehabilitation

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
Construction and Rehabilitation \$26,251,000	\$47,189,000	+\$20,938,000
<i>Transmission and Terminal Facilities (\$13,722,000)</i>	<i>Transmission and Terminal Facilities (\$15,027,000)</i>	<i>Transmission and Terminal Facilities (+\$1,305,000)</i>
<ul style="list-style-type: none"> • Continue rehabilitation and construction required on WAPA’s transmission lines and terminal facilities to cost-effectively market and deliver clean Federal hydropower and promote a strong record of reliability and safety. • Address additional system reliability risk and operational problems. • Appropriations (\$5,898,000) are requested for the following projects in FY 2021: <ul style="list-style-type: none"> ○ Parker-Bouse (AZ) construct 15-mile segment of 230-kV double circuit transmission line and upgrade equipment at Bouse substation to improve reliability of service, improve safety, and reduce ongoing maintenance costs • Alternative financing (\$7,824,000) sought for the following projects in FY 2021: <ul style="list-style-type: none"> ○ Parker-Bouse (AZ) construct 15-mile segment of 230-kV double circuit transmission line and upgrade equipment at Bouse substation to improve reliability of service, improve safety, and reduce ongoing maintenance costs 	<ul style="list-style-type: none"> • Continue rehabilitation and construction required on WAPA’s transmission lines and terminal facilities to cost-effectively market and deliver clean Federal hydropower and promote a strong record of reliability and safety. • Address additional system reliability risk and operational problems. • Appropriations (\$2,220,000) are requested for the following projects in FY 2023: <ul style="list-style-type: none"> ○ Trinity-Weaverville-Lewiston (CA) upgrade rights-of-way for existing 17-mile segment of transmission line to reduce the risk of wildfires and increase reliability and safety of the surrounding community • Alternative financing (\$12,807,000) sought for the following projects in FY 2023: <ul style="list-style-type: none"> ○ Parker-Bouse (AZ) construct 15-mile segment of 230-kV double circuit transmission line and upgrade equipment at Bouse substation to improve reliability of service, improve safety, and reduce ongoing maintenance costs ○ Bouse-Kofa 161kV (AZ) rebuild of 75.6 miles of 161-kV transmission line to comply with NERC standards, increase reliability and reduce maintenance costs ○ Parker-Blythe 161-kV #2 Rebuild (AZ/CA) rebuild of 63.9 miles of 161-kV transmission 	<ul style="list-style-type: none"> • The increase in transmission line work reflects the year-to-year fluctuation in the timing of capital investments while maintaining a continued focus on upgrading and replacing aging and inadequate infrastructure to improve reliability and safety and reduce maintenance costs. Projects are individually prioritized within available resource levels which also contributes to year-to-year fluctuations in program levels.

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
	<p>line structure to increase reliability and reduce maintenance costs</p> <ul style="list-style-type: none"> ○ Blythe-Knob (CA) replacement of failed and deteriorating wood transmission line structures to increase reliability and reduce maintenance costs 	
<p><i>Substations (\$2,727,000)</i></p> <ul style="list-style-type: none"> • Continue construction, modification, and rehabilitation of WAPA’s substations to ensure power system reliability and stability. • Address additional system reliability risk and operational problems. • Appropriations (\$0) are not requested for projects in FY 2021 • Alternative financing (\$2,727,000) sought for the following projects in FY 2021: <ul style="list-style-type: none"> ○ Fort Thompson Substation (SD) transformer replacement due to age (50+ years) and high consequence of failure which could result in catastrophic failure, reliability, and customer outages ○ Maurine Substation (SD) aging (manufactured in 1962 and in service for 50+ years) transformer replacement to ensure reliability and mitigate risk of catastrophic failure ○ Sand Creek Tap (CO) installation of 3 breaker ring bus (power circuit breakers and line relays) to sectionalize the Erie-Hoyt-Willoby 115-kV transmission line and to increase reliability and reduce maintenance costs ○ Sioux City 2 Substation (IA) transformer replacement is needed due to deteriorating 	<p><i>Substations (\$22,801,000)</i></p> <ul style="list-style-type: none"> • Continue construction, modification, and rehabilitation of WAPA’s substations to ensure power system reliability and stability. • Address additional system reliability risk and operational problems. • Appropriations (\$4,100,000) are requested for the following projects in FY 2023: <ul style="list-style-type: none"> ○ Yellowtail Substation (MT) replacement of entire protection and control system, including control building, to increase reliability • Alternative financing (\$18,701,000) is being sought for projects in FY 2023 <ul style="list-style-type: none"> ○ Eagle Butte Substation (SD) replacement of existing single bus configuration with 115 kV ring bus to increase reliability and simplify maintenance procedures ○ Groton Substation (SD) transformer (40+ years) and control building replacement to reduce the risk of catastrophic failure, and increase reliability and safety ○ Philip Substation (SD) transformer replacement due to age (50+ years) and other asset management factors which could result in catastrophic failure, reliability, and customer outages 	<p><i>Substations (+\$20,074,000)</i></p> <ul style="list-style-type: none"> • The increase in substation work reflects the year-to-year fluctuation in the timing of capital investments while maintaining a continued focus on replacing aging and deteriorating equipment and facilities to provide for system reliability. Projects are individually prioritized within available resource levels which also contributes to year-to-year fluctuations in program levels.

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
<p>conditions creating an environmental hazard and will provide for increased reliability</p>	<ul style="list-style-type: none"> ○ Sand Creek Switching Station (CO) installation of 3 breaker ring bus (power circuit breakers and control panels) to sectionalize the Erie-Hoyt-Willoby 115-kV transmission lines and to increase reliability and safety ○ Stegall Substation (NE) replacement of existing main and transfer bus configuration with breaker and a half arrangement to increase reliability and reduce maintenance requirements 	

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
<p><i>Other (\$9,802,000)</i></p> <ul style="list-style-type: none"> • Appropriations (\$0) are not requested for projects in FY 2021 • Alternative financing (\$9,802,000) sought for the following projects in FY 2021: <ul style="list-style-type: none"> ○ Devils Lake Substation (ND) cold storage building will house critical equipment and materials to enable WAPA to better manage supply levels and be more efficient in maintenance and response to emergencies ○ Gila Substation (AZ) maintenance building replacement will provide climate-controlled crew meeting and workstation/workshop space, and vehicle/equipment storage to increase efficiency and reduce maintenance costs ○ Rapid City Substation (SD) maintenance building replacement (40+ years old) will accommodate crew quarters, shop areas, house vehicles, and provide equipment storage and enable WAPA to be more efficient in maintenance and response to emergencies ○ Substation service upgrades at Tracy substation (CA) to mitigate safety hazards and increase reliability 	<p><i>Other (\$9,361,000)</i></p> <ul style="list-style-type: none"> • Appropriations (\$2,650,000) are requested for the following projects in FY 2023: <ul style="list-style-type: none"> ○ Mead Substation (NV) roadway improvements to increase accessibility and safety ○ Mead Substation (NV) domestic water system improvements to increase reliability and safety • Alternative financing (\$6,711,000) sought for the following projects in FY 2023: <ul style="list-style-type: none"> ○ Cottonwood Substation (CA) control building replacement (age and excessive maintenance requirements) to increase service reliability and reduce maintenance costs ○ Folsom Substation (CA) station service equipment upgrades to mitigate safety hazards and increase reliability ○ Rapid City Substation (SD) maintenance building replacement (40+ years old) will accommodate crew quarters, shop areas, house vehicles, and provide equipment storage and enable WAPA to be more efficient in maintenance and response to emergencies ○ Yuma (AZ) retrofit and equip newly acquired maintenance building critical to supporting aged and deteriorating transmission system infrastructure and increasing reliability for key preference customers 	<p><i>Other (-\$441,000)</i></p> <ul style="list-style-type: none"> • The decrease in other investments reflects the year-to-year fluctuation in the timing of capital investments while maintaining a continued focus on replacing aging and deteriorating equipment and facilities to provide for system reliability. Projects are individually prioritized within available resource levels which also contributes to year-to-year fluctuations in program levels.

**Purchase Power and Wheeling
Funding (\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
Purchase Power and Wheeling					
Central Valley	318,235	318,235	298,092	-20,143	-6%
Pick-Sloan Missouri Basin and other Programs	167,655	167,655	327,313	+159,658	+95%
Subtotal, Purchase Power and Wheeling	485,890	485,890	625,405	+139,515	+29%
Alternative Financing Needed	-293,890	-293,890	-275,322	+18,568	-6%
Offsetting Collections	-192,000	-192,000	-350,083	-158,083	+82%
Total, Purchase Power and Wheeling (New Budget Authority)	0	0	0	0	0%

Construction, Rehabilitation, Operation & Maintenance Purchase Power and Wheeling

Description

The Purchase Power and Wheeling (PPW) subprogram continues to support WAPA's marketing efforts and delivery capability which spans a 1.3 million square mile area serving a diverse group of several hundred wholesale customers, including municipalities, cooperatives, public utility and irrigation districts, Federal and state agencies and Native American tribes. No appropriated budget authority is necessary.

For a historical perspective, WAPAs PPW subprogram is highly variable; it is affected by reservoir storage levels, annual and long-term drought conditions, downstream flow concerns due to icing, flooding, environmental, health and safety, recreation, irrigation, and navigation requirements. To illustrate the extent of the variability, WAPA PPW costs in FY 2008, an adverse water year, were nearly \$600 million and in FY 2021 costs were nearly \$570 million due to a single weather event and market volatility; whereas in FY 2019, a much-improved water year, costs were \$351 million. Year-to-year changes can be extensive, and during long-term drought events the increased purchase power requirements can last several years. The FY 2023 budget request reflects anticipated requirements utilizing current information on hydro conditions, generation, contractual commitments, and power pricing. Market prices across WAPA's service territory have dramatically increased over the last year. During the period of October through December 2021, WAPA's total purchased power was 1,481 GWh with an average price of \$44.85 per megawatt-hour (MWh), an increase of 60% over the same period in 2020 which was 1,450 GWh purchased for an average price of \$26.84 MWh.

WAPA has implemented a PPW risk mitigation strategy to ensure continuous operations during periods of significant drought. The strategy was developed consistent with existing authorities, and with the participation and support of WAPA power customers. Under this approach, WAPA retains receipts from the recovery of purchase power and wheeling expenses within the 'up to' amount specified by Congress. The receipts retained are available until expended and are available only for purchase power and wheeling expenses. FY 2021 obligations for PPW were \$361 million due to an extreme weather event in February and market volatility throughout the year. This resulted in utilization of \$169 million (44%) of the reserve balances in FY 2021.

WAPA received a \$500 million emergency appropriation through the Infrastructure Investment and Jobs Acts, providing near-term relief for immediate concerns regarding the reduced level of PPW reserves. Funds can be transferred from WAPA's CROM account to the Colorado River Basins Power Marketing Fund (CRBPMF) account as WAPA's Administrator determines is needed for purchase of power and transmission services per statute. The allocation of the IJJA funding will be prioritized in a manner that facilitates the restoration of PPW reserves in both the CROM and CRBPMF accounts.

Since WAPA's inception, the full cost of the PPW program has been included in the rate setting process. Through this process, and utilizing interim rate adjusting capabilities, all PPW costs are fully recovered through WAPA's rates.

Central Valley Project

WAPA continues to deliver on its contractual power commitments to customers under the Central Valley Project's Post 2004 Marketing Plan. The budget request assumes current full load service customers will continue to choose service from WAPA through "Custom Product" contractual agreements. WAPA also purchases power to support variable resource customers on a pass-thru basis. If project net generation is not sufficient, WAPA may also purchase to support project use load, First Preference Customer load, and sub-control area reserve requirements. As part of the Order 741, FERC promulgated guidance requiring RTO/ISOs to take physical title/ownership to the energy bought/sold in their respective markets, making it necessary for WAPA to acknowledge that customers receive the financial, and not the physical benefit of their Federal power allocations. In order to provide service in the state, WAPA is voluntarily participating in the California greenhouse gas cap-and-trade program which became effective January 1, 2013.

Pick-Sloan Missouri Basin and Other Programs

The budget request continues to support long-term firm power commitments to customers of the eastern and western divisions of the Pick-Sloan Missouri Basin Program, the Fryingpan-Arkansas Project, and the Parker-Davis Project

commensurate with the levels of average firm hydroelectric energy marketed by WAPA. The request also provides transmission support for the Pacific Northwest-Southwest Intertie Project. The total program estimates shown are based primarily on market pricing of short-term firm energy, negotiated transmission rates, and WAPA and generating agency's forecasts.

Purchase Power and Wheeling

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
Central Valley Project		
<p><i>Program Requirements (\$318,235,000)</i> The Purchase Power and Wheeling subprogram continues to support WAPA’s power marketing effort by providing for power purchases to firm the variable hydropower resource and securing transmission services as necessary to meet its contractual power delivery.</p>	<p><i>Program Requirements (\$298,092,000)</i> The Purchase Power and Wheeling subprogram continues to support WAPA’s power marketing effort by providing for power purchases to firm the variable hydropower resource and securing transmission services as necessary to meet its contractual power delivery.</p>	<p><i>Program Requirements (-\$20,143,000)</i> The decrease is attributed to -\$1.4M in anticipated purchase needs based on hydro generation estimates to meet contractual needs as well as a decrease in anticipated customer requirements. Amounts are for offsetting collections and alternative financing; no direct appropriations are requested for this activity.</p>
<p><i>Alternative Financing (-\$196,235,000)</i> Contractual arrangements made with customers provide opportunities for alternative financing of the purchase power requirements. Alternative financing methods include net billing, bill crediting, energy exchanges, and direct customer funding.</p>	<p><i>Alternative Financing (-\$177,479,000)</i> Contractual arrangements made with customers provide opportunities for alternative financing of the purchase power requirements. Alternative financing methods include net billing, bill crediting, energy exchanges, and direct customer funding.</p>	<p><i>Alternative Financing (+\$18,756,000)</i> Previously anticipated customer requirements offset by alternative financing has not materialized, resulting in the decrease.</p>
Pick-Sloan Missouri Basin		
<p><i>Program Requirements (\$167,655,000)</i> The Purchase Power and Wheeling subprogram continues to support WAPA’s power marketing effort by providing for power purchases to firm the variable hydropower resource and securing transmission services as necessary to meet its contractual power delivery.</p>	<p><i>Program Requirements (\$327,313,000)</i> The Purchase Power and Wheeling subprogram continues to support WAPA’s power marketing effort by providing for power purchases to firm the variable hydropower resource and securing transmission services as necessary to meet its contractual power delivery.</p>	<p><i>Program Requirements (+\$159,658,000)</i> The increase is attributed to energy imbalance market costs for ancillary services across WAPA’s service territory, as well as increased market pricing and purchase volumes forecasted based on lower hydro generation estimates. Amounts are for offsetting collections and alternative financing; no direct appropriations are requested for this activity.</p>

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
<p><i>Alternative Financing (-\$97,655,000)</i> Alternative financing methods negotiated with customers provide an offset to the total program receipt financing requirement. Alternative financing methods include net billing, bill crediting, energy exchanges, and direct customer funding.</p>	<p><i>Alternative Financing (-\$97,843,000)</i> Contractual arrangements made with customers provide opportunities for alternative financing of the purchase power requirements. Alternative financing methods include net billing, bill crediting, energy exchanges, and direct customer funding.</p>	<p><i>Alternative Financing (-\$188,000)</i> The slight increase in the offset is attributed to estimated transmission costs expected to be funded through alternative financing coming from WAPA's participation in markets (Southwest Power Pool). Amounts are for alternative financing. No direct appropriations are requested for this activity.</p>

Construction, Rehabilitation, Operation & Maintenance Program Direction

Overview

WAPA's Program Direction subprogram provides compensation and all related expenses for its workforce, including those employees that operate and maintain WAPA's high-voltage interconnected transmission system and associated facilities; those that plan, design, and supervise the construction of replacements, upgrades and additions (capital investments) to the transmission facilities; those that market the power and energy produced to repay annual expenses and capital investment; and those that administratively support these functions.

The Program Direction subprogram supports DOE's and WAPA's mission of operating and maintaining a resilient and secure energy grid by attaining and developing a critical highly skilled workforce of engineers, dispatchers, linemen, power system operators, and high voltage electricians. The Program Direction subprogram also includes the administrative staff, including those positions that monitor, detect and deter physical and cyber-attacks on WAPA's infrastructure.

WAPA trains its employees on a continuing basis in occupational safety and health regulations, policies and procedures, and conducts safety meetings at employee, supervisory and management levels to keep the safety culture strong. Accidents are reviewed to ensure lessons are learned and proper work protocol is in place.

In consultation with its customers, WAPA reviews required replacements and upgrades to its existing infrastructure to sustain reliable power delivery to its customers and to contain annual maintenance expenses. The timing and scope of these replacements and upgrades are critical to assure that WAPA's facilities do not become the "weak link" in the interconnected system. WAPA pursues opportunities to join with neighboring utilities to jointly finance activities, which avoid redundant facilities and result in realized cost savings and/or increased efficiencies for all participants.

**Program Direction
Funding (\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
Program Direction					
Salaries and Benefits	172,151	172,151	191,911	+19,760	+11%
Travel	10,658	10,658	10,610	-48	0%
Support Services	31,811	31,811	36,958	+5,147	+16%
Other Related Expenses	38,955	38,955	37,808	-1,147	-3%
Total, Program Direction	253,575	253,575	277,287	+23,712	+9%
Use of Alternative Financing	-48,546	-48,546	-54,868	-6,322	+13%
Use of Receipts from Colorado River Dam Fund	-6,510	-6,510	-7,955	-1,445	+22%
Offsetting Collections, Other Expenses	-145,010	-145,010	-171,661	-26,651	+18%
Use of Prior Year Balances	-12,800	-12,800	0	12,800	-100%
Total, Program Direction	40,709	40,709	42,803	+2,094	+5%
Federal FTEs	1,216	1,216	1,201	-15	-1%
Support Services					
Technical Support					
Economic and Environmental Analysis	9,631	9,631	15,995	+6,364	+66%
Total, Technical Support	9,631	9,631	15,995	+6,364	+66%
Management Support					
Automated Data Processing	13,024	13,024	11,645	-1,379	-11%
Training and Education	3,416	3,416	3,313	-103	-3%
Reports and Analysis, Management and General Administrative Support	5,740	5,740	6,005	+265	+5%
Total Management Support	22,180	22,180	20,963	-1,217	-5%
Total, Support Services	31,811	31,811	36,958	+5,147	+16%
Other Related Expenses					
Rent to GSA	2,431	2,431	2,200	-231	-10%
Communication, Utilities, Misc.	6,832	6,832	6,969	137	+2%
Printing and Reproduction	111	111	81	-30	-27%

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
Other Services	15,015	15,015	12,189	-2,826	-19%
Training	12	12	2	-10	-83%
Purchases from Gov. Accounts	1,544	1,544	1,285	-259	-17%
Operation and Maintenance of Equipment	4,785	4,785	6,784	+1,999	+42%
Supplies and Materials	2,077	2,077	2,285	+208	10%
Equipment	3,681	3,681	3,205	-476	-13%
Working Capital Fund	2,467	2,467	2,808	+341	+14%
Total, Other Related Expenses	38,955	38,955	37,808	-1,147	-3%

**Construction, Rehabilitation, Operation & Maintenance
Program Direction**

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Top Funding Level vs FY 2021 Enacted
Program Direction		
\$253,575,000	\$277,287,000	+\$23,712,000
Salaries and Benefits \$172,151,000	\$191,911,000	+\$19,760,000
Salary and benefits provide for Federal employees who construct and replace, operate and maintain and secure, on a continuing basis, WAPA's high-voltage interconnected transmission system. Salary and benefits fund those FTEs assigned to this account, including those salaries determined through negotiations.	Salary and benefits funding is for Federal employees who construct and replace, operate and maintain and secure, on a continuing basis, WAPA's high-voltage interconnected transmission system.	The salary and benefits reflect inflationary factors and higher negotiated baseline salaries for journeymen.
Travel \$10,658,000	\$10,610,000	-\$48,000
This activity funds all travel, and related expenses associated with WAPA's mission-related operation and maintenance activities, and those functions that support them.	Request funds all travel, and related expenses associated with WAPA's mission-related operation and maintenance activities, and those functions that support them.	Request reflects variabilities in scope and location associated with mission related operation and maintenance travel, and travel for cross-functional collaboration among various internal and external programs.
Support Services \$31,811,000	\$36,958,000	+\$5,147,000
Support Services funded in this category include information technology, job related training and education, engineering, miscellaneous advisory and reporting services, and general administrative support.	Request funds information technology, job related training and education, engineering, miscellaneous advisory and reporting services, and general administrative support services.	Increase reflects technical support needed for operations security and enterprise applications, with offsets in automated data processing.

Other Related Expenses \$38,955,000	\$37,808,000	-\$1,147,000
<p>Other related expenses include rental space, utilities, supplies and materials, telecommunications, information technology modernization (data/network), printing and reproduction, training tuition, and DOE's Working Capital Fund distribution. Rental space costs assume the General Services Administration's (GSA) inflation factor. Other costs are based on historical usage and actual cost of similar items.</p>	<p>Request funds rental space, utilities, supplies and materials, telecommunications, information technology modernization (data/network), printing and reproduction, training tuition, and DOE's Working Capital Fund distribution. Rental space costs assume the General Services Administration's (GSA) inflation factor. Other costs are based on historical usage and actual cost of similar items.</p>	<p>The primary decrease is attributable to other support services related to substation and transmission facility maintenance and slight decreases in rent, and equipment purchases; with offsetting increase in IT operations and maintenance services.</p>

**Falcon and Amistad Operating and Maintenance Fund
Funding (\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request
Gross	7,302	7,302	7,928
Offsets	-7,074	-7,074	-7,700
Net BA	228	228	228

Overview

The Falcon and Amistad Operating and Maintenance fund (Maintenance Fund) was established in the Treasury of the United States as directed by the Foreign Relations Authorization Act, FYs 1994 and 1995. The Maintenance Fund is administered by WAPA’s Administrator for use by the Commissioner of the U. S. Section of the International Boundary and Water Commission (IBWC) to defray administrative, O&M, replacement, and emergency costs for the hydroelectric facilities at the Falcon and Amistad Dams. IBWC owns and operates the U.S. portion of the projects, and Federal staff funded under this program continues to be allocated to the U.S. Section of IBWC by the Department of State. The Falcon and Amistad project supports WAPA’s program goals by providing power to rural electric cooperatives through WAPA. With the exception of monies received from the Government of Mexico, all revenues collected from the sale of electric power generated at the Falcon and Amistad Dams are credited to the Maintenance Fund. Monies received from the Government of Mexico are credited to the General Fund of the U.S. Treasury. Revenues collected in excess of operating expenses are used to repay, with interest, the cost of replacements and original investments. Full funding will support 24-hour/day operation and maintenance of the two power plants to ensure response to ever-changing water conditions, customer demand, and continual coordination with operating personnel of the Government of Mexico.

Highlights of the FY 2023 Budget Request

In FY 2023, WAPA’s request has been formulated to meet its power marketing and contractual power delivery obligations with continued high marks for reliability. Revenues collected from customers to recover the costs of the Federal Power Program will be sufficient to provide for FY 2023 planned expenses for the facilities operated by the IBWC. Also included in FY 2023 is the continuation of WAPA’s request to allow for U.S. customer(s) of the Falcon and Amistad Dams to contribute funds for use by the IBWC in fulfilling their duties in accordance with agreements between WAPA, IBWC, and the power customers. This will allow work to be accomplished using customer advances/alternative financing, a funding mechanism used throughout WAPA under the Contributed Funds Act, 43 USC 395. The customer contributed funds are planned to predominantly assist in capitalized replacement projects.

**Outyear Funding
(\$K)**

	FY 2023 Request	FY 2024	FY 2025	FY 2026	FY 2027
Falcon and Amistad Operating and Maintenance Fund Net BA	228	228	228	228	228

Major Outyear Priorities and Assumptions

Outyear funding levels for the Maintenance Fund total \$912,000 for FY 2024 through FY 2027. Maintenance Fund priorities include the following:

- Annual operations and maintenance expenses will be offset by revenues collected from the customer
- The annual \$228 thousand appropriation, along with customer advances, are necessary for capitalized replacement projects

**Falcon and Amistad Operating and Maintenance Fund
Funding (\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
Western Area Power Administration					
Falcon and Amistad Operating and Maintenance Fund	7,302	7,302	7,928	+626	+9%
Subtotal, Falcon and Amistad Operating and Maintenance Fund	7,302	7,302	7,928	+626	+9%
Offsetting Collections	-5,548	-5,548	-6,102	-554	+10%
Use of Prior Year Balances	0	0	0	0	0%
Alternative Financing	-1,526	-1,526	-1,598	-72	+5%
Total, Falcon and Amistad Operating and Maintenance Fund	228	228	228	0	0%

Falcon and Amistad Operating and Maintenance Fund

Description

The Falcon and Amistad Project consists of two international dams located on the Rio Grande River between Texas and Mexico. The United States and Mexico operate separate hydroelectric power plants on each side of the Rio Grande River. The power plants are independent and legislatively severable from the international reservoir storage dams. The Operating and Maintenance Fund was established in the Treasury of the United States and is administered by WAPA's Administrator for use by the Commissioner of the U.S. Section of the IBWC to defray administrative, O&M, replacement, and emergency costs for the hydroelectric facilities at the Falcon and Amistad Dams.

IBWC

O&M

Activities include salaries and benefits for the approximately 40 positions of the U.S. Section of the IBWC who operate and maintain the two power plants on a 24-hour/day basis, planned maintenance activities, required safety services, and emergency response to flood operations and/or equipment failure. O&M includes inspection and service of the HVAC and air compressor system, fire suppression systems, elevators, self-contained breathing apparatus, recharge and hydro-testing of fire extinguishers, calibration of test equipment, rebuild of electric motors, and repair of obsolete equipment when replacement parts are no longer available. Travel, training, communications, utilities, printing, and office supplies and materials for the IBWC employees and technical advisors is also funded by the O&M activity. The request includes essential training for employees to comply with standards of the Interagency Commission on Dam Safety, Occupational and Health Administration, and the National Dam Safety Act.

Capital Investment

WAPA, the IBWC, and the customer have collaboratively developed a rehabilitation work plan to address immediate and future infrastructure needs for the hydroelectric facilities. Future infrastructure needs will be appropriately planned and categorized by all parties through regularly scheduled progress reviews.

WAPA

Marketing, Contract, Repayment Studies

This activity funds power marketing, administration of power contracts, and preparation of rate and repayment studies. Based on accurate studies, staff ensures power revenues are set at an appropriate level to recover annual expenses and meet repayment schedules.

Falcon and Amistad Operating and Maintenance Fund

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
Falcon and Amistad Operating and Maintenance Fund \$7,302,000	\$7,928,000	+\$626,000
<i>IBWC O&M (\$5,470,000)</i> This activity funds the salaries and benefits for those employees assigned to the U.S. Section of the IBWC who operate and maintain the two power plants, equipment inspections and maintenance services, and travel, training, communications, utilities, printing, and office supplies/materials for the IBWC employees and technical advisors.	<i>IBWC O&M (\$6,041,000)</i> This activity funds the salaries and benefits for those employees assigned to the U.S. Section of the IBWC who operate and maintain the two power plants, equipment inspections and maintenance services, and travel, training, communications, utilities, printing, and office supplies/materials for the IBWC employees and technical advisors.	<i>IBWC O&M (+\$571,000)</i> The request reflects projects in the 10-year O&M work plan that was developed to address recommendations in the U.S. Army Corps of Engineers (USACE) inspection report completed in 2018. Projects planned for FY 2023 include sand blast and repaint of penstock unit 2 at Amistad, and 5-year USACE inspection at both facilities. Amounts are for offsetting collections; no direct appropriations are requested for this activity.
<i>IBWC Capital Investment (\$1,754,000)</i> This activity funds capital investment activities at the Falcon and Amistad hydroelectric facilities.	<i>IBWC Capital Investment (\$1,826,000)</i> This activity funds capital investment activities at the Falcon and Amistad hydroelectric facilities.	<i>IBWC Capital Investment (+\$72,000)</i> The request reflects projects in the 10-year capital work plan that was developed to address recommendations in the U.S. Army Corps of Engineers inspection report completed in 2018. Projects planned for FY 2023 include replacement of the fire alarm system at Amistad, and repair and re-insulate stator at Falcon generator.
<i>WAPA Marketing, Contracts, Repayment (\$78,000)</i> This activity funds power marketing, administration of power contracts, and preparation of rate and repayment studies.	<i>WAPA Marketing, Contracts, Repayment (\$61,000)</i> This activity funds power marketing, administration of power contracts, and preparation of rate and repayment studies.	<i>WAPA Marketing, Contracts, Repayment (-\$17,000)</i> The decrease is attributed to costs for WAPA's power repayment software ending in FY 2022. Amounts are for offsetting collections; no direct appropriations are requested for this activity.

**Colorado River Basins Power Marketing Fund
Funding (\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request
Gross	245,047	245,047	258,466
Offsets	-266,447	-266,447	-267,034
Net BA	-21,400	-21,400	-8,568

Overview

WAPA operates and maintains the transmission system for the projects funded in this account to ensure an adequate supply of reliable electric power in a clean and environmentally safe, cost-effective manner. The Colorado River Basins Power Marketing Fund Program (CRBPMF) is comprised of the Colorado River Storage Project, including the Dolores and Seedskaelee and Olmsted Projects, and the Fort Peck Project. WAPA is responsible for construction, maintenance, and operation of facilities for transmitting and marketing the electrical energy generated in these power systems.

Highlights of the FY 2023 Budget Request

In FY 2023, WAPA’s request has been formulated to meet its power marketing and contractual power delivery obligations with continued high marks for reliability. Revenues collected from customers to recover the costs of the Federal Power Program will be sufficient to provide for WAPA’s FY 2023 planned expenses for the power systems in the CRBPMF. While severe drought conditions persist in the Colorado River basin, the budget assumes reservoirs will remain at levels supporting continued hydropower generation capability. The Budget anticipates a return to Treasury of \$8.6 million from the WAPA CRBPMF account.

**Outyear Funding
(\$K)**

	FY 2023 Request	FY 2024	FY 2025	FY 2026	FY 2027
CRBPMF Net BA	-8,568	0	0	0	0

Major Outyear Priorities and Assumptions

Outyear funding levels for CRBPMF total \$0 for FY 2024 through FY 2027. CRBPMF priorities include the following:

- Meeting power marketing and contractual power delivery obligations
- Addressing impact of severe drought and revenue concerns

**Colorado River Basins Power Marketing Fund
Funding (\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
Colorado River Basins Power Marketing Fund					
Equipment, Contracts and Related Expenses					
Supplies, Materials and Services	13,330	13,330	12,728	-602	-5%
Purchase Power Costs	116,673	116,673	119,236	+2,563	+2%
Capitalized Equipment	15,449	15,449	16,863	+1,414	+9%
Interest/Transfers	3,368	3,368	3,405	+37	+1%
Generating Agency Activities	25,911	25,911	26,695	+784	+3%
Total, Equipment, Contracts and Related Expenses	174,731	174,731	178,927	+4,196	+2%
Program Direction	70,316	70,316	79,539	+9,223	+13%
Total, Operating Expenses from new authority	245,047	245,047	258,466	+13,419	+5%
Offsetting Collections Realized	-266,447	-266,447	-267,034	-587	0%
Total, Obligational Authority	-21,400	-21,400	-8,568	+12,832	-60%

Colorado River Basins Power Marketing Fund Equipment, Contracts and Related Expenses

Description

WAPA's equipment, contracts and related expenses are necessary to operate and maintain this activity. Revenues from the sale of electric energy, capacity and transmission services replenish the fund and are available for expenditure for operation, maintenance, power billing and collection, purchase power and wheeling, interest, emergencies, and other power marketing expenses.

Supplies, Materials and Services

This activity funds the procurement of supplies, materials, and services necessary to respond to routine and emergency situations in the transmission system. Estimates are based on recent actual costs for supplies needed to maintain transmission system reliability.

Purchase Power Costs

This activity funds the procurement of electrical power, transmission capacity and wheeling services on the open market. The request anticipates the results of continued low-steady-flow tests conducted at Glen Canyon Dam, as required by the Glen Canyon Dam Environmental Impact Statement Record of Decision. Additionally, the request includes obligation authority to accommodate replacement power purchases for customers served by the Colorado River Storage Project. The replacement power purchases, a provision of the Salt Lake City Area Integrated Projects electric power contracts, are made at the request of power customers at times when WAPA lacks sufficient generation to meet its full contract commitment. The funds for the replacement power purchases are advanced by the requesting customers prior to the purchase.

Capitalized Equipment

This activity funds the procurement of capitalized equipment including circuit breakers, transformers, relays, switches, transmission line equipment, microwave, SCADA, and other communication and control equipment to assure reliable service to WAPA's customers. Replacement and upgrade of aged power system components are crucial to system reliability and transmission services.

Transmission line estimates include the purchase of poles, crossarms, conductors, fusion splicers, line switches, overhead ground wire and hardware for the continued transmission line rebuilds. This estimate includes line rebuilds with the anticipated completion of 10 miles a year.

Planned substation estimates include upgrades, replacement of breakers and circuit switches, and replacement of transformers, test equipment, as well as other aged equipment at various substations. WAPA cyclically replaces older electro-mechanical relays with microprocessor relays. The microprocessor relays assist in finding faults faster in order to restore service more efficiently to customers. Other miscellaneous items required for substation replacements include surge arrestors, batteries and chargers, and monitoring equipment.

Planned movable capitalized property estimates include replacements of special purpose trucks, replacement of generators to maintain the reliability and backup power to the communications system, and replacement of outdated test and recording equipment. Other estimates include the replacement of test equipment used to troubleshoot the new digital microwave radio system. Ongoing replacement is also planned for aging information technology support systems and routers. Other requests include funding for other minor enhancements that provide for the ease of maintenance, protection of equipment and materials, and environmental compliance.

Interest/Transfers

This activity funds interest payments to the U.S. Treasury. Estimates are based on Power Repayment Studies for the Projects funded in this account.

Generating Agency Activities

This activity direct funds the U.S. Army Corps of Engineers for operation and maintenance and procurement of capitalized equipment for the Fort Peck Power Plant. Estimates are based on recent actual costs for supplies needed to maintain generating system reliability.

Colorado River Basins Power Marketing Fund

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
Equipment and Related Expenses \$174,731,000	\$178,927,000	+\$4,196,000
<i>Supplies, Materials & Services (\$13,330,000)</i> This activity funds the procurement of supplies, materials, and services necessary to respond to routine and emergency situations in the transmission system.	<i>Supplies, Materials & Services (\$12,728,000)</i> This activity funds the procurement of supplies, materials, and services necessary to respond to routine and emergency situations in the transmission system.	<i>Supplies, Materials & Services (-\$602,000)</i> This is primarily attributed to decrease in services for IT Maintenance Services and Non-Capitalized Equipment.
<i>Purchase Power Costs (\$116,673,000)</i> This activity funds the procurement of electrical power, transmission capacity and wheeling services on the open market. Purchase power cost estimates are based on 24-month study factors including water cycle, snowpack, and market rates.	<i>Purchase Power Costs (\$119,236,000)</i> This activity funds the procurement of electrical power, transmission capacity and wheeling services on the open market. Purchase power cost estimates are based on 24-month study factors including water cycle, snowpack, and market rates.	<i>Purchase Power Costs (+\$2,563,000)</i> The increase is primarily attributed to purchase power requirements and costs. Severe drought conditions continue to persist.
<i>Capitalized Equipment (\$15,449,000)</i> This activity funds the procurement of capitalized equipment including circuit breakers, transformers, relays, switches, transmission line equipment, microwave, SCADA, and other communication and control equipment to assure reliable service to WAPA's customers.	<i>Capitalized Equipment (\$16,863,000)</i> This activity funds the procurement of capitalized equipment including circuit breakers, transformers, relays, switches, transmission line equipment, SCADA, and other communication and control equipment to assure reliable service to WAPA's customers.	<i>Capitalized Equipment (+\$1,414,000)</i> Request reflects increases in Communication, Movable Property and Transmission Line Replacements with an offset in Substation Replacements.

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
<p><i>Interest/Transfers (\$3,368,000)</i> This activity funds interest payments to the U.S. Treasury. Estimates are based on Power Repayment Studies for the Projects funded in this account.</p>	<p><i>Interest/Transfers (\$3,405,000)</i> This activity funds interest payments to the U.S. Treasury. Estimates are based on Power Repayment Studies for the Projects funded in this account.</p>	<p><i>Interest/Transfers (+\$37,000)</i> The slight increase in interest/transfers is due to the ongoing annual debt service payments made on capital repayments as calculated in the Power Repayment Study.</p>
<p><i>Generating Agency Activities (\$25,911,000)</i> This activity direct funds the U.S. Army Corps of Engineers operation and maintenance and procurement of capitalized equipment for the Fort Peck Power Plant.</p>	<p><i>Generating Agency Activities (\$26,695,000)</i> This activity direct funds the U.S. Army Corps of Engineers for operation and maintenance and procurement of capitalized equipment for the Fort Peck Power Plant.</p>	<p><i>Generating Agency Activities (+\$784,000)</i> The increase reflects scheduled replacements for capitalized communication, substation equipment and maintenance for the Fort Peck Power Plant.</p>

**Colorado River Basins Power Marketing Fund
Program Direction**

Overview

Program Direction provides the Federal staffing resources and associated costs required to provide overall direction and execution of the Colorado River Basins Power Marketing Fund. WAPA trains its employees on a continuing basis in occupational safety and health regulations, policies, and procedures, and conducts safety meetings at employee, supervisory and management levels to keep the safety culture strong. Accidents are reviewed to ensure lessons are learned and proper work protocol is in place.

Highlights of the FY 2023 Budget Request

The FY 2023 request provides for the continuation of WAPA's revolving fund activities related to Program Direction at the level necessary to meet mission requirements. The requested level of 308 FTE is critical to WAPA's mission activities.

Colorado River Basins Power Marketing Fund
Program Direction
Funding (\$K)

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
Program Direction					
Salaries and Benefits	49,157	49,157	55,423	+6,266	+13%
Travel	3,396	3,396	3,428	+32	+1%
Support Services	7,091	7,091	9,032	+1,941	+27%
Other Related Expenses	10,672	10,672	11,656	+984	+9%
Total, Program Direction	70,316	70,316	79,539	+9,223	+13%
Federal FTEs	294	294	308	14	+5%
Support Services					
Technical Support					
Engineering and Technical Services	1,573	1,573	2,858	+1,285	+82%
Total, Technical Support	1,573	1,573	2,858	+1,285	+82%
Management Support					
Automated Data Processing	2,749	2,749	3,225	+476	+17%
Training and Education	1,011	1,011	1,027	+16	+2%
Reports and Analyses, Management and General Administrative Support	1,758	1,758	1,922	+164	+9%
Total, Management Support	5,518	5,518	6,174	+656	+12%
Total, Support Services	7,091	7,091	9,032	+1,941	+27%
Other Related Expenses					
Rent to GSA	694	694	180	-514	-74%
Communication, Utilities, Misc.	1,854	1,854	2,466	+612	+33%
Printing and Reproduction	24	24	24	0	0%
Other Services	4,046	4,046	4,145	+99	+2%
Training	15	15	11	-4	-27%
Purchases from Gov. Accounts	319	319	364	+45	+14%
Operation and Maintenance of Equipment	1,374	1,374	2,008	+634	+46%

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
Supplies and Materials	596	596	676	+80	+13%
Equipment	1,057	1,057	949	-108	-10%
Working Capital Fund	693	693	833	+140	+20%
Total, Other Related Expenses	10,672	10,672	11,656	+984	+9%

**Colorado River Basins Power Marketing Fund
Program Direction**

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
Program Direction \$70,316,000	\$79,539,000	+\$9,223,000
Salaries and Benefits \$49,157,000	\$55,423,000	+\$6,266,000
Salary and benefits support General Schedule employees, as well as those salaries determined through negotiations. This activity provides for Federal employees who operate and maintain the Program’s high-voltage integrated transmission system and associated facilities; plan, design, and supervise the replacement (capital investments) to the transmission facilities; and market the power and energy produced to repay annual expenses and capital investment.	Salary and benefits support General Schedule employees, as well as those salaries determined through negotiations. This activity provides for Federal employees who operate and maintain the Program’s high-voltage integrated transmission system and associated facilities; plan, design, and supervise the replacement (capital investments) to the transmission facilities; and market the power and energy produced to repay annual expenses and capital investment.	The increase in salaries and benefits supports the increased level of FTE charging to this account for maintenance and capital activities. The salary and benefits also capture inflationary factors.
Travel \$3,396,000	\$3,428,000	+32,000
This activity funds personnel travel and per diem expenses for essential mission-related activities, including the maintenance of transmission facilities. The request includes estimates for the rent/lease of GSA vehicles and other transportation.	This activity funds personnel travel and per diem expenses for essential mission-related activities, including the maintenance of transmission facilities. The request includes estimates for the rent/lease of GSA vehicles and other transportation.	The slight increase in travel reflects continued effort to use technological capabilities to decrease travel requirements with slight offset for inflationary factors.
Support Services \$7,091,000	\$9,032,000	+\$1,941,000
Support services funded in this category include information technology support, warehousing, computer-aided drafting/engineering, job related training and education, and general administrative support.	Support services funded in this category include information technology support, warehousing, computer-aided drafting/engineering, job related training and education, and general administrative support.	The increase is primarily due to services that support engineering and technical infrastructure activities.

Other Related Expenses \$10,672,000	\$11,656,000	+\$984,000
Other related expenses include, but are not limited to, DOE's working capital fund distribution, space, utilities and miscellaneous charges, printing and reproduction, training tuition, maintenance of office equipment, supplies and materials, telecommunications, and office equipment to include computers.	Other related expenses include, but are not limited to, DOE's working capital fund distribution, space, utilities and miscellaneous charges, printing and reproduction, training tuition, maintenance of office equipment, supplies and materials, telecommunications, and office equipment to include computers.	The increase to this activity is primarily driven by general services for transmission, substation and communication operation and maintenance, utilities, and working capital fund.

**Transmission Infrastructure Program
Funding (\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request
Gross	12,454	12,454	12,642
Offsets	-12,454	-12,454	-12,642
Net BA	0	0	0

Overview

WAPA established the Transmission Infrastructure Program (TIP) and Office to implement Title III, Section 301 of the Hoover Power Plant Act of 1984 as amended by the American Recovery and Reinvestment Act of 2009 (Recovery Act), which provided WAPA borrowing authority of up to \$3.25 billion for the purposes of: (1) constructing, financing, facilitating, planning, operating, maintaining, or studying construction of new or upgraded electric power transmission lines and related facilities with at least one terminus within the area served by WAPA; and (2) delivering or facilitating the delivery of power generated by renewable energy resources constructed or reasonably expected to be constructed after the Recovery Act’s date of enactment.

TIP is expected to be an administratively self-sustaining program that relies on funding arrangements with project developers. When developers seek technical assistance, WAPA collects funds from the project developers to support development of eligible projects and to cover the overhead and administrative costs of the program. Reimbursable or Advance Funding Agreements with project developers are required prior to initiating efforts to evaluate the technical and financial merits of a potential project to ensure the full cost of services delivered are paid by project beneficiaries. For projects that are approved for use of WAPA’s borrowing authority, the authority to cover the full amount of the loan is apportioned at the outset and cash is borrowed periodically from the Department of the Treasury (Treasury) as needed. The debt is repaid according to the financial agreement terms and conditions of each project.

As mandated, the TIP program is completely separate and distinct from WAPA’s power marketing program. TIP has one project currently using the borrowing authority for a total of \$91 million in loan authority obligated. All administrative costs for TIP are offset by advanced financing and collections. WAPA is not requesting any new annual appropriated funds for TIP.

Highlights of the FY 2023 Budget Request

Construction and project debt estimates are based on preliminary information provided by the Project Sponsors/Proponents.

Note: Values for TIP are based on early stages of project development, forecasts of current projects, estimates of future project development, and departmental collaboration, which are subject to change. While based on knowledge and experience to date, these estimates are to be regarded as non-binding representations that are determined by Project Sponsors/Proponents.

**Outyear Funding
(\$K)**

	FY 2023 Request	FY 2024	FY 2025	FY 2026	FY 2027
TIP Net BA, Mandatory	200,000	1,675,000	-500,000	-325,000	-725,000
TIP Net BA, Discretionary	0	0	0	0	0

Major Outyear Priorities and Assumptions

Outyear funding levels for TIP total \$125,000,000 net mandatory and \$0 net discretionary for FY 2024 through FY 2027. TIP priorities include the following:

- Mandatory amounts provide borrowing authority, offset by repayment of debt, for anticipated projects currently under development with project sponsors/proponents
- Discretionary amounts provide advance funding, offset by collections from project developers, for projects being evaluated for technical and financial merit prior to application for borrowing

**Transmission Infrastructure Program
Funding (\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
Mandatory, Direct Budget Authority					
New Borrowing Authority	100,000	100,000	200,000	+100,000	+100%
Use of Collections from Projects	5,000	5,000	6,000	+1,000	+20%
Collections from Projects	-5,000	-5,000	-6,000	-1,000	+20%
Total Mandatory	100,000	100,000	200,000	+100,000	+100%
Repayment of Borrowing Authority	0	0	0	0	0%
Federal FTEs (Mandatory)	0	0	0	0	0%
Discretionary, Reimbursable Budget Authority					
Program Direction	12,454	12,454	12,642	+188	+2%
Advance Funding	-2,025	-2,025	-1,750	+275	-14%
Offsetting Collections	-10,429	-10,429	-10,892	-463	+4%
Total Discretionary	0	0	0	0	0%
Federal FTEs (Discretionary)	11	11	12	+1	+9%
Total, Transmission Infrastructure Program					
Total, Federal FTEs	11	11	12	+1	+9%

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
Direct Budget Authority \$100,000,000	\$200,000,000	+\$100,000,000
New Borrowing Authority \$100,000,000	\$200,000,000	+\$100,000,000
Estimated new projects approved for use of WAPA's borrowing authority.	Estimated new projects approved for use of WAPA's borrowing authority.	The increase is due to higher estimated borrowing authority for projects from Project Sponsors/Proponents.
Collections from Projects \$5,000,000	\$6,000,000	+\$1,000,000
Collections in this category are from excess capacity offtake from borrowing authority funded projects.	Collections in this category are from excess capacity offtake from borrowing authority funded projects. TIP estimates collecting \$6 million in excess capacity from the ED5 energized line in FY 2023. These collections will be used for costs associated with operating and maintaining those lines generating the capacity, and interest and principal payments.	TIP estimates collecting \$6 million in excess capacity from the ED5 energized line. These collections will all be obligated and used for costs associated with operating and maintaining those lines generating the capacity, and interest and principal payments.
Repayment of Borrowing Authority \$0	\$0	\$0
This activity represents repayments to Treasury from projects for principal.	This activity represents repayments to Treasury from projects for principal.	There are no anticipated repayments to Treasury.

Transmission Infrastructure Program Program Direction

Overview

WAPA's TIP Program Direction subprogram provides compensation and all related expenses for its workforce, including those employees that are directly assigned to the program as project management, technical experts, finance and administration; those that provide expertise in land acquisition, engineering and environmental compliance; those that provide legal counsel; and those that administratively support these functions.

All TIP program direction costs are expected to be offset by customers over time, either through advanced funding agreements or offsetting collections. Advanced funding is provided to TIP from project applicants who use TIP's expertise in the development of their project. The advanced funding agreements fund federal and/or contract staff working on the development of a specific project. Other sources of funds include the overhead rate applied to each active project; service charges; interest rate differentials; and the advance collection of Project Proposal and Business Plan Proposal evaluation expenses. These collections offset the costs of administering the TIP program and provide a risk mitigation reserve.

The Program Direction subprogram supports DOE and WAPA missions, specifically in facilitating delivery of renewable energy resources to market.

**Program Direction
Funding (\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
Transmission Infrastructure					
Salaries and Benefits	1,225	1,225	1,569	+344	+28%
Travel	60	60	55	-5	-8%
Support Services	756	756	906	+150	+20%
Other Related Expenses	10,413	10,413	10,112	-301	-3%
Subtotal, Program Direction	12,454	12,454	12,642	+188	+2%
Use of Offsetting Collections	-12,454	-12,454	-12,642	-188	+2%
Total, Program Direction	0	0	0	0	0%
Federal FTEs (Mandatory Direct)	0	0	0	0	0%
Federal FTEs (Discretionary Reimbursable)	11	11	12	+1	+9%
Federal FTEs (Total TIP)	11	11	12	+1	+9%
Support Services					
Technical Support					
Engineering and Technical Services	358	358	720	+362	+101%
Total, Technical Support	358	358	720	+362	+101%
Management Support					
Automated Data Processing	285	285	127	-158	-55%
Training and Education	13	13	15	+2	+15%
Reports and Analyses, Management and General Administrative Support	100	100	44	-56	-56%
Total Management Support	398	398	186	-212	-53%
Total, Support Services	756	756	906	+150	+20%
Other Related Expenses					
Communications; Utilities; Miscellaneous Charges	20	20	27	+7	+35%
Services from Non-Federal and Federal Sources	5,389	5,389	2,581	-2,808	-52%
Supplies and Materials	4	4	4	0	0%
Interest Payments	5,000	5,000	7,500	+2,500	+50%
Total, Other Related Expenses	10,413	10,413	10,112	-301	-3%

Program Direction

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
Program Direction \$12,454,000	\$12,642,000	+188,000
Salaries and Benefits \$1,225,000	\$1,569,000	+344,000
Salary and benefits provide for Federal employees that are directly assigned to the TIP program as project management, technical experts, finance and administration; those that provide expertise in land acquisition, engineering and environmental compliance; those that provide legal counsel; and those that administratively support these functions. FTE assigned to this account charge TIP's mandatory as well as discretionary funding accounts.	Salary and benefits provide for Federal employees that are directly assigned to the TIP program as project management, technical experts, finance and administration; those that provide expertise in land acquisition, engineering and environmental compliance; those that provide legal counsel; and those that administratively support these functions. FTE assigned to this account charge TIP's mandatory as well as discretionary funding accounts.	The increase of salary and benefits reflects direct and indirect support provided to this account and captures inflationary factors.
Travel \$60,000	\$55,000	-\$5,000
Planned essential travel supports TIP's mission related activities. TIP supports efficient spending initiatives and is cognizant of travel costs associated with general program operations. TIP focuses on using alternative means to conduct meetings and training sessions where appropriate.	Planned essential travel supports TIP's mission related activities. TIP supports efficient spending initiatives and is cognizant of travel costs associated with general program operations. TIP focuses on using alternative means to conduct meetings and training sessions where appropriate.	This is a decrease in travel. Efforts to use video conferencing, web-based meetings, and similar technologies in lieu of traveling are ongoing, where appropriate. Travel supports TIP's effort towards its mission related travel in collaboration with potential project sponsors.
Support Services \$756,000	\$906,000	+\$150,000
Support services funded in this category include technical support costs directly associated with TIP projects; to include Environmental, Lands, Engineering, and Project Management activities. Also, within this category are costs to cover legal and financial support activities to include financial modeling, outside legal counsel for contract review, policy issues and legislative concerns.	Support services funded in this category include technical support costs directly associated with TIP projects; to include Environmental, Lands, Engineering, and Project Management activities. Also, within this category are costs to cover legal and financial support activities to include financial modeling, outside legal counsel for contract review, policy issues and legislative concerns.	The increase in support services is due to the growth in technical support associated with project management and stage of development of projects given revised work scope demands.
Other Related Expenses \$10,413,000	\$10,112,000	-\$301,000

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
Other related expenses include communications, utilities, training, depreciation, WAPA overhead rates, supplies and materials, services from Federal and Non-Federal sources and interest loan payments.	Other related expenses include communications, utilities, training, depreciation, WAPA overhead rates, supplies and materials, services from Federal and Non-Federal sources and interest loan payments.	The decrease is due to a decrease in services from Non-Federal sources offset by an increase in anticipated loan interest payments.

Estimate of Gross Revenues ¹

	(Dollars in Thousands)		
	FY 2021 ²	FY 2022	FY 2023
Boulder Canyon Project	67,257	92,219	94,844
Central Valley Project	272,091	407,203	416,800
Falcon-Amistad Project	7,654	8,178	7,435
Fryingpan-Arkansas Project	20,185	18,103	20,801
Pacific Northwest-Southwest Intertie Project	52,877	41,251	39,636
Parker-Davis Project	90,002	83,928	87,581
Pick-Sloan Missouri Basin Program	629,197	541,252	589,475
Provo River Project	497	76	518
Washoe Project	390	446	446
Salt Lake City Area Integrated Projects	243,084	174,124	175,144
Other	279,292	0	0
Total, Gross Revenues	1,662,526	1,366,779	1,432,681

¹ Amounts for FY 2022 and FY 2023 are based on the FY 2020 Final Power Repayment Studies (PRS).

² FY 2021 amounts are actuals from the preliminary annual financial reports. For Central Valley Project, FY 2021 amounts reported exclude contractual pass-through purchase power arrangements which are included in the PRS estimates. The 'Other' FY 2021 amounts shown represent WAPA activities reported in the financials that are not reimbursable through the power and transmission rate-setting process and are not forecasted through the PRS.

Estimate of Proprietary Receipts

(Dollars in Thousands)

	FY 2021 Actual	FY 2022	FY 2023
Mandatory Receipts			
Falcon Amistad Maintenance Fund	319	0	0
Sale and Transmission of Electric Power, Falcon and Amistad Dams	600	1,000	1,000
Sale of Power and Other Utilities Not Otherwise Classified	0	10,000	10,000
Sale of Power–WAPA–Reclamation Fund	269,943	64,621	81,254
Total, Mandatory Receipts	270,862	75,621	92,254
Discretionary Receipts			
Offsetting Collections from the Recovery of Power Related Expenses – WAPA CROM	192,000	192,000	350,083
Less Purchase Power and Wheeling Expenses	-192,000	-192,000	-350,083
Subtotal, WAPA CROM Recovery of Power Related Expenses	0	0	0
Offsetting Collections from the Recovery of Annual Expenses – WAPA CROM	169,754	169,754	200,841
Less Operating and Maintenance expenses	-24,744	-24,744	-29,180
Less Program Direction Expenses	-145,010	-145,010	-171,661
Subtotal, WAPA CROM Recovery of Annual Expenses	0	0	0
Offsetting Collections from the recovery of power related expenses – Falcon and Amistad	5,548	5,548	6,102
Less Operating and Maintenance expenses	-5,548	-5,548	-6,102
Subtotal, Falcon and Amistad Recovery of Power Related Expenses	0	0	0
Total, Discretionary Receipts	0	0	0
Total, Proprietary Receipts	270,862	75,621	92,254

**Western Area Power Administration
Estimate of Offsetting Collections for Reimbursable Work and Work-for-Others**

(Dollars in Thousands)

	FY 2021	FY 2022	FY 2023
Construction, Rehabilitation, Operation and Maintenance (CROM)			
Offsetting Collections for Reimbursable Work ¹			
Alternative Financing			
Operations and Maintenance	6,297	7,122	7,641
Construction and Rehabilitation	20,353	31,090	38,219
Purchase Power and Wheeling (PPW)	293,890	273,677	275,322
Program Direction	48,546	51,849	54,868
Subtotal, Alternative Financing	369,086	363,738	376,050
Offsetting Collections not anticipated for obligation in budget year	2,936	188,792	47,137
Less PPW net billing, bill crediting, energy exchange	-233,400	-242,646	-238,591
Offsetting collections from Colorado River Dam Fund	8,378	9,116	9,404
Subtotal, Offsetting Collections for Reimbursable Work	147,000	319,000	194,000
Offsetting Collections for Reimbursable Work-for-Others ²	601,000	337,000	212,000
Total, Offsetting Collections for Reimbursable	748,000	656,000	406,000

¹ WAPA relies significantly on alternative financing arrangements with customers to finance much of its direct mission work on a reimbursable basis.

² WAPA has partnering arrangements with many power customers and Federal agencies to perform electrical systems operations, maintenance, construction, purchase power, and transmission services on a reimbursable basis.

Bonneville Power Administration (Bonneville, BPA)

Expenditures from the Bonneville Power Administration Fund, established pursuant to Public Law 93–454, are approved for the Colville Tribes Resident Fish Hatchery Expansion, Chief Joseph Hatchery Water Quality Project, and Umatilla Hatchery Facility Project, and, in addition, for official reception and representation expenses in an amount not to exceed \$5,000: Provided, that during fiscal year 2023, no new direct loan obligations may be made.

Explanation of Changes

Language is included to allow expenditures from the Bonneville Power Administration Fund for the Colville Tribes Resident Fish Hatchery Expansion, the Chief Joseph Hatchery Water Quality Project, and the Umatilla Hatchery Facility Project.

The proposed appropriations language restricts new direct loans in FY 2023 as in FY 2022. This bill language is drafted consistent with the Credit Reform Act of 1990.

Please Note - The FY 2023 Bonneville Power Administration Congressional Budget submission includes FY 2022 budget estimates.

Bonneville operates under a business-type budget under the Government Corporation Control Act, 31 U.S.C 9101-10 and on the basis of the self-financing authority provided by the Federal Columbia River Transmission System Act of 1974 (Transmission Act) (Public Law 93-454). Bonneville has authority to borrow from the U.S. Treasury under the Transmission Act, and the Pacific Northwest Electric Power Planning and Conservation Act of 1980 (Northwest Power Act) (Public Law 96-501) for acquisition of energy conservation, renewable and other power resources, investment in fish facilities, and other purposes, the American Recovery and Reinvestment Act of 2009 (Public Law 111-5), the Infrastructure Investment and Jobs Act of 2021 (Section 40110, Public Law 117-58) and other legislation. Authority to borrow from the U.S. Treasury is available to Bonneville on a permanent, revolving basis. The principal amount of U.S. Treasury borrowing outstanding at any time may not exceed \$17.70 billion. The obligation of the \$10.0 billion in additional borrowing authority that is made available to the Bonneville Administrator under Section 40110 of Public Law 117-58, shall not exceed \$6 billion by fiscal year 2028. Bonneville finances its approximate \$4.4 billion annual cost of operations and investments by primarily using its power and transmission revenues, and proceeds of borrowing from the U.S. Treasury.

This budget has been prepared in accordance with the Statutory Pay-As-You-Go Act (PAYGO) of 2010. Under PAYGO, all Bonneville budget estimates are treated as mandatory and are not subject to the discretionary caps included in the Budget Control Act of 2011. These estimates support activities that are separate from discretionary activities and accounts. Thus, any changes to Bonneville estimates cannot be used to affect any other budget categories, which have their own dollar caps. Because Bonneville's obligations are and will be incurred under pre-existing legislative authority, Bonneville is not subject to a "pay-as-you-go" test regarding its revision of current-law funding estimates.

Bonneville Power Administration

Funding Profile by Subprogram ^{1/}

(Accrued Expenditures in Thousands of Dollars)

	Fiscal Year			
	2021 Actuals	2022 Original ^{1/2}	2022 Revised ^{1/2}	2023 Proposed
Capital Investment Obligations				
Associated Project Costs ^{3/}	201,575	264,120	264,120	281,260
Fish & Wildlife	41,897	43,000	43,000	43,000
Subtotal, Power Services	243,473	307,120	307,120	324,260
Transmission Services	347,592	497,086	475,770	497,160
Capital Equipment & Bond Premium	26,098	22,002	21,994	21,047
Total, Capital Obligations ^{3/}	617,163	826,208	804,885	842,468
Expensed and Other Obligations				
Expensed	2,892,478	2,733,825	2,730,236	2,756,169
Projects Funded in Advance ^{5/}	63,292	55,775	55,542	61,166
Total, Obligations	3,572,934	3,615,807	3,590,662	3,659,803
Capital Transfers (cash)	805,799	696,000	699,000	734,000
Bonneville Total (Oligations & Capital Transfers)	4,378,732	4,311,807	4,289,662	4,393,803
Bonneville Net Outlays	(254,000)	(324,967)	(407,880)	(309,363)
Full-time Equivalentents (FTEs) ^{4/}	2,825	3,000	3,000	3,000

Public Law Authorizations include:

Bonneville Project Act of 1937, Public Law No. 75-329

Federal Columbia River Transmission System Act of 1974, Public Law No. 93-454

Regional Preference Act of 1964, Public Law No. 88-552

Flood Control Act of 1944, Public Law No. 78-543

Pacific Northwest Electric Power Planning and Conservation Act of 1980 (Northwest Power Act), Public Law No. 96-501

Outyear Funding Profile by Subprogram ^{1/}

(Accrued Expenditures in Thousands of Dollars)

	Fiscal Year			
	2024	2025	2026	2027
Capital Investment Obligations				
Associated Project Costs ^{3/}	300,000	306,850	313,647	320,466
Fish & Wildlife	30,000	25,000	15,000	15,000
Subtotal, Power Services	330,000	331,850	328,647	335,466
Transmission Services	584,056	664,307	647,685	540,696
Capital Equipment & Bond Premium	19,703	19,040	17,369	21,272
Total, Capital Obligations ^{3/}	933,759	1,015,197	993,701	897,435
Expensed and Other Obligations				
Expensed	2,868,496	2,914,635	2,986,041	3,052,506
Projects Funded in Advance ^{5/}	47,529	35,115	35,363	36,680
Total, Obligations	3,849,784	3,964,946	4,015,105	3,986,621
Capital Transfers (cash)	744,000	709,000	747,000	758,000
Bonneville Total (Oligations & Capital Transfers)	4,593,784	4,673,946	4,762,105	4,744,621
Bonneville Net Outlays	(181,745)	(72,169)	(38,258)	(87,060)
Full-time Equivalent (FTEs) ^{4/}	3,000	3,025	3,075	3,125

These notes are an integral part of this table.

- ^{1/} This budget has been prepared in accordance with PAYGO. Under PAYGO all Bonneville budget estimates are treated as mandatory and are not subject to the discretionary caps included in the Budget Control Act of 2011. These estimates support activities that are separate from discretionary activities and accounts. Thus, any changes to Bonneville estimates cannot be used to affect any other budget categories which have their own dollar caps. Because Bonneville's obligations are and will be incurred under pre-existing legislative authority, Bonneville is not subject to a "pay-as-you-go" test regarding its revision of current-law funding estimates.
- ^{2/} Original estimates reflect Bonneville's FY 2022 OMB Budget Submission. Revised estimates, consistent with Bonneville's annual near-term funding review process, provide notification to the Administration and Congress of updated capital and expense funding levels for FY 2022. The BPA estimates in this budget are consistent with the BP-22 IPR.
- ^{3/} Includes infrastructure investments to address the long-term electric power related needs of the Northwest and significant changes affecting Bonneville's power and transmission markets.
- ^{4/} As of 11/03/2021, DOE HR staff has reported FY 2021 BPA's FTE usage at 2,825.
- ^{5/} In this instance, Projects Funded in Advance represents prepayment of Power customers' bills reimbursed by future credits and third party non-federal financing for Conservation initiatives. Also this category includes those facilities and/or equipment where Bonneville retains control or ownership which are funded or financed by a third party, revenue, or with reserves, either in total or in part.

Additional Notes

Capital funding levels reflect external factors such as the significant changes affecting West Coast power and transmission markets, along with planned infrastructure investments designed to address the long-term needs of the region.

Cumulative advance amortization payments as of the end of FY 2021 are \$6,230 million.

Refer to 16 USC Chapters 12B, 12G, 12H, and Bonneville's other organic laws, including P.L. 100-371, Title III, Sec. 300, 102 Stat. 869, July 19, 1988, regarding Bonneville's ability to obligate funds.

Budget estimates included in this budget are subject to change due to rapidly changing economic and institutional conditions in the evolving electric utility industry.

Net Outlay estimates are based on current cost savings to date and anticipated cash management goals. They are expected to follow anticipated management decisions throughout the rate period that, along with actual market conditions, will impact revenues and expenses. Actual Net Outlays are volatile and are reported in Report on Budget Execution and Budgetary Resources (SF-133). Actual Net Outlays could differ from estimates due to changing market conditions, streamflow variability, continued restructuring of the electric industry, and other reasons.

Revenues, included in the Net Outlay formulation, are calculated consistent with cash management goals and assume a combination of adjustments. Assumed adjustments include the use of a combination of tools, including upcoming rate adjustment mechanisms, a net revenue risk adjustment, debt service refinancing strategies and/or short-term financial tools to manage net revenues and cash. Some of these potential tools will reduce costs rather than generate revenue, causing the same Net Outlay result. Adjustments for depreciation and 4(h)(10)(C) credits of the Northwest Power Act are also assumed.

FY 2021 Net Outlays are calculated using Bonneville's audited actuals. FYs 2022 to 2027 Net Outlays are based on BP-22 IPR assumptions and an escalation factor from using the FY 2019 Whitebook Loads and Resources Report.

FTE outyear data are estimates and may change. Bonneville is facing a dynamic and changing energy marketplace and operations while, at the same time, many of its employees are eligible to retire in the near future. It is important that Bonneville continue to attract and retain skilled individuals to meet the growing demands of a competitive and rapidly changing industry. Accordingly, FTE estimates may need to be adjusted in the future.

Amounts in tables and schedules may not add to totals due to rounding.

Major Outyear Considerations

Bonneville's outyear estimates reflect ongoing efforts to achieve its long-term mission and strategic direction. The outyear estimates are developed with consideration and support of Bonneville's multi-year performance targets that lay out the course for achieving Bonneville's long-term objectives. Outyear capital investment levels support Bonneville's infrastructure program, hydro efficiency program, and its fish and wildlife mitigation projects.

Bonneville continues to incorporate the various aspects of the Energy Policy Act of 2005 related to its business, in particular the energy supply, conservation, and new energy technologies for the future that are highlighted in the legislation.

Bonneville provides electric power services, transmission services, and acquires energy efficiency throughout the Pacific Northwest. Bonneville serves a 300,000 square mile area including Oregon, Washington, Idaho, western Montana, and small parts of eastern Montana, California, Nevada, Utah, and Wyoming with a population of about 14 million people. Bonneville markets the electric power produced from 31 federal hydro projects in the Pacific Northwest owned by the U.S. Army Corps of Engineers (Corps) and the U.S. Department of Interior, Bureau of Reclamation (Reclamation). In addition, Bonneville also acquires power from non-federal generating resources, including the power from a nuclear power plant, the Columbia Generating Station (CGS). Bonneville uses the power from its non-federal purchases and the federal projects, collectively the Federal Columbia River Power System (FCRPS), primarily to meet the Administrator's long term firm power sales contract obligations. Bonneville currently maintains and operates 15,108 circuit miles of transmission lines, 262 substations, and associated power system control and communications facilities over which this electric power is delivered. Bonneville has capital and similar leases for certain transmission facilities. Bonneville also supports the protection and enhancement of fish and wildlife, and encourages the development of conservation and energy efficiency, as part of meeting its obligations to supply power and balance the economic and environmental benefits of the FCRPS.

The organization of Bonneville's FY 2023 Budget reflects Bonneville's business services basis for utility enterprise activities. Bonneville's two major areas of activity on a consolidated budget and accounting basis are Power Services and Transmission Services and include their related administrative costs. Power Service's costs include line items for Fish and Wildlife, Energy Efficiency, Residential Exchange Program, Federal Projects Operations & Maintenance (O&M) Costs, and the Northwest Power and Conservation Council (Planning Council or Council). Transmission Service's costs include line items for engineering, operations, and maintenance for Bonneville's electric transmission system.

Bonneville's mission as a public service organization is to create and deliver federal power and transmission services at cost as it acts to assure its customers in the Pacific Northwest have the following: (1) an adequate, efficient, economical, and reliable power supply; (2) an open access transmission system that is adequate for integrating and transmitting power from federal and non-federal generating units, providing service to Bonneville's customers, providing interregional interconnections, and maintaining electrical reliability and stability; and (3) mitigation of the impacts on fish and wildlife from the federally owned hydroelectric projects from which BPA markets power.

Bonneville's vision is to be an engine of the Northwest's economic prosperity and environmental sustainability by advancing a Northwest power and transmission system that is a national leader in providing high reliability, low rates consistent with sound business principles, responsible environmental stewardship, and accountability to the region, all through a commercially successful business. Bonneville pursues this vision consistent with its four core values of safety, trustworthy stewardship, collaborative relationships, and operational excellence.

Legislative History

The Bonneville Project Act of 1937 provides the statutory basis for Bonneville's power marketing responsibilities and authorities. In 1974, passage of the Federal Columbia River Transmission System Act (Transmission Act) applied provisions of the Government Corporation Control Act (31 U.S.C. §§ 9101-9110) to Bonneville. The Transmission Act provides Bonneville with "self-financing" authority, establishes the Bonneville Fund (a permanent, indefinite appropriation) allowing Bonneville to use its revenues from electric power and transmission ratepayers to fund all programs without further appropriation, and authorizes Bonneville to sell bonds to the U.S. Treasury. As of the end of FY 2021, Bonneville had revolving U.S. Treasury borrowing authority of \$7.7 billion of which approximately \$2.1 billion remained available to be drawn. Section 40110 of the Infrastructure Investment and Jobs Act (Public Law 117-58), enacted on November 15, 2021, provides Bonneville \$10 billion in additional permanent borrowing authority.

The 1980 enactment of the Pacific Northwest Electric Power Planning and Conservation Act (Northwest Power Act) expanded Bonneville's authorities, obligations, and responsibilities. The purposes of the act include encouraging development of electric energy conservation to meet regional electric power loads placed on Bonneville; the development of renewable energy resources within the Pacific Northwest; to assure the Northwest an adequate, efficient, economical, and reliable power supply; to promote regional participation and planning; and to protect, mitigate, and enhance the fish and wildlife of the Columbia River and its tributaries. The Northwest Power Act also established a revised statutory

framework for Bonneville's administrative rate-setting process and established judicial review of Bonneville's final actions in the U.S. Court of Appeals for the Ninth Circuit.

Strategic Direction

In early 2018, Bonneville released its 2018-2023 Strategic Plan which describes how it will operate in a commercially successful manner while meeting its statutory obligations. Bonneville developed this strategic plan after listening to customers and constituents express their interests in Bonneville's commercial viability and ability to meet those obligations. The strategic plan was developed at the point when Bonneville was midway through 20-year firm power sales contracts with its preference power customers. Those customers continue to evaluate how Bonneville will be positioned to meet their needs beyond the terms of their current contracts. The strategic plan is framed by these goals:

- Strengthen financial health
- Modernize assets and system operations
- Provide competitive power products and services
- Meet transmission customer needs efficiently and responsively

In 2020, Bonneville reassessed and reconfirmed its strategic goals and objectives. In its Strategic Plan Update, Bonneville added a fifth goal, "Value people and deliver results," which captures the agency's commitment to its workforce and the people it serves.

Financial Plan

In 2018, Bonneville also completed its Financial Plan. The Financial Plan is designed to maintain and enhance the Agency's financial strength. The 2018 Financial Plan establishes a guiding framework for decision-making by defining the financial constraints within which Bonneville operates, and outlines Bonneville's financial health objectives. The plan contains Bonneville's statutory obligations and authorities, financial policies and established practices, and financial health objectives.

BPA is currently working on a refresh of its Financial Plan. The scope of the Financial Plan refresh is focused on debt management, debt capacity and to a limited extent, capital. In September 2021, BPA began engaging customers and constituents through a series of workshops that will continue through July of 2022. BPA will issue its updated Financial Plan by the end of fiscal year 2022 as is required by Section 40110(b) of P.L. 117-58, the Infrastructure [Investment and Jobs Act](#), enacted on November 15, 2021.

Pursuant to the Financial Plan, Bonneville adopted two specific policies. The Financial Reserves Policy (FRP) defines the level of financial reserves Bonneville and each business line should hold; how to build financial reserves when they fall below a prescribed level; and a process to consider repurposing financial reserves when they exceed a prescribed level. The policy provides a framework to help ensure Bonneville maintains a minimum of 60 days cash on hand for each business line and 90 days for the Agency.

The Leverage Policy creates a strategy to reduce Bonneville's total debt compared to its assets in an effort to strengthen financial health and flexibility. Reducing debt will help Bonneville lower its interest costs, support its strong credit rating, maintain access to borrowing from the U.S. Treasury, and improve financial strength and flexibility.

Fiscal Year 2022 and 2023 Rates

BPA adopted its power and transmission rates for Fiscal Years 2022 and 2023 in July 2021 and submitted its adopted rates to the Federal Energy Regulatory Commission (FERC) for final approval. The average BP-22 power rate decreased by 2.5 percent compared to BP-20 rates. For transmission rates, the weighted average increase is approximately 5.4 percent for the two-year rate period. The power rates and transmission rates will be in effect through September 30, 2023.

Financial Mechanisms

Bonneville's program is treated as mandatory and nondiscretionary. Bonneville is "self-financed" from its own revenues and does not rely on annual appropriations from Congress. Under the Transmission Act, Bonneville funds the expense

portion of its budget and repays the federal investment with revenues from electric power and transmission sales. Bonneville's revenues fluctuate for a variety of reasons, including in response to variations in market prices for fuels and stream flow in the Columbia River System caused by variations in weather conditions and fish mitigation needs.

In the FY 2023 Budget, the term Bonneville "bonds" refers to the debt instruments under which Bonneville receives advances of funds from the U.S. Treasury. This reference is consistent with section 13(a) of the Transmission Act, which defines "bonds" as all bonds, notes, and other evidence of indebtedness issued and sold by Bonneville to the U.S. Treasury.

Bonneville and the U.S. Treasury have a comprehensive banking arrangement that covers Bonneville's short- and long-term federal borrowings. This provides Bonneville with the ability to borrow from the U.S. Treasury to finance capital investments and, on a short-term basis, to cover Northwest Power Act-related operating expenses. This latter ability provides Bonneville with much needed liquidity to help manage within-year cash flow needs and mitigate risk. Access to this use of U.S. Treasury borrowing authority has been incorporated into and relied upon in Bonneville's rate-setting process.

As of June 2021, debt instruments issued by non-federal entities but secured by payment and other financial commitments provided by Bonneville received the following credit ratings: Moody's at Aa2 with a stable outlook, Standard & Poor's at AA- with a stable outlook, and Fitch at AA with a stable outlook.

U.S. Treasury Payments and Budget Overview

Bonneville's FY 2021 payment to the U.S. Treasury was approximately \$1,049 million. This was the 38th consecutive year that Bonneville made its scheduled payments to the U.S. Treasury on time and in full. The payment included \$806 million in principal, which included \$412 million in early retirement of U.S. Treasury debt, \$187 million for interest, \$22 million in irrigation assistance payments, and \$33 million in pension and post-retirement benefits. Total credits applied toward Bonneville's U.S. Treasury payment were about \$111 million for FY 2021. The majority of these credits are established and applied under section 4(h)(10)(C) of the Northwest Power Act. The FYs 2022 and 2023 U.S. Treasury payments are currently estimated at \$935 million and \$971 million, respectively. The FY 2022 and 2023 4(h)(10)(C) credits are estimated to be \$94.2 million and \$94.2 million, respectively.

Estimates of interest and amortization levels for outyear U.S. Treasury payments are included in the FY 2022-2023 final transmission and power rates. Bond and Appropriations Interest will continue to be revised based on upcoming capital investments and debt management actions. These estimates may change due to revised capital investment plans and actual U.S. Treasury borrowing. In recent years, Bonneville has made amortization payments in excess of those scheduled in its FERC-approved rate filings resulting in a balance of advance repayment. The cumulative balance of advance amortization payments as of the end of FY 2021 was in excess of \$6.2 billion.

Bonneville has direct funding arrangements to fund the power-related portion of O&M and capital investments at the Corps of Engineers and Bureau of Reclamation facilities as well as the O&M costs of the U.S. Fish and Wildlife Service Lower Snake River Compensation Plan facilities. Direct funded FCRPS capital costs, which had been funded exclusively through appropriations to the Corps of Engineers and Bureau of Reclamation prior to the initiation of direct funding, are now funded primarily from the proceeds of bonds issued by Bonneville to the U.S. Treasury. Certain power prepayments have also been a source of funds for direct funding. Bonneville's aggregate direct funding provided for capital and O&M was \$590.2 million in FY 2021.

Starting in FY 2014, Bonneville and Energy Northwest, the Washington state joint operating agency that owns and operates the Columbia Generating Station nuclear plant, have been working together to implement a new phase of integrated debt management for their combined total debt portfolios. The debt service of these portfolios is borne by Bonneville and recovered from Bonneville ratepayers through Bonneville's rates. Energy Northwest-related debt, as refinanced under this effort, is called Regional Cooperation Debt.

Bonneville manages its overall debt portfolio, which includes both debt that is issued by non-federal entities and secured by Bonneville's financial commitments ("Non-Federal Debt"), and Bonneville's repayment obligations to the United States

Treasury, to meet the objectives of: (i) minimizing the cost to Bonneville's ratepayers, (ii) maximizing Bonneville's access to its lowest cost capital sources to meet future capital needs, and (iii) maintaining sufficient financial flexibility to meet Bonneville's financial requirements.

The most recent efforts have included the issuance of Net Billed Bonds to refund outstanding Net Billed Bonds in Fiscal Year 2014 through Fiscal Year 2020. These refinancings were known as the initial phase of "Regional Cooperation Debt" which have enabled Bonneville to repay, earlier than would otherwise occur, Federal Appropriations Repayment Obligations. The initial phase of Regional Cooperation Debt refinancings achieved significant interest savings of approximately \$2.8 billion that is expected to be achieved over the life of the repaid debt.

Similar to the initial phase, the second phase of Regional Cooperation Debt refinancings would have the effect of freeing up amounts in the Bonneville Fund which otherwise would have been used to fund the repayment of the principal of the refunded Net Billed Bonds, which will instead be used to make payments to reduce the outstanding principal amount of bonds issued by Bonneville to the United States Treasury. Bonneville estimates that the aggregate potential principal amount of refinancing Net Billed Bonds that could be issued in Fiscal Year 2021 through Fiscal Year 2030 could approach \$3.5 billion.

Power Prepayment Program

Bonneville undertook a Power Prepayment Program in FY 2013 under which all Bonneville preference customers had an opportunity to submit formal offers to provide lump-sum payments to Bonneville as prepayments of a portion of their power purchases through September 30, 2028, the termination date of their current Long-Term Regional Dialogue Power Sales Contracts. Bonneville accepted power prepayments from four preference customers, as described below.

Upon Bonneville's receipt of the agreed-to, lump-sum prepayments, the selected preference customers became entitled to future portions of their electricity from Bonneville without further payment. The power prepayments are and will be recognized in the customers' future power bills from Bonneville as fixed, equal monthly prepayment credits. In effect, the amount of electricity that is prepaid may vary by month, depending on Bonneville's power rates and rate schedules that apply to electricity purchases by the prepaying customers in the related month. Because this is structured as a variable amount of prepayment and not as a fixed-price/fixed-amount type of prepayment, Bonneville maintains flexibility to establish rates for the electric power that is prepaid.

As a result of the FY 2013 Prepayment solicitation, Bonneville received \$340 million in prepayments, which Bonneville is using to fund needed FCRPS investments. The aggregate prepayment credits are set at \$2.55 million per month through FY 2028.

Depending on a variety of factors it is possible that Bonneville may seek to implement later phases of the Power Prepayment Program in connection with future FCRPS hydroelectric investment needs.

Asset Management

The foundation of Bonneville's value is the base of the generating resources from which it markets electricity, and Federal transmission assets it owns and operates. Bonneville utilizes an Asset Management Program based on The Institute of Asset Management (IAM's) conceptual model that aligns with the International Organization of Standardization (ISO) 55000 Series and Publically Available Specification (PAS) 55 standards. Investments are created, selected, and executed based on a strategy to apply best-practice industry standards to manage the lifecycle costs of Federal assets. This is central to maintaining the long-term value and reliability of the power and transmission systems. Achieving these objectives for power requires collaborative, long-term planning with Bonneville's Federal partners, the Corps of Engineers and Bureau of Reclamation. Through the Asset Investment Excellence Initiative, the three agencies are establishing a long term asset investment plan, applying prioritization tools to inform investment decisions to ensure the long term affordability and reliability of the hydropower assets.

Bonneville Power Administration operates within a complex environment that requires asset management tradeoffs. Bonneville's business decisions consider five dimensions of risk: financial, reliability, compliance, safety and environmental.

Reliability and safety remain Transmission priorities. Transmission’s asset management capability is continually maturing to maximize the value of its assets and help BPA maintain competitive advantage in the marketplace, enable industry change and deliver on public responsibilities; as well as maintain financial strength through the management of lifecycle costs.

Infrastructure Investments

The FCRPS is one of the nation’s largest nearly carbon-free power systems and preserving and enhancing the value of the FCRPS for the future continues to be a major Bonneville focus. Bonneville’s ongoing prioritization and execution of capital investment in transmission and FCRPS generation assets is the foundation for delivering clean, low-cost power to support the communities and economies of the region well into the future.

Bonneville continues to assess needed infrastructure investments in the Pacific Northwest to meet transmission capacity and reliability needs and continues to support a competitive wholesale market in the Western Interconnection, which encompasses 14 western states, two Canadian provinces, and one Mexican state.

Bonneville signed two agreements to participate with two investor-owned utilities in the environmental work and permitting for a transmission project, the proposed Boardman-to-Hemingway 500kV line; the initial agreements were executed in FY 2012 and subsequently amended in FY 2018. Participation in this preliminary review keeps Bonneville’s options open for serving its six southeast Idaho preference customers following the termination of legacy transmission service agreements. Bonneville has not made a decision to co-develop or purchase capacity in this project. On January 17, 2014, Public Law 113-76 was enacted, which provided Bonneville with expenditure authority approval to construct or participate in the construction of a transmission line to southeast Idaho, should Bonneville decide to continue pursuing that service arrangement.

Bonneville continues to evaluate additional transmission investments and alternative non-wires solutions across the Pacific Northwest to improve reliability and support both load and renewable generation needs. Bonneville makes use of certain alternative capital financing mechanisms, in addition to or in lieu of the use of its U.S. Treasury borrowing authority, to sustain funding for its infrastructure investment requirements. These approaches include revenue and financial reserves financing some amount of either or both power and transmission investments, or seeking, when feasible, third-party financing sources. See the BP-5 Potential Third Party Financing Transparency table in the budget schedules section of this document.

In 2019, Bonneville and a partner customer utility completed another innovative addition to system transmission capabilities that reflected Bonneville’s strategic objective to meet transmission customer needs more efficiently and responsively. The customer utility, Lower Valley Energy, approached Bonneville with a proposal to finance and complete the Hooper Springs Transmission Project, planned for construction by Bonneville to continue service to the utility. Bonneville had completed project design and siting processes. With Lower Valley’s assumption for the costs and final construction of the project, Bonneville was able to preserve Treasury borrowing authority and lease operating rights for service over the project.

Bonneville plays a key role in advancing energy efficiency across the region consistent with its statutes, including developing and promoting related technologies, and exploring demand-side management opportunities.

Bonneville is making disciplined technology innovation investments and looking to apply new operational and market mechanisms that enhance the reliability, efficiency, and flexibility of system operations.

Senate Passage and Presidential Enactment of the Infrastructure Investment and Jobs Act

In November 2021, the Senate passed, and on November 15, 2021 the President signed/enacted the Infrastructure Investment and Jobs Act of 2021 into federal law (Public Laws 117-58). Section 40110 of the Act provides an additional \$10 billion in additional permanent borrowing authority to Bonneville “...to assist in the financing of the construction, acquisition and replacement of the Federal Columbia River Power System and to implement the authority of the Administrator of the Bonneville Power Administration.”

Revised Transmission Tariff

In 2019, Bonneville adopted a broad regional settlement of a new transmission tariff, which included terms and conditions that would apply to all of Bonneville's customers. The Tariff sets forth the process Bonneville may use to make future modifications to it and positions the region to take advantage of opportunities in the rapidly changing industry as well as further its objectives for improving the agency's commercial performance.

Bonneville opened its TC-22 tariff proceeding in December 2020 to propose modifications to its Tariff. The TC-22 tariff proceeding ran concurrently with the BP-22 rates proceeding and was completed in July 2021.

Grid Modernization

Bonneville continues a cross-agency grid modernization initiative. Bonneville's reliance on legacy systems and non-standard commercial practices are costly to maintain and have led to Bonneville being conservative in its power and transmission operations, planning, and marketing. Bonneville's strategic objective is to modernize federal power and transmission systems and their supporting technology. BPA's Grid Modernization initiative includes 35 projects designed to increase automation, improve accuracy and enhance visibility into how the federal power and transmission systems are functioning in real time, to ultimately enhance the optimization, resilience and reliability of the grid. The program includes upgrades to metering technology, outage management systems and other operational tools that improve visibility and accuracy in BPA's operations.

In September 2019, Bonneville signed a Western EIM Implementation Agreement with the California Independent System Operator to begin work on projects that need to be completed to allow BPA to start EIM operations. Bonneville consulted its customers and constituents in the implementation of its plan to join the EIM through regular public workshops. The rate and tariff issues were included in the TC-22 and BP-22 cases, which were completed in July 2021.

BPA made its final decision to join the EIM on Sept. 27, 2021, when it released the Final EIM Close-out Letter. The letter concluded the extensive assessment and public process conducted through all five phases of the EIM decision process. BPA will continue public engagement with customers and constituents as it prepares for market participation and after operations begin.

Integrating Regional Transmission Planning

Bonneville participates in the NorthernGrid regional planning organization. Bonneville's 2018-2023 Strategic Plan included the objective of pursuing a single planning region in order to consolidate regional planning efforts and reduce duplication. In support of that objective, Bonneville worked together with other entities to scope and develop a new, single regional planning organization. The result of that effort is NorthernGrid. NorthernGrid is an association of member utilities that offers a forum for coordination of regional transmission planning activities. Participation in NorthernGrid facilitates Bonneville's efforts to meet transmission customer needs efficiently and responsibly through coordination of transmission planning across a broad spectrum of participants and a larger footprint. It includes participation by both FERC-jurisdictional and non-jurisdictional entities.

Regional Resource Adequacy

Bonneville continues to forecast that it has adequate power resources to meet its long-term contractual obligations to supply its regional firm power customers' demands in all foreseeable conditions. Recent regional forecasts, however, have shown that the Pacific Northwest as a whole is nearing periods of times of the year when regional power supplies may not be adequate to meet demand. Bonneville is joining other regional utilities through the Northwest Power Pool to create a regional resource adequacy program. This effort, referred to as the Western Resource Adequacy Program (WRAP) initiative, seeks to develop a program that is based on voluntary participation with binding commitments to ensure that the region maintains a balance of supplies and demand in a very high percentage of likely conditions. On September 29, 2021, Bonneville committed to participating in the non-binding forward showing phase (Phase 3A) of the WRAP. Bonneville continues to engage with its customers and regional leaders to gain more information about the binding program and to develop a better understanding of the business case and principles for Bonneville's potential participation.

The Columbia River System Operations

In 2020, the U.S. Army Corps of Engineers, Bureau of Reclamation and Bonneville Power Administration completed an updated environmental impact statement (EIS) on the Columbia River System operations (CRSO) and configurations for 14 federal projects in the interior Columbia Basin. The last comprehensive system EIS was completed in 1997. In the updated CRSO EIS, the three agencies prepared a reasonable range of alternatives for long-term system operations and evaluated the potential environmental and socioeconomic impacts on a number of system purposes, including flood risk management, irrigation, power generation, navigation, fish and wildlife, cultural resources and recreation.

The on-going action that requires evaluation under NEPA is the long-term coordinated management of the System projects. An underlying need to which the co-lead agencies responded is reviewing and updating the management of the System, including evaluating measures to avoid, offset, or minimize impacts to resources affected by the management of the System in the context of new information and changed conditions in the Columbia River basin. In addition, the co-lead agencies responded to the Opinion and Order issued by the U.S. District Court for the District of Oregon such that this EIS evaluated how to ensure that the prospective management of the System is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of designated critical habitat, including evaluating mitigation measures to address impacts to listed species.

The co-lead agencies released a draft EIS in February 2020, beginning a 45-day public comment period. Due to state and Federal measures to prevent the spread of the COVID-19 virus, public workshops that had been scheduled for comment were conducted by conference calls in March and April. The public comment period closed on April 13, 2020 and the co-lead agencies began analysis and response to over 58,000 comments received in that period. The co-lead agencies released a final record of decision in September 2020. Regional parties subsequently gave notice of their intention to challenge the CRSO EIS in court.

On Oct. 21, 2021, the Administration announced a short-term agreement on operations of the federal Columbia River System multiple purpose projects. The agreement pauses litigation over the selected alternative in the CRSO EIS Record of Decision.

Fish and Wildlife Program Overview

Bonneville remains committed to funding its share of the region's efforts to protect and mitigate Columbia River Basin fish and wildlife affected by the construction and operations of the FCRPS. To the extent possible, Bonneville integrates actions to protect species listed for protection under the Endangered Species Act (ESA) in response to relevant FCRPS Biological Opinions (BiOPs) with the Fish and Wildlife Program of the Northwest Power and Conservation Council. Implementation of these efforts involve significant collaboration with Pacific Northwest states, Indian tribes, local communities and other Federal agencies.

Included with the budget schedules section of this document is the current tabulation of Bonneville's fish and wildlife costs from FY 2012 through FY 2021.

The Columbia River Treaty

The U.S. Government reached consensus on a high-level position for negotiations of the post-2024 future of the Columbia River Treaty in June 2015 and received authorization to negotiate with Canada on the Columbia River Treaty in October 2016. Government Affairs Canada notified the United States State Department in December 2017 of Canada's mandate to negotiate the Columbia River Treaty with the United States. Negotiations began in spring 2018 and continue to date. Both the U.S. Department of State and Canadian negotiators have discussed shared objectives and exchanged information on flood risk management, hydropower and ecosystem considerations.

Wildfire Risk Mitigation

In 2020, Bonneville released its Wildfire Mitigation Plan to reduce the risk of BPA transmission lines and other assets from sparking wildfires, and to protect BPA lines and assets from the threat of wildfires. The plan incorporated wildfire mitigation into Transmission Services' asset management planning strategy. In 2021, Bonneville updated the plan to add a public safety power shutoff (PSPS) procedure to further mitigate the risk of fire igniting from its transmission lines. PSPS is

proactive de-energization of transmission lines and facilities based on a number of factors, including extreme weather like high winds, other environmental conditions, and asset condition.

COVID-19 Response

Beginning in March 2020, Bonneville responded to the expanding COVID-19 pandemic by instructing all non-mission critical operating personnel to telework for an indefinite period of time. Bonneville suspended transmission construction projects and limited field operations to critical work. As local health directives permitted, Bonneville resumed construction and maintenance activities. In June 2020, Bonneville completed an expedited rate proceeding to suspend its Financial Reserve Policy surcharge to provide its public power preference customers about \$3 million per month of rate relief for the remainder of FY 2020 and a total of \$30 million for FY 2021. BPA has made a number of FCRPS self-financed expenditures to respond to the COVID-19 pandemic to keep our employees safe and reliably continue power and transmission operations.

Radio Spectrum Communications

Bonneville's wireless communication system is used to operate and control critical national transmission grid infrastructure in a reliable, secure, and safe manner. Bonneville's communication systems are designed to meet strict reliability/availability objectives required by the North American Electric Reliability Corporation (NERC) and Western Electricity Coordinating Council (WECC) standards. Concerning proper spectrum stewardship, Bonneville designs highly efficient radio systems that use minimal radio frequency (RF) channel bandwidths to meet critical mission needs. However, in certain circumstances, efficiently designed spectrum radio systems will require broad RF channels and/or lower state RF modulation schemes to meet existing and future requirements in order to meet operational and reliability/availability objectives.

In order to meet Bonneville's mission/operational requirements, RF communication equipment approved for system use goes through a rigorous evaluation and testing process. RF spectrum efficiency factors are considered during the evaluation/testing period. RF terminal equipment approved for use is normally purchased directly from vendors and is not typically supplied through a Request for Proposal process.

Bonneville's operational telecommunications and other capital equipment and systems are acquired using Bonneville's self-financing and procurement authorities. The Bonneville budget includes a system-wide electric reliability performance indicator, consistent with NERC rules, to track and evaluate performance.

Bonneville may share temporarily available spare capacity on its RF communication system with other government agencies (both Federal and State), and with other electric utilities in the region whose power systems interconnect with Bonneville. Non-critical administrative traffic is typically supported by commercial carrier enterprises. However, to meet the NERC and WECC electrical bulk transmission requirements, Bonneville exclusively operates highly critical transmission control traffic over its private telecommunication system as Bonneville has no control over the reliability/availability of the commercial enterprise or on how quickly critical operational control circuits are restored to active service during an interruption.

For high-capacity communication system applications, Bonneville considers and operates non-spectrum dependent alternatives such as fiber optic cable infrastructure systems.

During FY 2014, Bonneville began upgrading the Very High Frequency (VHF) land mobile system and installing a number of digital Synchronous Optical Network (SONET) rings typically consisting of fiber segments in combination with point-to-point microwave hops operating in the 4 GHz and 7/8 GHz bands. These various telecommunication systems operate within Bonneville's approximate 300,000 square mile regional utility service territory (Oregon, Washington, Idaho, western Montana) with the majority of the RF infrastructure located in low population-rural areas.

The FCRPS hydroelectric projects, owned by the Corps of Engineers and Bureau of Reclamation, also utilize federal radio spectrum to preserve very high operational telecommunications and power system reliability.

In FY 2014, Bonneville completed work costing approximately \$40 million, funded through the Spectrum Relocation Fund, to relocate its operational telecommunication systems from the 1710-55 MHz radio spectrum bands to alternative federal radio spectrum bands, part of the AWS-1 Federal Spectrum Relocation. In accordance with Federal law, Bonneville plans to return the approximately \$8.2 million of excess funds to the U.S. Treasury, via the Spectrum Relocation Fund, as soon as the National Telecommunications and Information Administration (NTIA) officially notifies the Federal Communications Commission (FCC) that the DOE relocation effort is complete.

Bonneville began participating in a new spectrum relocation effort in FY 2015 to relocate its operational telecommunication systems from the 1755-80 MHz radio spectrum bands. The NTIA has approved and, in July 2014, web-posted federal agency relocation plans, including the Bonneville relocation plan. The FCC held an auction of this spectrum on November 13, 2014. Bonneville received an additional \$5.2 million from the Spectrum Relocation Fund on July 29, 2015 to fully pay for this new relocation effort, including, as in the prior relocation, the purchase and installation of new digital radio equipment. Bonneville received obligational authority to proceed with this relocation effort by apportionment on July 24, 2015.

Bonneville has worked to complete its move off of 1755-80 MHz in two stages. First, Bonneville moved off of the old federal frequencies and “retuned” to new alternate federal frequencies in the band segment of 1780-1850 MHz which is above the highest frequency that is involved in the auction. Three hops federal frequency moves/retuning were completed as of June 7, 2017. The last remaining path, Happy Camp to Hilltop in northern California near the Oregon California Border, was moved/retuned, and as of July 31, 2018, Bonneville was off of the AWS-3 radio frequencies, meeting the commitment date promised to the NTIA. Bonneville still has additional work remaining to finish the construction related to the AWS-3 relocations. Bonneville will use the SRF relocation funds until the AWS-3 relocation work is completed and closed out. Second, Bonneville will complete its move of these four microwave hops to 7GHz-8GHz. This will take additional time because two of four hops require building construction to complete the work. AWS-3 funds will need to be retained by Bonneville at least through FY 2023 to complete construction of two communications buildings. This will accommodate the adjusted construction schedule with contingency for minor access issues due to weather or fire. Glass Butte was under construction during FY 2021 and is expected to be completed in August 2022. Then, microwave installations can then begin. Richland Franklin construction began in July 2021. The building construction occurred in FY 2021 with cutovers to the new radio equipment and retirement of old radio equipment likely concluding in FY 2022. Bonneville will assure that “comparable capability” has been achieved for these four AWS-3 relocated Bonneville operational telecommunication hops.

Educational Activities

Bonneville is a supporter of science, technology, engineering, and math (collectively known as “STEM”) education programs. These programs provide support and encouragement to middle and high school students to study the sciences in school and to pursue careers in these fields. As a regional leader in STEM education, Bonneville proudly supports and organizes an award-winning Science Bowl. Bonneville also sponsors Science Fair competitions for students in Washington State, as well as a First Robotics tournament championship. Bonneville employees also serve as volunteer ambassadors, providing presentations, curricula, and activities to K-12 schools that enhance the learning experience for students and teachers, and extend awareness of the role of the region’s hydroelectric system.

BPA is supporting a research and testing project funded primarily by the Department of Energy with participation from the state of Oregon. The project is PacWave wave energy testing facility, located offshore from BPA’s power and transmission customer, Central Lincoln PUD. Modest amounts of energy will be captured from ocean waves and transformed to electricity at the facility. That electricity will be integrated into the BPA grid through the PUD and BPA will facilitate compensation for that energy and potentially purchase the kilowatt-hours. Generation may begin as early as late calendar year 2022.

Budget Estimates and Planning

This FY 2023 Budget proposes estimated accrued expenditures of \$2,756 million for operating expenses, \$61 million for Projects Funded in Advance (PFIA), \$842 million for capital investments, and \$734 million for capital transfers in FY 2023.

The estimated spending levels in this budget are still subject to change to accommodate competitive dynamics in the region's energy markets, debt management strategies, continuing changes in the electric industry, and other factors.

This FY 2023 Budget includes capital and expense estimates based on final approved spending proposals from Bonneville's BP-22 Integrated Program Review (IPR). Capital investment levels reflect Bonneville's capital asset management process and external factors such as changes affecting the West Coast power and transmission markets, along with planned infrastructure investments designed to address the long-term needs of the region and national energy security goals.

Bonneville utilizes a structured capital project selection process requiring submission of a standardized business case for review. Each business case consists of a description of the project, a clear statement of objectives, description and mitigation of risks, and a rigorous analysis of project costs and benefits including a status quo assumption and preferred alternatives. In addition, both annual and end-of-project targets are set for each project covering cost, scope, and schedule. Progress reports on these targets are provided to Bonneville's senior executives at least quarterly.

The FYs 2022-2027 revenue estimates in this budget, included in the Net Outlay formulation, reflect revised cost estimates, debt management strategies, and capital financing assumptions. The revenue estimates also include depreciation and U.S. Treasury repayment credit assumptions. These U.S. Treasury repayment credits offset, among other things, Bonneville's fish and wildlife program costs allocable to the non-power project purposes of the FCRPS, as provided under section 4(h)(10)(C) of the Northwest Power Act.

Overview of Detailed Justifications

In Bonneville's Detailed Justification Summaries, accrued expenditure is the basis of presenting Bonneville's program funding levels in the power and transmission rate making processes and the basis upon which Bonneville managers control their resources to provide products and services. Accrued expenditures relate period costs to period performance. Traditional budget obligation requirements for Bonneville's budget are assumed on the Program and Financing Summary Schedule prepared in accordance with Office of Management & Budget Circular A-11.

The organization of Bonneville's FY 2023 Budget and these performance summaries reflect Bonneville's business services basis for its utility enterprise activities. Bonneville's major areas of activity on a consolidated budget and accounting basis include power and transmission, with administrative costs included. Power Services includes line items for Fish and Wildlife, Energy Efficiency, Residential Exchange Program, Associated Projects O&M Costs, and the Northwest Power Council. Environmental activities are shown in the relevant Power Services and Transmission Services sections, as are reimbursable costs. Bonneville's interest expense, pension and post-retirement benefits, and capital transfers to the U.S. Treasury are shown by program.

The first section of performance summaries, Capital Investments, includes accrued expenditures for investments in electric utility and general plant associated with the FCRPS generation and transmission services, fish and wildlife, and capital equipment. These capital investments are estimated to require budget obligations and expected use of \$842 million in bonds to be issued and sold to the U.S. Treasury in FY 2023.

The near-term forecast of capital funding levels has undergone an extensive internal review as a result of Bonneville's development of asset management plans. These plans encompass project cost management initiatives, capital investment assessments, and categorization of capital projects to be funded based on risk and other factors. Consistent with Bonneville's near-term asset planning process and Bonneville's standard operating budget process, this FY 2023 Budget includes updated capital investment levels for FY 2022 estimated at \$805 million. Utilizing this review process helps Bonneville in its efforts as a participant in wholesale energy markets. Bonneville will continue to work with the Corps of Engineers and Bureau of Reclamation to optimize the mix of projects.

The second section of Bonneville's performance summaries, entitled Annual Operating Expenses, includes accrued expenditures for services and program activities financed by power sales revenues, transmission sales revenues, and projects funded in advance. For FY 2023, total budget expense and capital obligations are estimated at \$3,660 million. The

total program requirements of all Bonneville programs, including total obligations and \$734 million of capital transfers, are estimated at \$4,394 million for FY 2023.

Evidence and Analysis in the Budget

Bonneville has undertaken several initiatives and processes to determine appropriate budget expenditures.

Bonneville's Integrated Program Review (IPR) process allows the public to see all relevant FCRPS expense and capital spending level estimates in the same forum. In addition, Bonneville's IPR process allows the public to review and comment on Bonneville's 10-year capital forecasts. The IPR occurs every two years, prior to each Bonneville rate case, and provides the public an opportunity to review and comment on Bonneville's program level cost estimates prior to being set for inclusion in rate cases. BPA conducted the BP-22 IPR, which reviewed spending plans for the FY 2022 and FY 2023 rate period during the summer of 2020. Bonneville initiated the BP-22 IPR with the objective to be consistent with the 2018 Strategic Direction, which included holding costs at or below the level of inflation through 2028. Bonneville issued the closeout report for the BP-22 IPR in September 2020.

The final spending levels in the BP-22 IPR reflect shifts in how BPA views and plans its work, using program plans to show how all of the organizations in BPA support the critical commercial, operations and asset management functions and performance objectives.

Bonneville concluded the BP-22 Integrated Program Review 2 (IPR 2) public process at the end of April 2021. The proposed adjustments to the costs (spending levels) the agency will recover in its BP-22 rates include a two-year total reduction of \$53 million to the Transmission capital and facilities program for the BP-22 rate period. In addition, Bonneville will include a two-year total reduction in Transmission capital of \$73 million for rate-setting purposes only, similar to the "lapse factor" concept as used for the 2010 and 2012 rate cases. Together, these adjustments reduce for ratemaking purposes the two-year transmission capital program by approximately \$126 million. It was also concluded that Bonneville's projected spending for its Fish and Wildlife (F&W) program is sufficient to meet the agency's projected funding obligations over the rate period.

Bonneville is focused on institutionalizing operational excellence – continuous improvement that produces more efficient and effective ways to deliver on Bonneville's mission and vision. Bonneville's Business Transformation Office (BTO) ensures that Bonneville's transformational initiatives, including its Key Strategic Initiatives (KSIs), are executed in the most efficient manner from a time, cost and resource perspective. Bonneville currently focuses on Grid Modernization as its single KSI. Grid Modernization will advance the way BPA markets and operates the federal power and transmission systems, so that Bonneville can benefit from new technology and emerging market opportunities. This work is critical to ensuring BPA's long-term commercial success and competitiveness.

Judicial and Regulatory Activity

The Energy Policy Act of 2005 authorized the Federal Energy Regulatory Commission (FERC) to approve and enforce mandatory electric reliability standards with which users, owners, and operators of the bulk electric power system, including Bonneville, are required to comply. These standards became enforceable on June 18, 2007, and compliance is monitored by the North American Electric Regulatory Corporation (NERC) and the regional reliability organizations.

FCRPS Cost Allocations

The FY 2021 Energy and Water and Development Act included report language requesting that Bonneville, the Corps of Engineers, and Reclamation provide quarterly reports on their work to resolve policy differences among the agencies for the allocation of costs for multi-purpose projects of the Federal Columbia River Power System. This followed language in the House subcommittee report in the FY 2020 Energy and Water Development Appropriations Act noting that the allocations of cost sharing among the authorized project purposes can be decades old and requesting that the three agencies return an outline of how cost allocations may be updated. The three agencies provided the subcommittee with an outline of cost allocation methods and authorities in June 2020, noting specific policy differences.

**Power Services - Capital
Funding Schedule by Activity**

Funding (\$K)

	FY 2021 Actuals	FY 2022 Estimate	FY 2023 Estimate	FY 2023 vs FY 2022	
				\$	%
Power Services – Capital					
Associated Project Costs	201,575	264,120	281,260	17,140	6.5%
Fish & Wildlife	41,897	43,000	43,000	0	0.0%
Total, Power Services – Capital	243,473	307,120	324,260	17,140	5.6%

Outyears (\$K)

	FY 2023 Estimate	FY 2024 Estimate	FY 2025 Estimate	FY 2026 Estimate	FY 2027 Estimate
Power Services – Capital					
Associated Project Costs	281,260	300,000	306,850	313,647	320,466
Fish & Wildlife	43,000	30,000	25,000	15,000	15,000
Total, Power Services - Capital	324,260	330,000	331,850	328,647	335,466

Program Overview

Associated Project Costs provide for direct funding of additions, improvements, and replacements of existing Corps of Engineers and Bureau of Reclamation hydroelectric projects in the Pacific Northwest. These FCRPS hydro projects produce a large portion of the electric power that is marketed by Bonneville.

Maintaining the availability and increasing the efficiency of the FCRPS is critical to ensuring that the region has an adequate, efficient, economic, and reliable power supply. The FCRPS represents about 80 percent of Bonneville's firm power supply and includes 31 operating federal hydroelectric projects with over 200 generating units. These projects have an average age of about 50 years, with some that exceed 60 years of age. Through direct funding and the cooperation of the Corps of Engineers and Bureau of Reclamation, Bonneville uses its U.S. Treasury borrowing authority and other sources to make investments needed to restore generation availability and improve efficiency, reducing demand on Corps of Engineers and Bureau of Reclamation appropriations for power-related investments.

Since the beginning of Direct Funding in 1997, BPA has invested over \$2 Billion in Direct Capital in the FCRPS with the goal of maximizing system value for the region and its stakeholders. Ongoing analysis with its operating partners, the Army Corps of Engineers and the Bureau of Reclamation, has identified ongoing investment needs for the foreseeable future in order to maintain the health of the hydro system.

These planned investments, included in the FY 2023 Budget estimates, will maintain the generation performance of the FCRPS. Moving forward with the cost-effective opportunities to expand the generation and to preserve and enhance the capability of the FCRPS is a smart, economic, and environmentally beneficial decision when compared to purchasing power from the wholesale power market to serve growing Pacific Northwest electricity needs of BPA customers.

Fish and wildlife capital costs incurred by Bonneville are directed at activities that mitigate Columbia River Basin fish and wildlife resources. Bonneville uses capital to fund projects designed to increase juvenile and adult fish passage through the federal hydrosystem, to increase fish production and survival through construction of hatchery, acclimation and fish monitoring facilities, and to increase wildlife and resident fish populations through land acquisitions and associated habitat maintenance. These capital projects support both Northwest Power Act and ESA priorities and are integrated with the Pacific Northwest Electric Power Planning Council's (Council) Columbia Basin Fish and Wildlife Program (Council's Program) in order to efficiently meet Bonneville's responsibilities under the Northwest Power Act and other statutes to mitigate federal hydrosystem impacts to Columbia River Basin fish and wildlife.

Bonneville implements such projects consistent with the Council's Program and the purposes of the Northwest Power Act. Under the Northwest Power Act, the Council must develop a program that protects, mitigates, and enhances Columbia River Basin fish and wildlife affected by the federal and non-federal hydroelectric projects in the basin while assuring the Pacific Northwest an adequate, efficient, economical, and reliable power supply. The Program, the Columbia River System BiOps, other BiOps, and Bonneville's long-term agreements include prioritized strategies for mitigation actions and projects to meet Bonneville's responsibilities under the Northwest Power Act, the ESA, the Federal Clean Water Act, and other laws. When issues arise that potentially trigger the *in-lieu* provision of the Northwest Power Act, which prohibits Bonneville from funding mitigation that other entities are authorized or required to undertake, Bonneville works with the Council and the regional fish and wildlife managers, customers, and tribes, as appropriate, to ensure ratepayers fund only appropriate mitigation.

Most projects recommended by the Council also undergo independent scientific review as directed by the 1996 Energy and Water Development Appropriations Act, which added section 4(h)(10)(D) to the Northwest Power Act. As a result, the Council appoints an Independent Scientific Review Panel (ISRP) "to review a sufficient number of projects" proposed to be funded through Bonneville's annual fish and wildlife budget "to adequately ensure that the list of prioritized projects recommended is consistent with the Program." The Northwest Power Act further states that "in making its recommendations to Bonneville, the Planning Council shall consider the impact of ocean conditions on fish and wildlife populations; and shall determine whether the projects employ cost effective measures to achieve program objectives."

Today, most mitigation projects funded by Bonneville receive ISRP review as part of the Council recommendation process. The Council uses a multi-year project review cycle during which the ISRP reviews categories of projects grouped together.

To comply with the ESA, Bonneville funds capital investment actions to avoid jeopardizing listed species. Guidance for those actions is found in the current BiOps issued by NOAA and the USFWS.

Under these collective BiOps Bonneville, the Corps of Engineers and Reclamation (Action Agencies) have committed to implement hydro, habitat, hatchery, and other actions throughout the Columbia River Basin to address impacts stemming from the operation of the federal hydro-electric dams on ESA-listed fish, and to ensure that operations of the federal dams do not jeopardize the continued existence of the ESA listed species or adversely modify their designated critical habitat.

The Action Agencies also signed the 2008 Columbia Basin Fish Accords (Fish Accords or Accords) with five Northwest Tribes and the states of Idaho and Montana. In 2009, an agreement was signed with the state of Washington and federal agencies (the state of Washington Estuary agreement). And in 2012, the Action Agencies signed an agreement with the Kalispel Tribe of Indians covering Albeni Falls Dam and FCRPS operations. Wildlife settlement agreements have been signed with the states of Oregon and Idaho to help complete mitigation for the flooding and inundation caused by the construction of FCRPS dams operating in those states. These Fish Accords and settlements complement the BiOps and provide firm commitments to prioritize mitigation actions and secure funding over the life of the agreements.

In October 2018, Bonneville and its federal partners Corps of Engineers and Bureau of Reclamation signed extension agreements with current Accords partners, namely certain states and tribes, to extend the Columbia Basin Fish Accords (2018 Fish Accord extensions). In 2020, Bonneville, the Corps of Engineers, the Bureau of Reclamation and state and tribal parties signed new amendments to extend the 2018 Columbia Basin Fish Accord Extensions to September 30, 2022. The extension agreements commit nearly \$450 million for fish and wildlife protection and mitigation, which is likely to result in future expenses or regulatory assets.

As noted above, BiOps, 2018 Fish Accord extensions, and wildlife settlement commitments are integrated along with other projects and implemented through the Council Program under the Northwest Power Act. They provide the basis for Bonneville's planned capital investment for fish and wildlife.

Accomplishments

- The BP-22 - Draft Record of Decision (ROD) was issued in June 2021 and the final ROD was issued in late July.
- 45,134 acre-feet/year of water protected & conserved
- 6,242 acres improved & protected in riparian areas
- 29,545 acres protected by purchase or lease
- 258 cubic feet per second (cfs) of water flow conserved & protected
- 191 miles of stream improved & protected in riparian areas
- 129 miles of habitat accessed
- Completed Generator Coolers Installation at Bonneville Dam
- Completed Auditorium & Project Office Roofs Replacement at Bonneville
- Completed Powerhouse Roof Replacement at John Day
- Completed Transformers Replacement at The Dalles
- Completed GDACS installation at Chief Joseph
- Completed Transformer 3 Rehabilitation at Libby Dam
- Completed Station Service Breakers Replacement at Ice Harbor
- Completed Main Unit Lubricating Oil Replacement on the Lower Snake Dams
- Completed Drainage System Oil Water Separator at McNary
- Completed Thrust Bearing Repair on Units 13 & 14 at McNary

Explanation of Changes

Bonneville's budget includes \$324.3 million in FY 2023 for Power Services capital, which is a 5.6 percent increase from the FY 2022 forecasted level. The FY 2023 level reflects additional work efforts while continuing to align with BPA's strategic asset management plans which focus on the need for investment in the hydroelectric system assets and investments necessary to implement the BiOps, 2018 Fish Accord extensions, and other Columbia Basin Fish and Wildlife activities.

The FY 2023 budget increases the levels for Associated Projects (\$17.1 million) and maintains the funding level for Fish & Wildlife, relative to FY 2022.

Strategic Management

Bonneville markets available electric power to meet requested load while supporting the achievement of its vital responsibilities for fish and wildlife, energy efficiency, renewable resources, and low-cost power in the Pacific Northwest region. Bonneville will continue to implement the following strategies to serve the region:

1. Bonneville coordinates its power operational activities with the Corps of Engineers, Bureau of Reclamation, NERC, regional electric reliability councils, its customers, and other stakeholders to provide the most efficient use of federal assets.
2. Ongoing work with the Corps of Engineers and Bureau of Reclamation is focused on improving the reliability of the FCRPS, increasing its generation efficiency, and optimizing hydro facility operation.
3. Bonneville is committed to funding efforts to protect listed fish and wildlife species in the Columbia Basin under the ESA and working closely with the Council, regional fisheries managers, and other federal agencies to prioritize and manage projects to mitigate fish and wildlife affected by the FCRPS.
4. Bonneville's utility customers have been, and continue to be, a critical part of Bonneville's collaborative efforts to promote and foster the efficient use of energy.
5. Bonneville has assisted with a DOE Wind Power crosscutting initiative to strengthen energy security.

The following external factors present the most significant risk and impact to overall achievement of the strategies listed above:

1. Continually changing regional economic and institutional conditions;
2. Competitive dynamics; and
3. Ongoing changes in the electric industry.

Associated Projects

Overview

Bonneville will work with both the Corps of Engineers and Bureau of Reclamation to reach mutual agreement on budgeting and scheduling capital improvement projects that are cost-effective and provide system or site-specific enhancements, increase system reliability, or provide generation efficiencies.

The work is focused on improving the reliability of the FCRPS and on increasing its generation efficiency or capacity through turbine runner replacements, optimizing hydro facility operation, and new unit construction. Also, limited investments may be made in joint-use facilities that are beneficial to both the FCRPS operations and to other Corps of Engineers and Bureau of Reclamation project purposes.

Corps of Engineers Projects

(\$K)		
FY 2021 Actuals	FY 2022 Estimate	FY 2023 Estimate
168,700	216,296	229,286

Bonneville Dam:

- FY 2021. Completed Generator Coolers replacement, Auditorium and Project Office Roofs replacement. Continued Digital Governors replacement, headgate repair pit rehabilitation, station service reconfiguration, control room fire protection upgrades, oil water separator improvements, tailrace gantry crane rehabilitation, and generator fire protection projects. Began ice and trash sluice gate replacement, HVAC replacement, Spillway Cranes replacement, trashracks rehabilitation and replacement and Bradford Island Service Building PRQ Switchgear Upgrade.
- FY 2022. Complete control room fire protection upgrades. Continue oil water separator improvements, station service reconfiguration, tailrace gantry crane rehabilitation, generator fire protection projects, Ice and Trash Sluice Gate replacement, HVAC replacement, Spillway Cranes replacement and trashracks rehabilitation and replacement, and Bradford Island Service Building PRQ Switchgear Upgrade. Begin Main Unit Breaker replacement and preferred AC/DC improvement.
- FY 2023. Continue oil water separator improvements, station service reconfiguration, tailrace gantry crane rehabilitation, generator fire protection projects, Ice and Trash Sluice Gate replacement, HVAC replacement, Spillway Cranes replacement and trashracks rehabilitation and replacement, Bradford Island Service Building PRQ Switchgear Upgrade, main unit breaker replacement and preferred AC/DC improvement.

John Day Dam:

- FY 2021. Completed Powerhouse Roof replacement. Continued heating, ventilating, air conditioning (HVAC) system upgrade, SQ board replacement, BLH Turbine Hub Upgrades and fixed blade conversions, Control Room Fire Protection Upgrades, and trash rack crane replacement. Began trashracks rehabilitation and replacement and Submerged Traveling Screen (STS) Crane replacement.
- FY 2022. Complete Emergency Gantry Crane replacement, SQ board replacement and trash rack crane replacement. Continue HVAC system upgrade, BLH Turbine Hub Upgrades and fixed blade conversions, STS Crane replacement and trashracks rehabilitation and replacement.
- FY 2023. Continue HVAC system upgrade, BLH Turbine Hub Upgrades and fixed blade conversions, STS Crane replacement and trashracks rehabilitation and replacement.

The Dalles Dam:

- FY 2021. Completed Ice and Trash Sluiceway and transformer replacements. Continued Fish Unit Breaker replacement, Gate Repair Pit Upgrades, Emergency gantry crane rehabilitation and Intake and crane rails replacement.
- FY 2022. Complete Fish Unit Breaker replacement and Gate Repair Pit Upgrades. Continue emergency gantry crane rehabilitation and Intake and crane rails replacement.

- FY 2023. Complete Emergency Gantry Crane rehabilitation. Continue Intake and Crane rails replacement. Begin Exciters replacement.

Willamette Plants:

- FY 2021. Completed Oil Water Separator replacement at Cougar. Continued Spillway Gate rehabilitation at Detroit and Cougar, Intake Gantry Crane at Dexter, Main Unit Breakers and Electrical Reliability Upgrades at Hills Creek and Green Peter and Electrical Reliability Upgrades at Foster and Dexter. Began Transformers replacement at Detroit.
- FY 2022. Complete Spillway Gate rehabilitation at Detroit, Intake Gantry Crane at Dexter and Oil Water Separator at Foster. Continue Spillway Gate rehabilitation at Cougar, Main Unit Breakers and Electrical Reliability Upgrades at Foster, Hills Creek and Green Peter. Begin Bridge Crane replacement at Green Peter and Butterfly Valves at Cougar.
- FY 2023. Complete Butterfly Valves and Spillway Gates at Cougar. Continue Spillway Gate rehabilitation at Cougar, Bridge Crane replacement at Green Peter, Main Unit Breakers and Electrical Reliability Upgrades at Foster, Hills Creek and Green Peter.

Albeni Falls Dam:

- FY 2021. Continued main unit transformers replacement.
- FY 2022. Continue installation of main unit transformers.
- FY 2023. Complete Main Unit Transformers installation. Begin Bridge Crane rehabilitation and HVAC replacement.

Libby Dam:

- FY 2021. Completed Transformer 3 rehabilitation. Continued system control console replacement and DC Boards and Breakers replacement. Began powerhouse gantry crane rehabilitation.
- FY 2022. Complete powerhouse gantry crane rehabilitation. Continue system control console replacement, and DC boards and breakers system replacement. Begin left abutment rock slide stabilization.
- FY 2023. Complete DC Boards and Breakers System replacement. Continue system control console replacement and left abutment rock slide stabilization Begin 6th Unit Installation.

Chief Joseph Dam:

- FY 2021. Completed GDACS replacement and Control Room SCC Board replacement. Continued Intake Gantry Crane replacement. Began Upgrades for Station Service Units.
- FY 2022. Complete intake gantry crane rehabilitation. Continue upgrades for station service units. Begin Units 1-16 Generator Rewinds, Freight Elevator rehabilitation and Powerhouse Elevator rehabilitation.
- FY 2023. Continue upgrades for station service units, Units 1-16 Generator Rewinds, Freight Elevator rehabilitation and Powerhouse Elevator rehabilitation. Begin Units 1-16 Exciters replacement, Sump Pump and Controls replacement and Power Bus replacement.

Dworshak Dam

- FY 2021. Completed Telephone Switch and System Upgrades. Continued RO valve upgrade.
- FY 2022. Complete RO valve upgrade.
- FY 2023. No planned capital projects.

McNary Dam

- FY 2021. Completed Drainage System Oil Water Separator and Main Unit 13-15 Thrust Bearing Repair. Continued Digital Governors Upgrade, Exciters Upgrade, Governors rehabilitation, headgate system rehabilitation, Intake Gantry Crane rehabilitation, iso-phase and HV Bus replacement, Powerhouse Control System Upgrades, Station Service Turbine Rehabilitation, Tailrace Gantry Crane 4 replacement, and Turbine Design and Replacement.
- FY 2022. Complete Tailrace Gantry Crane 4 replacement. Continue Digital Governors Upgrade, Exciters Upgrade, Governors rehabilitation, headgate System rehabilitation, Intake Gantry Crane rehabilitation, iso-Phase and HV Bus

replacement, Powerhouse Control System Upgrades, Station Service Turbine Rehabilitation, and Turbine Design and Replacement.

- FY 2023. Continue digital governors upgrade, exciters upgrade, governors rehabilitation, headgate system rehabilitation, intake gantry crane rehabilitation, iso-phase and HV Bus replacement, powerhouse control system upgrades, station service turbine rehabilitation, and turbine design and replacement.

Ice Harbor Dam

- FY 2021. Completed XJO station service breaker replacements. Continued units 1-3 turbine runner replacements and stator winding replacements and intake gantry crane controls upgrade.
- FY 2022. Complete intake gantry crane controls upgrade. Continue units 1-3 turbine runner replacements and stator winding replacements. Begin Intake Gate Hydraulic System Upgrades.
- FY 2023. Continue units 1-3 turbine runner replacements, stator winding replacements, Intake gate hydraulic system upgrades. Begin transformers 1-3 replacement.

Little Goose Dam

- FY 2021. Completed Main unit lubricating oil replacement. Continued headgate Repair Pit upgrade, Intake Gate rehabilitation, iso-Phase Bus Upgrades, Unit 5 Rotor Frame and Bracket Repair, and Powerhouse Roof Replacement.
- FY 2022. Complete Powerhouse Roof Replacement. Continue headgate Repair Pit upgrade, Intake Gate rehabilitation and iso-phase Bus Upgrades. Begin DC System and LV Switchgear Upgrade.
- FY 2023. Complete Unit 5 Rotor Frame and Bracket Repair, Continue DC system and LV switchgear upgrade, headgate Repair Pit Upgrade, Intake Gate rehabilitation, and iso-Phase Bus Upgrades.

Lower Granite Dam

- FY 2021. Completed Main Unit Lubricating Oil replacement. Continued DC system and LV switchgear upgrade, iso-phase bus and housing upgrade, and Main Unit 2 Blade Sleeve Upgrade and rehabilitation.
- FY 2022. Complete isophase bus and housing upgrade. Continue DC system and LV switchgear upgrade and Main Unit 2 Blade Sleeve Upgrade and rehabilitation. Begin trashrake crane and rake replacement.
- FY 2023. Complete DC System and LV Switchgear Upgrade, trashrake crane and rake upgrade and Main Unit 2 Blade Sleeve Upgrade and rehabilitation. Continue trashrake crane and rake replacement.

Lower Monumental Dam

- FY 2021. Completed Main Unit Lubricating Oil replacement. Continue iso-phase bus upgrades and trash rake crane and rake upgrades.
- FY 2022. Complete iso-phase bus upgrades. Continue trashrake crane and rake upgrades. Begin DC system and LV switchgear upgrades and intake gate rehabilitation.
- FY 2023. Complete Trash Rake Crane and Rake upgrades. Continue DC system and LV switchgear upgrades, and intake gate rehabilitation.

Bureau of Reclamation Projects

(\$K)

FY 2021 Actuals	FY 2022 Estimate	FY 2023 Estimate
32,876	47,824	51,974

Grand Coulee Dam

- FY 2021. Continued G11-18 Transformers Replacement, Block 31 elevator replacement, LPH/RPH Bridge Crane replacement, Station Service Compressed Air System replacement, TPP Crane Controls Upgrade, and Firehouse construction.
- FY 2022. Continue G11-18 Transformers Replacement, Block 31 elevator replacement, LPH/RPH Bridge Crane replacement, Station Service Compressed Air System replacement, TPP Crane Controls Upgrade, and Firehouse construction. Begin G1-18 iso-Phase replacement, Inclined Elevator rehabilitation and Radio System Modernization.
- FY 2023. Complete LPH/RPH Bridge Crane replacement and Station Service Compressed Air System replacement. Continue G11-18 Transformers Replacement, Block 31 elevator replacement, TPP Crane Controls Upgrade, and Firehouse construction. Continue G1-18 iso-Phase replacement and Inclined Elevator rehabilitation and Radio System Modernization.

Keys Pump Generating Plant

- FY 2021. Continued P1-P6 Coaster Gate replacement, P1-P6 exciters, relays and unit controls, PG7-12 governors, exciters, relays and unit controls and phase reversal switch replacement.
- FY 2022. Complete P1-P6 Coaster Gate replacement. Continue P1-P6 exciters, relays and unit controls, PG7-12 governors, exciters, relays and unit controls and phase reversal switch replacement.
- FY 2023. Continue P1-P6 exciters, relays and unit controls, PG7-12 governors, exciters, relays and unit controls and phase reversal switch replacement.

Hungry Horse Dam

- FY 2021. Continued SCADA replacement, powerplant crane controls, radio system modernization, disconnect switches replacement and main unit transformer fire protection system replacement.
- FY 2022. Complete SCADA replacement and main unit transformer fire protection system replacement. Continue powerplant crane controls and radio system modernization. Begin exciters replacement.
- FY 2023. Continue exciters replacement, powerplant crane controls and radio system modernization.

Chandler Dam

- FY 2021. No planned capital projects.
- FY 2022. Begin Generator Units 1 and 2 Modernization.
- FY 2023. Continue Generator Units 1 and 2 Modernization.

Palisades Dam

- FY 2021. Continued switchyard modernization. Began Hollow Jet Valve Replacement.
- FY 2022. Complete switchyard modernization. Continue Hollow Jet Valve Replacement.
- FY 2023. Complete Hollow Jet Valve Replacement.

Green Springs Dam

- FY 2021. No planned capital projects.
- FY 2022. No planned capital projects.
- FY 2023. No planned capital projects.

Black Canyon Dam

- FY 2021. No planned capital projects.
- FY 2022. No planned capital projects.
- FY 2023. Begin Trash Rake System Installation.

Anderson Ranch Dam

- FY 2021. No capital projects.
- FY 2022. Begin turbine runner replacement.
- FY 2023. Continue turbine runner replacement.

Roza Dam

- FY 2021. Continued switchyard rehabilitation and breaker upgrade.
- FY 2022. Complete switchyard rehabilitation and breaker upgrade.
- FY 2023. No planned capital projects.

Minidoka Dam

- FY 2021. Continued microwave system backbone modernization.
- FY 2022. Complete microwave system backbone modernization.
- FY 2023. No planned capital projects.

Fish & Wildlife (\$K)		
FY 2021 Actuals	FY 2022 Estimate	FY 2023 Estimate
41,897	43,000	43,000

Overview

Bonneville continues to develop budgets for the suite of fish and wildlife mitigation projects originally adopted in FY 2007 based on recommendations from the Council. Bonneville reaffirmed and expanded many project-specific commitments in subsequent agreements and processes, including BiOps and 2018 Fish Accord extensions, and since then, virtually all these projects received independent science review through the Council and its project review processes. Bonneville’s funding decisions embrace many of the management objectives and priorities in the Program and continue to integrate ESA compliance as described in the NOAA Fisheries’ and USFWS’s FCRPS BiOps. Coordination continues among Bonneville, Council, federal resource management agencies, states, tribes, and others to support the projects that satisfy Bonneville’s mitigation responsibilities.

Bonneville intends to continue implementing the types of capital projects listed below. These projects are based upon the best available science and are regionally important in that they provide high priority mitigation and protection actions for fish and wildlife populations affected by the construction and operation of the FCRPS dams. Projects and facilities listed below deliver direct on-the-ground benefits to both ESA listed and non-listed fish and wildlife throughout the Columbia River Basin and have been evaluated and coordinated with the Council, state, federal and tribal fish and wildlife resource managers, local governments, watershed and environmental groups, and other interested parties. Specifically, as capital construction projects, hatchery facilities typically go through the Council’s three-step process, which includes development of a Master Plan, environmental compliance, ESA consultation, value engineering analysis, and review by the Independent Science Review Panel.

The three types of fish and wildlife projects that Bonneville capitalizes are as follows:

- 1) Fish passage structures – Structures funded with capital that enhance fish access to habitat in the Columbia River Basin include but not limited to wells, ladders, screens, pumping, culverts, diversion (irrigation) consolidation, piping to reduce water loss, irrigation efficiencies (drip irrigation), lining of ditches (seepage reduction), removal of objects impeding fish passage or pushup dams, and construction-related habitat restoration.
- 2) Hatchery facility construction – Projects and activities relating to the construction, improvement, and replacement of fish hatcheries, including related satellite facilities (acclimation ponds and collection weirs). This may also include construction-related habitat restoration.
- 3) Land acquisition and stewardship – Land acquisition projects protect, enhance, and maintain fish and wildlife habitat and provide credit to Bonneville, such as acres for wildlife or instream miles for resident fish, to fulfill the legal obligation of Bonneville to mitigate the impacts from construction and operation of the FCRPS.

New Project listing for which Bonneville is requesting expenditure authority:

- Colville Tribes Resident Fish Hatchery Expansion: Constructed to produce 50,000 lbs. of trout annually, the facility is unable to meet all its annual spring stocking goals for Buffalo, North Twin, South Twin, and Rufus Woods lakes as identified in the 2020 Fisheries Management Plan. In order to meet annual stocking goals for these four lakes, the Hatchery began contracting with a commercial net pen operator in 2010 to rear a component of the hatchery’s Rainbow Trout in net pens located in Lake Rufus Woods. Poor net pen water quality conditions have consistently contributed to annual mortality rates between 33-50%. The Colville Tribe is exploring the feasibility of expanding on-site hatchery rearing vessels to increase on-site production and reduce net pen rearing. The expansion would allow the hatchery to utilize clean, cool, pathogen free water and intended to increase trout survival, helping meet stocking objectives identified in the Management Plan. In 2021,

the Colville Tribe hired a licensed engineering firm to complete a Conceptual Design and construction cost estimates for a facility capable of producing 25,000 triploid Rainbow Trout at a maximum size of 2 lbs. each. The documents produced will provide the Colville Tribes Fish and Wildlife Department a Conceptual Plan and estimation of construction costs that will assist in determining if the project should continue to the next phase. Design for the project has not begun and expected start date is yet to be determined.

- Chief Joseph Hatchery Water Quality Project: The Chief Joseph Hatchery was a 2008 Accord commitment with the Confederated Tribe of the Colville Reservation, and construction of Chief Joseph Hatchery began in fiscal year 2010, with fish production starting in 2013. The Chief Joseph Hatchery operates to restore and enhance depleted runs of spring and summer/fall salmon Chinook salmon for release into the Columbia and Okanogan rivers. Current infrastructure/operational constraints are preventing the hatchery from achieving full production of 2.9 million Chinook smolts, and BPA and Colville staff are developing a coordinated approach and plan to address water temperature and production issues at the hatchery. Design for the project has not begun and expected start date is yet to be determined.

- Umatilla Hatchery Facility: The Northwest Power and Conservation Council in 1990 recommended that Bonneville construct the Umatilla Hatchery, just east of the town of Irrigon, Oregon, to mitigate for the loss of salmon and steelhead habitat and migration blockage resulting from the Columbia River System dams. Umatilla River anadromous fish had been largely extirpated in the early 1900s by irrigation dams, prior to construction of the Columbia River System dams. Current hatchery production includes 800,000 spring Chinook, 600,000 fall Chinook, and 150,000 summer steelhead. Construction of the Umatilla Hatchery cost \$14 million and was complete in 1991. Bonneville funds the Oregon Department of Fish and Wildlife to operate the hatchery and the Confederated Tribes of the Umatilla Indian Reservation to operate acclimation facilities supporting the hatchery. The available water supply at the hatchery never met expected production levels, and water supply has continued to deteriorate over time. To preserve and improve fish production at the Umatilla Hatchery, Bonneville is exploring options to address the water supply issue and is in the early evaluation phase. It appears costs will exceed the statutory threshold of \$2,500,000 and have an estimated life of 15 years or more, thus triggering the need to obtain expenditure authority from Congress, prior to commencing construction, as required by 16 U.S.C. 839b(h)(10)(B), which was amended by section 307 of the FY2012 Consolidated Appropriations Act, P.L. 112-74 125 STAT. 877. (Dec. 23, 2011). Congress originally authorized BPA expenditure authority for construction of the Umatilla Hatchery under P.L. 98-360, 98 STAT. 403, 415 (July 16, 1984).).

New construction-related habitat restoration projects that require capital funds in FY 2022 include the following:

- Svensen Island: The Svensen Island Restoration Project will reconnect the 320 acre island, east of Astoria, Oregon, directly to the mainstream Columbia River to increase ecological function and provide refuge and rearing capacity for out-migrating juvenile salmon and steelhead. Specifically, the project will remove and lower approximately 1.5 miles of existing levee; remove approximately 100 pile dikes on the northern side of the island, to provide unobstructed access to 40 acres of re-connected and newly excavated floodplain and tributary habitats for salmonids and lamprey. The Columbia Restoration Group is leading the project, in partnership with the Columbia Land Trust. This estuary project ranks high on the list of priorities in the estuary and will help to meet the responsibilities of the 2020 NMFS BiOp. Capital construction is scheduled to begin in FY 2022 and will last one year.

- Catherine Creek/Hall Ranch: Project is intended to improve off channel rearing habitat complexity for Chinook, steelhead, and bull trout by restoring dynamic channel geomorphology and habitat forming processes in Catherine Creek and Milk Creek. It will improve floodplain connectivity through removal and relocation of one mile of State Highway 203 and re-connecting 50 acres of historic Catherine Creek floodplain and channel network. The request is for a project-funding match of \$3,294,616 from Bonneville against additional project investment from other Federal and State partners for a total projected project cost of \$5,994,616. This project has multiple coordination points, requires an environmental impact statement and the environmental compliance process may impact to implementation timeframes where the project is currently expected to start construction in FY 2022.

The Further Consolidated Appropriations Act, 2019 (Public Law 116-94) provided Expenditure Authority for the following project:

- Steigerwald Project: The Steigerwald Floodplain Restoration Project is a collaborative project that will reconfigure the Port of Camas-Washougal's (Port) existing Columbia River levee system to reduce flood risk, reconnect 960 acres of Columbia River floodplain, and increase ecological function at the Steigerwald Lake National Wildlife Refuge. Specifically, the project will construct 1.6 miles of setback levee; completely remove 2.2 miles of existing levee; provide unobstructed access to floodplain and tributary habitats for salmonids and lamprey; and greatly reduce flood risk to the Port's Industrial Park and City of Washougal's wastewater treatment plant, which serves 15,000 residents. Bonneville is working with the lower Columbia Estuary Partnership, which is leading the project. The project will provide seven survival benefit units (~15% of the Action Agencies' total goal in the estuary). Other partners include the Port, USFWS, Washington State Department of Transportation, City of Washougal, and several private landowners. Capital construction began in FY 2020 and will last three years.

The Consolidated Appropriations Act, 2016 (Public Law 114-113) provided Expenditure Authority for the following projects:

- Shoshone Paiute Trout Hatchery: The Shoshone Paiute Tribes of the Duck Valley Reservation, Idaho, have proposed that Bonneville fund the purchase or construction of a trout hatchery. The Tribes would own and operate the hatchery to produce trout to stock the Duck Valley Reservation reservoirs. The hatchery would meet contemporary aquaculture standards and achieve fish production goals. The Tribes believe they can reduce federal reservoir stocking costs, some of which Bonneville currently pays on an annual basis. Design for the project has not begun and the expected start date is yet to be determined.

The FY 2014 Omnibus Appropriations Act (Public Law No. 113-76) provided Expenditure Authority for the following projects:

- John Day Reprogramming and Construction: The Columbia River Inter-Tribal Fish Commission (CRITFC) has proposed this project in order to balance the upriver and downriver salmon hatchery production mitigating for the effects of John Day and The Dalles Dams within the Zone 6 area in the mainstream Columbia River from the base of McNary Dam downstream to The Dalles Dam. The Tribes, the Corps of Engineers, and Bonneville have agreed that the project will be sited at Prosser Hatchery. BPA will fund the construction of four circular tanks utilizing water reuse systems and the Corps of Engineers will take over the operations and maintenance for the new infrastructure which accommodates the reprogramming of hatchery fish. Project expected to begin design in FY 2022.

- Columbia River Basin White Sturgeon Hatchery: This project, proposed by the CRITFC, will mitigate for the decline of the white sturgeon population caused by consistently poor recruitment upstream of Bonneville Dam. Bonneville would fund the construction of a new facility, or the acquisition of an existing facility, to produce 15,000 - 30,000 yearling white sturgeons per year. The final project may include the collection, holding and spawning of broodstock, the rearing of wild-spawned juveniles, and the acclimation of juveniles prior to release. The site of the Yakama Nation's existing Marion Drain Sturgeon Hatchery near Toppenish, Washington has been proposed as a location. The project team is working on additional analyses to respond to Council comments and to begin the environmental review process. Design for the project has not begun and the expected start date has yet to be determined.

- Kelt Reconditioning and Reproductive Success Evaluation Research: CRITFC is proposing a facility to recondition female steelhead (kelts) after they have spawned. The fish will be held and fed until they have re-matured and then be released into the Snake River where they will contribute to the spawning run. The capital portion of the project is expected to be constructed in the Snake River Basin, at the Nez Perce Tribal Hatchery in Idaho. Pursuant to the 2008 FCRPS BiOp and Supplemental FCRPS BiOps issued in 2010 and 2014, and consistent with 2020 NMFS CRS BiOp, Bonneville will implement the kelt reconditioning plan to improve the productivity of Snake River basin B-run steelhead populations that are listed for protection under the ESA. NOAA's analysis of Prospective Actions indicates that a combination of transportation, kelt reconditioning, and in-stream passage improvements (e.g., spill-flow modifications) could increase kelt returns enough to

achieve a targeted six-percent increase in the number of returning Snake River B-run steelhead spawners to Lower Granite Dam. The Master Plan for the facility is currently in the second of the Council's amended, shortened, Artificial Production Three-Step Review Process and design has progressed to 60%.

Ongoing Projects (Expenditure Authority previously received):

- Crystal Springs Shoshone-Bannock Hatchery Facilities: The Tribes' proposal, originally named Crystal Springs Hatchery, included production of spring/summer Chinook and Yellowstone cutthroat trout, a resident fish, at the Crystal Springs location near the American Falls Reservoir in southern Idaho. In 2019, water quality limitations were confirmed rendering the location unsuitable for anadromous production and an alternative planning approach was initiated. In an effort to maintain production goals, the Crystal Springs location remains the proposed site for a rearing and out-planting facility for up to 30,000 trout to be produced annually for a put and take Tribal fishery. The anadromous facility may be sited in the Panther Creek watershed with the goal of increasing the abundance of spring/summer Chinook returns to this drainage. The facilities are sponsored by the Shoshone-Bannock Tribes, who are expected to operate and manage them once complete.

- Klickitat Production Expansion: In 2008, the Klickitat River Master Plan was submitted by the Yakama Nation, reviewed by the Independent Science Review Panel, recommended with comments by the Council, and conditionally approved by Bonneville. The plan's original goals were to protect and increase naturally producing populations of spring Chinook and steelhead, localize brood collection of harvest stocks (fall Chinook and coho), while protecting the biological integrity and the genetic diversity of indigenous fish stocks in the sub-basin. A component of the Master Plan was implemented in 2009, including the completion of upgrades to Lyle Falls Fishway and Castile Falls Fishway, and the construction of a new bridge at the Klickitat Hatchery. In July 2009, a new Klickitat Hatchery Complex EIS was initiated to examine options for the development and operation of new production and supplementation facilities, acclimation alternatives, and additional upgrades to the existing hatchery facility. The Yakama Nation issued a revised Master Plan in July 2012 that provided updates to their fish management plans. Bonneville suspended the NEPA process while the Yakama Nation refined its proposal in response to site and budgetary limitations and comments on the draft EIS. Since that time, the National Marine Fisheries Service (NMFS) has completed its Mitchell Act EIS and BiOp, helping inform its funding responsibilities in the sub-basin. Bonneville negotiated a new scope of work with the Yakama Nation, and a revised Master Plan was submitted to the Council in 2017 and approved in 2018. The new scope of work targets design and construction activities for the expansion of the current spring Chinook program only, from 600,000 to 800,000 smolt, and converting to a wild broodstock collection program, as well as general water supply and water abatement upgrades. Bonneville has initiated a new EIS process and construction will occur after Bonneville issues a NEPA ROD and alongside a three-way operations and maintenance agreement which affirms that NMFS will remain responsible for providing funding post-construction. Project design was initiated in Summer of 2021.

- Hood River Production Facility: This project has been ongoing since the early 1990s. It currently produces 150,000 spring Chinook salmon smolts and 50,000 winter steelhead smolts annually. The Powerdale Dam Fish Trap formerly provided the foundation for many of the activities associated with implementation of the Hood River Production Program. These include monitoring escapement, collecting life history characteristics, and broodstock acquisition. PacifiCorps' 2010 demolition of its Powerdale Dam and the associated fish trapping facility necessitated the development of alternative adult broodstock trapping sites. One permanent fish trap on the West Fork of the Hood River was completed in 2013, and a temporary trapping site is operational on the East Fork of the Hood River. A permanent trap site on the East Fork is currently being evaluated. The Hood River Production Program has four primary goals: 1) re-establish naturally sustaining runs of spring chinook in the Hood River; 2) re-build naturally sustaining runs of winter steelhead in the Hood River; 3) maintain genetic characteristics of Hood River fish populations; and 4) provide fish for sustainable harvest by both sport and tribal fishers.

- Mid-Columbia Coho Restoration: This Yakama Accord project is intended to re-establish naturally reproducing coho salmon populations in the Wenatchee River and Methow River sub-basins at biologically sustainable levels that also provide significant harvests. This program will construct a facility on the Wenatchee River for holding and spawning broodstock,

incubating eggs, and rearing juveniles. Additional semi-natural ponds will also be constructed in the Wenatchee and Methow sub-basins for acclimating smolts prior to their release. The phased approach, including associated facilities, incorporates development of a mid-Columbia hatchery broodstock, local adaptation to tributaries in the Wenatchee and Methow Basins, and habitat restoration that will benefit coho as well as ESA-listed spring chinook, steelhead, and bull trout.

- Walla Walla Hatchery: The Confederated Tribes of the Umatilla Indian Reservation (CTUIR) proposed the construction of the Walla Walla Hatchery. The Tribes will own and operate the hatchery, which will produce up to 500,000 spring Chinook smolts annually for release into the Walla Walla River. A 30 percent design was completed in June 2015, and a draft EIS was completed in September 2016. However, due to budget overruns, the project was reconfigured. Design and construction were successfully rebid. Construction started in fall 2019, with completion expected in June 2022. The facility will hold, spawn, incubate, and rear spring Chinook on the South Fork Walla Walla River near Milton-Freewater, Oregon.

- Yakima Melvin R. Sampson Coho Facility: This hatchery was proposed by the Confederated Tribes and Bands of the Yakama Nation and is presented in the Yakima River Subbasin Summer and Fall Run Chinook and Coho Salmon Hatchery Master Plan. The Yakama Nation will own and operate the hatchery which will produce up to 700,000 coho smolts using broodstock collected at Roza and Sunnyside dams. Bonneville holds the design and construction contract on behalf of the Yakama Nation. Bonneville published a final EIS on November 6, 2017, and a Record of Decision April 9, 2018, with construction beginning August 2018. Facility construction was finished during fall of 2021.

Potential non-construction capital Wildlife and Resident Fish Habitat Acquisitions (including Conservation Easements) eligible for capitalization are:

- Albeni Falls Wildlife Mitigation
- Willamette Wildlife Habitat Acquisitions
- Libby and Hungry Horse Reservoirs Resident Fish Acquisitions
- Southern Idaho Habitat Acquisitions

- Activities and Explanation of Changes (\$K)

FY 2022 Estimate	FY 2023 Estimate	Explanation of Changes FY 2023 vs FY 2022 Estimate
Power Services – Capital \$307,120	\$324,260	\$17,140/5.6%
Associated Projects \$264,120	\$281,260	\$17,140/6.5%
Milestones:	Milestones:	<ul style="list-style-type: none"> • The increase reflects additional funding needs for investment in the hydroelectric system assets.
<ul style="list-style-type: none"> • Complete control room fire protection upgrades at Bonneville Dam. • Complete Emergency Gantry Crane replacement, SQ board replacement and trash rack crane replacement at John Day Dam. • Complete Fish Unit Breaker replacement and Gate Repair Pit Upgrades at The Dalles Dam. • Complete Spillway Gate rehabilitation at Detroit, Intake Gantry Crane at Dexter and Oil Water Separator at Foster. • Complete powerhouse gantry crane rehabilitation at Libby Dam. • Complete intake gantry crane rehabilitation at Chief Joseph Dam. • Complete RO valve upgrade at Dworshak Dam. • Complete Tailrace Gantry Crane 4 replacement at McNary Dam. • Complete intake gantry crane controls upgrade at Ice Harbor Dam. • Complete Powerhouse Roof Replacement at Little Goose Dam. • Complete iso-phase bus and housing upgrade at Lower Granite Dam. • Complete iso-phase bus upgrades at Lower Monumental Dam. • Complete P1-P6 Coaster Gate replacement at Keys Pump Generating Plant. 	<ul style="list-style-type: none"> • Complete Emergency Gantry Crane rehabilitation at The Dalles Dam. • Complete Butterfly Valves and Spillway Gates at Cougar Dam. • Complete Main Unit Transformers installation at Albeni Falls Dam. • Complete DC Boards and Breakers System replacement at Libby Dam. • Complete Unit 5 Rotor Frame and Bracket Repair at Little Goose Dam. • Complete DC System and LV Switchgear Upgrade, trashrake crane and rake upgrade and Main Unit 2 Blade Sleeve Upgrade and rehabilitation at Lower Granite Dam. • Complete Trash Rake Crane and Rake upgrades at Lower Monumental Dam. • Complete LPH/RPH Bridge Crane replacement and Station Service Compressed Air System replacement at Grand Coulee Dam. • Complete Hollow Jet Valve Replacement at Palisades Dam. 	

FY 2022 Estimate	FY 2023 Estimate	Explanation of Changes FY 2023 vs FY 2022 Estimate
<ul style="list-style-type: none"> • Complete SCADA replacement and main unit transformer fire protection system replacement at Hungry Horse Dam. • Complete switchyard modernization at Palisades Dam. • Complete switchyard rehabilitation and breaker upgrade at Roza Dam. • Complete microwave system backbone modernization at Minidoka Dam. 		
<p>Fish & Wildlife \$43,000 Milestones:</p> <ul style="list-style-type: none"> • Continue implementation of the Program, BiOps and 2018 Fish Accord extension. 	<p>\$43,000 Milestones:</p> <ul style="list-style-type: none"> • Continue implementation of the Program, BiOps and 2018 Fish Accord extension. 	<p>\$0/0.0%</p> <ul style="list-style-type: none"> • Fish & Wildlife will continue long-term, planned effort to reshape funding necessary to implement the BiOps, 2018 Fish Accord extension, Columbia River Basin Fish and Wildlife activities.

**Transmission Services – Capital
Funding Schedule by Activity
Funding (\$K)**

	FY 2021 Actuals	FY 2022 Estimate	FY 2023 Estimate	FY 2023 vs FY 2022	
				\$	%
Transmission Services – Capital					
Main Grid	3,137	12,583	6,219	-6,364	-50.6%
Area & Customer Services	53,030	48,562	71,520	22,958	47.3%
Upgrades & Additions	74,154	76,860	113,430	36,570	47.6%
System Replacements	217,271	337,765	305,991	-31,774	-9.4%
Projects Funded in Advance	63,292	55,542	61,166	5,625	10.1%
Total, Transmission Services - Capital	410,885	531,312	558,327	27,015	5.1%

Outyears (\$K)

	FY 2023 Estimate	FY 2024 Estimate	FY 2025 Estimate	FY 2026 Estimate	FY 2027 Estimate
Transmission Services - Capital					
Main Grid	6,219	11,883	14,047	9,430	8,558
Area & Customer Services	71,520	59,431	46,832	47,164	48,933
Upgrades & Additions	113,430	149,650	74,933	84,894	72,173
System Replacements	305,991	363,091	528,496	506,197	411,032
Projects Funded in Advance	61,166	47,529	35,115	35,363	36,680
Total, Transmission Services - Capital	558,327	631,585	699,422	683,048	577,376

Transmission Services – Capital

Overview

Transmission Services (TS) is responsible for about 75 percent of the Pacific Northwest’s high-voltage transmission. TS provides funding for all additions and upgrades (Expansion Investments), and replacements (Sustain Investments) to the Bonneville transmission system, resulting in reliable service to Northwest generators and transmission customers. The Bonneville transmission system also facilitates the delivery of power under sales and exchange agreements to and from the Pacific Northwest Region. The TS Capital Program is structured with a balanced focus on Expansion and Sustain investments.

In addition to replacing aging and obsolete equipment, TS continues to make significant infrastructure improvements and additions to the system to assure reliable transmission in the Northwest. These improvements and additions will help the Bonneville transmission system continue to comply with national reliability standards and remove constraints that limit economic trade or the ability to maintain the system. Some of the proposed TS projects may be funded through Bonneville lease-purchase agreements. The lease-purchases obligate Bonneville to make expenditures to acquire the use of the related facilities and are identified on an as needed basis. Bonneville may also make related expenditures to facilitate lease-purchase opportunities.

Expansion Investments

Expansion investments continue to make significant infrastructure improvements and additions to the Bonneville transmission system to assure reliable transmission operations in the Northwest and fall into two categories: Internally driven Expansion requests, which are derived from system engineering studies, technology innovation research, system operations and maintenance functions, and system event analysis. Externally driven Expansion Investment requests, which are derived from governmental initiatives and regulations, consumer demand, and the integration of customer load service and generation needs.

These investments are categorized into:

1. Main Grid – System investments affecting the major interties or internal paths and flowgates that transfer bulk power across the system.
2. Area & Customer Service – System investments related to geographical load service areas.
3. Upgrades & Additions – Upgrades are system investments that replace existing assets to increase capacity, reliability, or functionality and Additions are net new assets added to the system.
4. Projects Funded in Advance – System investments that are requested, and funded in advance, by customers.

Congressionally approved Production Tax Credits (PTC) for renewable energy enacted in 2005 were extended through 2023. The PTC begins to phase out after 2023. The incentives created by these credits, along with Renewable Portfolio Standards (RPS) mandates implemented by the states of Oregon, Washington, and California, have spurred a large number of renewable projects interconnection requests to the Bonneville transmission system grid. As of September 30, 2021, Bonneville had interconnected between 5,878 MW and 6,228 MW of renewable qualified generation projects. Bonneville has more than 20,000 MW in additional renewable (wind, solar, biomass, geothermal, etc.) interconnection requests still remaining in the study queue. Solar project interconnection requests are currently making up the majority of the new requests in Bonneville’s queue. The current projections are possibly 9,100 MW of renewable generation projects interconnected by 2025. Much of the remaining generation project transmission demand is the result of the Renewable Portfolio Standards and other legislations enacted by Oregon and Washington that require retail utilities to acquire more than 8,000 MW of renewable energy in the Northwest by 2025, some of which will connect to Bonneville. Exports of power from the Northwest to California are currently limited by California laws to 2,000 MW to 2,500 MW. If California chooses to amend its laws to allow more exports from the Northwest, the exports will be limited to about 6,000 MW by the ratings of the physical infrastructure between the Northwest and California. Bonneville could possibly expect another 1,000 to 2,000 MW to connect to our system in that event. Also in the BPA transmission interconnection request queue is approximately 2,500 MW of natural gas fired generation. Efficiency improvements to the FCRPS hydro units that qualify as renewable are also proposed between 2018 and 2024.

In June 2008, Bonneville's first Network Open Season (NOS) received 153 requests from 28 customers for 6,410 MW of new service, about three-fourths for wind energy integration. Bonneville subsequently offered 1,782 MW of new transmission service on its existing system. Bonneville identified four new Main Grid capital projects from the 2008 NOS: (1) McNary-John Day 500 kV transmission line (part of West of McNary Reinforcements Group 1); (2) Big Eddy-Knight 500 kV transmission line and substation (part of West of McNary Reinforcements Group 2); (3) Central Ferry- Lower Monumental 500 kV Reinforcement (formerly Little Goose Area Reinforcement); and (4) I-5 Corridor 500 kV Reinforcement. Construction of the McNary-John Day 500 kV transmission line is complete and Bonneville has completed construction of the Big Eddy-Knight project and the Central Ferry-Lower Monumental 500 kV Reinforcement project. On May 18, 2017, Bonneville announced its decision to not build the I-5 Corridor Reinforcement Project. Bonneville continues to work with constituents and stakeholders to study more cost-effective options to mitigate the current limitations along this path. Public meetings began in July 2017 to address alternatives to building. An update to Bonneville's Available Transfer Capability (ATC) methodology increased the available transmission service on the Westside paths by a few hundred MW. Other alternatives, such as energy storage devices, are still being evaluated.

Bonneville's 2009, 2010, 2013, 2016, 2019, 2020, and 2021 study processes for new Transmission Service Requests (TSR) total 23,875 MW, including approximately 6,600 MW of wind project interconnection and 4,300 MW of solar project interconnection. The 2010 study process identified the Montana to Washington project, for which environmental review was begun, however, the original requests to support this project have been subsequently withdrawn and so all work on the project was terminated. Subsequent TSRs also require this project, and BPA is now undertaking Preliminary Engineering Activities on it again to move wind generation in Montana to the Northwest. The 2016 and 2019 study processes re-identified the Montana to Washington and Garrison to Ashe projects to move new wind generation in Montana to the Northwest. The requests to support the Garrison to Ashe project have been subsequently withdrawn so that project was terminated. The 2013 study process identified upgrades to the Monroe-Novelty Hill 230-kV transmission line which were re-identified for additional new requests in the 2016 study process. The 2016 study process identified network upgrades in Central Oregon, Walla Walla, Washington and across the Raver-Paul flowgate. The 2019 study process identified additional reinforcements across the Raver-Paul flowgate, the same Central Oregon and Walla Walla projects, and some significant impacts to third parties, specifically Portland General Electric and Puget Sound Energy. The 2020 study process identified an additional Schultz-Raver Series Capacitor project. The 2021 study process identified major reinforcements to transfer more power to the loads on the Olympic peninsula. Efforts are currently underway to provide required studies capacity to requesting customers.

Sustain Investments

Sustain investments are made to maintain the health of the existing infrastructure to assure reliable transmission in the Pacific Northwest. These replacements enable continued compliance with national reliability standards, replace aging and obsolete equipment, and remove constraints that limit economic trade or the ability to maintain the transmission system.

In 2009, Bonneville Transmission Services (TS) began implementing best practice frameworks that provide a standardized structure and approach to Asset Management. As a result, TS's Asset Management Strategies, derived from the Agency's Strategic Plan, drive Bonneville's Asset Plans, which determine its capital and expense investment priorities. Sustain investments are forecasted, prioritized within asset programs, and optimized across the asset base for asset planning and approval. BPA now bundles both sustain and expand capital projects in an effort to improve execution and to lower risks and costs. TS's capital program does remain somewhat fluid and subject to changes as the complexity of the transmission system produces unexpected needs resulting from equipment failure, climate/weather incidents, changes in performance and/or operation of connected systems, outage schedules and conflicts, updated regulations, customer interconnection requests, etc. For these and other reasons, specificity with Sustain investments in the transmission system is somewhat limited.

The TS Sustain Program Asset Programs include:

1. Steel Lines – Transmission lines with steel structures including footings, insulators assemblies, vibration dampers, grounding systems, conductor, ground wire.
2. Wood Lines – Transmission lines with wood structures including cross arm systems, insulator assemblies, vibration dampers, grounding systems, conductor, ground wire.

3. Rights-of-Way – Real property including land parcels, easements, use right, access roads.
4. AC Substations – Substations managing AC current including transformers, reactors, shunt capacitors, power circuit breakers, circuit switchers, series capacitors, disconnect switches.
5. Power System Controls and System Telecommunications – Control and communication equipment including SCADA, transfer trips, fiber, communications, SONET, Telephone, RAS.
6. System Protection and Control – Control equipment including relays, Control Houses, meters.
7. DC Substations – Celilo DC converter station, Static VAR Compensators, DC control systems.
8. Control Centers – Various control equipment and software.
9. Tools and Equipment Acquisition Program (TEAP) –Tools, equipment, fleet.
10. Facilities – Non-electric facilities including warehouses, operational structures, hangar, and maintenance centers.

Notwithstanding that the capital program for TS is subject to change, Bonneville has identified several general areas where capital investments will occur.

Bonneville will continue to fund fiber optic communications facilities needed to meet Bonneville’s projected operational needs. To the extent that these investments create temporary periods of excess fiber optic capacity, such dark fiber capacity can be made available to telecommunications providers and to non-profits to meet public benefit internet access needs for rural areas and other needs in Bonneville’s service area. Bonneville’s investments in fiber optics, including the role of the private sector in building fiber optic networks, is consistent with the “Fiber Optic Cable Plan” submitted to Congress on May 24, 2000, accompanying the FY 2000 Energy and Water Development Appropriations Act. In accordance with this plan, when possible, Bonneville will establish partnerships with fiber optic facility and service providers to meet its needs.

In December 2004, Congress passed and the President signed the Commercial Spectrum Enhancement Act (CSEA, Title II of P.L. 108-494), creating the Spectrum Relocation Fund (SRF) to streamline the relocation of federal systems from certain spectrum bands to accommodate commercial use by facilitating reimbursement to affected agencies of relocation costs. The Federal Communications Commission has auctioned licenses for reallocated federal spectrum, which will facilitate the provision of Advanced Wireless Services to consumers. Funds were made available to agencies in FY 2007 for relocation of communications systems operating on the affected spectrum. These funds are mandatory and will remain available until expended, and agencies will return to the SRF any amounts received in excess of actual relocation costs. The estimated Bonneville cost of this relocation was \$48.7 million. The project was completed in November 2013 with a cost of approximately \$40 million and the operational system performance was being observed during FY 2014 and early FY 2015 to determine that it has achieved comparable capability as defined under the CSEA. Bonneville determined in December 2014 that comparable capability had been achieved.

Bonneville began participating in a new spectrum relocation effort in FY 2015. The NTIA has approved and, in July 2014, web-posted federal agency relocation plans, including the Bonneville relocation plan. The FCC held an auction of this spectrum on November 13, 2014. Bonneville received an additional \$5.2 million from the Spectrum Relocation Fund on July 29, 2015, to fully pay for this new relocation effort, including, as in the prior relocation, the purchase and installation of new digital radio equipment.

As part of the Homeland Security Presidential Directives, Bonneville has completed a physical security assessment of all critical facilities and is implementing security enhancements at these facilities. These security enhancements increase controlled access to Bonneville’s facilities and provide video surveillance and monitoring capabilities.

Accomplishments

- Both BP-22 Draft Record of Decision (ROD) and Terms and Conditions (TC-22) were issued in June 2021 and the final ROD was issued in late July.
- Integrated 5,878 MW of renewable energy through September 2021 on Bonneville’s transmission system
- Completed the addition of a 500kV transformer for wind hubs at John Day and Central Ferry Substations.
- Completed the Bonneville-Hood River line upgrade.
- Completed the Lane-Wend -1 line rebuild: rebuild Lane to Walt section.

- Completed the Mone line relay replacement and re-termination of Bays 4 and 5 project.
- Completed the replacement of Raver Reactor Banks 3 and 4.
- Completed the security enhancements at BELL substation and maintenance yards
- Completed the addition of a new 230kV transformer, breaker and disconnects at Longview substation.
- Completed 5 Grid Modernization projects, with 32 more approved and under development.
- Completed Morrow Flats UEC Phase 2 L0389
- Completed Holcomb Naselle 1 line rebuild.
- Completed Ostrander and Malin Substation Security Enhancements.

Explanation of Changes

Bonneville’s budget includes \$558.3 million in FY 2023 for TS Capital which is a 5.1 percent increase from the FY 2022 forecasted level. The FY 2023 budget increases the levels for Area & Customer Services (\$23.0 million), Upgrade & Addition (+\$36.6 million), and PFIA (\$5.6 million) while decreases the levels for Main Grid (-\$6.4 million) and System Replacements (-\$31.8 million).

Strategic Asset Management

Transmission Services provides transmission and energy services while integrating renewable resources across the Pacific Northwest. This effort is coordinated throughout Bonneville in conjunction with the Strategic Asset Management Plan (SAMP) development. TS continues to implement integrated detailed Asset Plans to serve the region:

1. To improve system adequacy, reliability, and availability, Bonneville has embarked on major transmission infrastructure projects. The identified projects reinforce the transmission system and help meet the region’s future power needs. These projects address multiple challenges, such as integration of renewable energy, the need to relieve a number of congested transmission paths, the challenge to keep up with growing energy demands, and the need to meet changing regulatory and customer requirements.
2. Open access policy in support of competitive markets for load and generation.
3. The replacement of aging assets is vital to the reliability of the existing transmission system. To that end, TS has developed specific long-term strategies for the following asset categories:
 - a. Substations AC
 - b. Power System Control/System Telecommunications
 - c. Wood Lines
 - d. Steel Lines
 - e. Rights of Way (ROW), (Land Rights, Access Roads, and Vegetation Management)
 - f. System Protection and Control
 - g. Control Centers
 - h. Non-Electric Facilities

The following external factors present the strongest impact to overall achievement of the program’s strategic goal:

- Continually changing economic and institutional conditions
- Competitive dynamics
- Ongoing changes in the electric industry
- Siting issues

Main Grid (\$K)		
FY 2021 Actuals	FY 2022 Estimate	FY 2023 Estimate
3,137	12,583	6,219

Overview

Bonneville’s strategic objectives for Main Grid projects are to assure compliance with the NERC and WECC reliability criteria, provide voltage support, provide a reliable transmission system for open access, and provide for relief of transmission system congestion. During this budgeting period, projects are planned that will provide transmission reinforcement and voltage support to major load areas that are primarily west of the Cascade Mountains.

Continued investments in Main Grid assets include:

Monroe Line Re-termination

- FY 2021. Completed construction
- FY 2022. No planned capital projects
- FY 2023. No planned capital projects

Schultz-Wautoma 500KV Series Capacitors

- FY 2021. Began construction
- FY 2022. Continue construction
- FY 2023. Complete construction

Montana-Washington

- FY 2021. No planned capital projects.
- FY 2022. Begin Design of TSEP Montana to Washington Project
- FY 2023. Complete design, begin construction.

Continue Planning Studies to: (all years)

- Identify infrastructure additions.
- Identify projects driven by NERC and WECC reliability criteria.
- Identify system reactive needs to mitigate unacceptable low or high voltage problems and other system additions.
- Relieve transmission system congestion and integrate new generation facilities.

**Area & Customer Service
(\$K)**

FY 2021 Actuals	FY 2022 Estimate	FY 2023 Estimate
53,030	48,562	71,520

Overview

Bonneville’s strategic objective for Area and Customer Service projects is to assure that Bonneville meets reliability standards and contractual obligations to its load service areas.

Continued investments in Area & Customer Service assets include:

Hooper Springs Substation

- This project was completed in FY 2020 and is owned by Lower Valley Energy.

Midway-Grandview 115 kV Line upgrade

- FY 2021. No planned capital projects
- FY 2022. No planned capital projects
- FY 2023. No planned capital projects

Puget Sound Area Northern Intertie (PSANI)

- FY 2021. Continued construction
- FY 2022. Complete construction
- FY 2023. No planned capital projects

McNary Substation 500/230 kV Bank Addition

- FY 2021. No planned capital projects
- FY 2022. No planned capital projects
- FY 2023. No planned capital projects

Paul Substation 500 kV Shunt Reactor Addition

- FY 2021. No planned capital projects
- FY 2022. No planned capital projects
- FY 2023. No planned capital projects

Big Eddy Breaker Additions

- FY 2021. No planned capital projects
- FY 2022. No planned capital projects
- FY 2023. Begin scoping and design

Drummond 115kV Breaker Additions

- FY 2021. No planned capital projects.
- FY 2022. No planned capital projects.
- FY 2023. No planned capital projects.

Midway –Ashe Double Circuit 230kV Line

- FY 2021. No planned capital projects
- FY 2022. Finalize design and begin construction
- FY 2023. Continue construction

Carlton Substation Upgrade

- FY 2021. Began design
- FY 2022. Begin construction
- FY 2023. Continue construction

Conkelley Substation Retirement

- FY 2021. Completed design
- FY 2022. Begin construction
- FY 2023. Continue construction

South Tri-Cities Reinforcement

- FY 2021. No planned capital projects
- FY 2022. Begin design
- FY 2023. Begin construction

LaPine Substation Upgrade TSEP – 2016

- FY 2021. No planned capital projects
- FY 2022. Begin design
- FY 2023. Begin construction

Longview Transformer Addition

- FY 2021. Continued construction
- FY 2022. Continue construction
- FY 2023. Complete construction

Continuous Activities (all years)

Continue preliminary engineering and design for miscellaneous facilities required to meet contractual obligations and maintain reliable service for Bonneville's service area.

**Upgrades & Additions
(\$K)**

FY 2021 Actuals	FY 2022 Estimate	FY 2023 Estimate
74,154	76,860	113,430

Overview

Bonneville’s strategic objectives for Upgrades and Additions are to replace older 60 Hz (Hertz) communications and controls with newer technology including fiber optics in order to maintain or enhance the capabilities of the transmission system; to implement special remedial action control schemes to accommodate new generation and mitigate immediate operational and market constrained paths; and to support communications and remedial action schemes, among other proposals.

During this budget period, Bonneville will complete design, material acquisition, construction, and activation of several fiber optics facilities to provide bandwidth capacity and high-speed data transfers to eventually replace microwave analog radios, which are technologically obsolete and nearing the end of their useful life. Temporarily, in some areas, excess dark fiber capacity is being offered for a term to telecommunications providers or to public entities such as public utilities, schools, libraries, and hospitals, providing them access to high-speed telecommunication services as a public benefit.

Continued investments in Upgrades & Additions assets include:

VHF Radio System Upgrade

- FY 2021. Completed construction
- FY 2022. No planned capital projects
- FY 2023. No planned capital projects

VCC (Vancouver Control Center)

- FY 2021. Began Scoping and design
- FY 2022. Complete design and begin demolition and construction
- FY 2023. Continue construction

Bell-Boundary #DC SONET Ring Upgrade

- FY 2021. No planned capital projects
- FY 2022. No planned capital projects
- FY 2023. No planned capital projects

Operational Megabit Ethernet (OMET) System

- FY 2021. Project on pause.

500 kV Spares at Wind Integration Substations

- FY 2021. Continued construction
- FY 2022. Complete construction
- FY 2023. No planned capital projects

Ross Station Service Upgrade

- FY 2021. Began design
- FY 2022: Finish design and start construction
- FY 2023: Complete construction

Continuous Activities (all years)

- Upgrading two miles of fiber between Bonneville Power House and Bonneville Control House.
- Planning, design, material acquisition, and construction of special remedial action control schemes required for interconnecting new generation projects and mitigating immediate constrained paths.
- Planning, design, material acquisition, and construction of various system additions and upgrades necessary to maintain a reliable system for Bonneville's service area.
- Construction of secondary fiber related projects and digital radio system upgrades to improve the operational telecommunication system.
- Material procurement and construction to upgrade the main fiber optic backbone system (#KC and #NC systems).

**System Replacements
(\$K)**

FY 2021 Actuals	FY 2022 Estimate	FY 2023 Estimate
217,271	337,765	305,991

Overview

Bonneville’s strategic objectives for the Sustain Program are to replace high-risk, obsolete, and maintenance-intensive facilities and equipment and to reduce the chance of equipment failure by: (1) replacing high voltage transformers and power circuit breakers which are at or near the end of their useful life; (2) replacing risky, outdated and obsolete control and communications equipment and systems, including mandated replacements due to legislation; and (3) replacing all other existing high-risk equipment and facilities affecting the safety and reliability of the transmission system. Transmission Services uses a total economic cost model to determine priorities for replacement.

Continued investments in System Replacements assets include:

Continuous Activity (all years)

Non-Electric Replacements

- Continue non-electric replacements as necessary.
- Continue the design, material acquisition, and construction for the Access Road program capital component and the Land Rights program capital component in support of the Lines and ROW Programs.
- Continue design and construction of capital improvements for identified existing facilities.
- Continue replacement of tools, equipment, and vehicle fleet.
- Replace four BPA helicopter’s with four new helicopter’s from FY 2023-2024 utilizing General Services Administration exchange sale authority.

Electric Replacements

- Continue replacement of system protection and control equipment and other substation and line facilities as needed to maintain reliability using Reliability Centered Maintenance criteria. Such replacements include relays, annunciators, oscillographs, metering, and various types of communication related equipment replacing and migrating analog to digital technology and SCADA equipment.
- Begin design and replacement of the Keeler and Maple Valley SVC units. Completion scheduled for FY 2023.
- Continue replacement of under-rated and high maintenance substation equipment.
- Continue replacing insulators and refurbishing foundations on 500 kV Lines.
- Continue replacement of older generations of digital equipment that is obsolete.
- Continue replacing critical, operational tools and business systems at the Dittmer and Munro Control Centers.
- Continue replacing deteriorating wood pole transmission line structures, spacer dampers, and insulators.

**Projects Funded in Advance
(\$K)**

FY 2021 Actuals	FY 2022 Estimate	FY 2023 Estimate
63,292	55,542	61,166

Overview

This category includes those facilities and/or equipment where Bonneville retains control or ownership, but which are funded or financed by a third party, revenue, or with reserves, either in total or in part.

Continued investments in PFIA assets include:

Umatilla Electrical Cooperative - Phase 2

- FY 2021. Completed construction
- FY 2022. No planned capital projects
- FY 2023. No planned capital projects

Summit Ridge Wind Project

- FY 2021. No planned capital projects
- FY 2022. No planned capital projects
- FY 2023. No planned capital projects

Bakeoven Wind Project

- FY 2021. Began design
- FY 2022. Begin project construction
- FY 2023. Complete construction

Quenett Creek Load Service Project

- FY 2021. No planned capital projects
- FY 2022. Start design
- FY 2023. Begin construction

PacifiCorps' Ponderosa Project Vitesse

- FY 2021. No planned capital projects.
- FY 2022. No planned capital projects.
- FY 2023. No planned capital projects.

Midway-Ashe Line Project

- FY 2021. Began design
- FY 2022. Begin construction
- FY 2023. Complete construction

Avangrid Montague 1 Wind Project

- FY 2021. Began design
- FY 2022. Complete construction
- FY 2023. No planned capital projects

Invenergy's Heppner Wind Project

- FY 2021. No planned capital projects
- FY 2022. No planned capital projects
- FY 2023. No planned capital projects

Morrow Solar Project

- FY 2021. No planned capital projects
- FY 2022. Scoping and begin design
- FY 2023. Begin construction

2 Morrow Energy LLC's Ella 3 Wind Project

- FY 2021. No planned capital projects
- FY 2022. No planned capital projects
- FY 2023. No planned capital projects

Morrow Flat 230kV Shunt Reactor

- FY2021. Began scoping
- FY2022. Begin design
- FY2023. Start and complete construction

Whistling Ridge 230 kV Ring Bus Project

- FY 2021. No planned capital projects
- FY 2022. Begin Scoping and design
- FY 2023. Complete design and begin construction

Badger Canyon 1

- FY 2021. No planned capital projects
- FY 2022. Begin design
- FY 2023. Begin construction

Badger Canyon 2

- FY2021. Began scoping and design
- FY2022. Finish design and begin construction
- FY2023. Complete construction

Invenergy Crider Valley Wind

- FY 2021. No planned capital projects
- FY 2022. Begin design
- FY 2023. Begin construction

Boyd Ridge Substation

- FY 2021. Began design
- FY 2022. Begin construction
- FY 2023. Continue construction

McNary 230KV section bay addition

- FY 2021. Began scoping
- FY 2022. Begin design and start construction
- FY 2023. Continue construction

Continuous Activity (all years)

- Continue to integrate various new generation and line/load projects into Bonneville transmission grid based on requests placed and processed in accordance with transmission tariff.
- Continue planning studies to identify system impacts and needs regarding proposed new generation projects.

- Engineer and begin construction of several large wind generation interconnection substations.

Activities, Milestones, and Explanation of Changes (\$K)

FY 2022 Estimate	FY 2023 Estimate	Explanation of Changes FY 2023 vs FY 2022 Estimate
Transmission Services – Capital \$531,312	\$558,327	\$27,015/5.1%
<p>Main Grid \$12,583 Milestones:</p> <ul style="list-style-type: none"> • Continue construction of Schultz-Wautoma 500KV Series Capacitors. • Begin Design of TSEP Montana to Washington Project. 	<p>\$6,219 Milestones:</p> <ul style="list-style-type: none"> • Complete construction of Schultz-Wautoma 500KV Series Capacitors. • Complete design and begin construction TSEP Montana to Washington Project. 	<p>-6,364/-50.6%</p> <ul style="list-style-type: none"> • The decrease in the costs reflects a reshaping of funding needs for investment in the transmission system assets.
<p>Area & Customer Service \$48,562 Milestones:</p> <ul style="list-style-type: none"> • Finalize design and begin construction of Midway – Ashe Double Circuit 230kV line. • Begin construction of Carlton Substation Upgrade. • Begin construction of Conkelly Substation Retirement. • Begin design of South Tri-Cities Reinforcement. • Continue construction of Longview Transformer Addition. 	<p>\$71,520 Milestones:</p> <ul style="list-style-type: none"> • Begin scoping and design of Big Eddy Breaker Additions Project. • Continue construction of Midway – Ashe Double Circuit 230kV line. • Continue construction of Carlton Substation Upgrade. • Continue construction of Conkelly Substation Retirement. • Begin construction of South Tri-Cities Reinforcement. • Complete construction of Longview Transformer Addition. 	<p>\$22,958/47.3%</p> <ul style="list-style-type: none"> • The increase reflects additional funding needs for investment in the transmission system assets.

FY 2022 Estimate	FY 2023 Estimate	Explanation of Changes FY 2023 vs FY 2022 Estimate
<p>Upgrades & Additions \$76,860</p> <p>Milestones:</p> <ul style="list-style-type: none"> • Complete design and begin demolition and construction of Vancouver Control Center. • Complete construction of 500kV Spares at Wind Integration Substations. • Finish design and start construction of Ross Station Service Upgrade. 	<p>\$113,430</p> <p>Milestones:</p> <ul style="list-style-type: none"> • Continue construction of Vancouver Control Center. • Complete construction of Ross Station Service Upgrade. 	<p>\$36,570/47.6%</p> <ul style="list-style-type: none"> • The increase reflects additional funding needs for investment in the transmission system assets.
<p>Systems Replacements \$337,765</p>	<p>\$305,991</p>	<p>-\$31,774/-9.4%</p>

Milestones:

- Continue non-electric replacements as necessary.
- Continue the design, material acquisition, and construction for the Access Road program capital component and the Land Rights program capital component in support of the Lines and ROW Programs.
- Continue design and construction of capital improvements for identified existing facilities.
- Continue replacement of tools, equipment, and vehicle fleet.
- Continue replacement of BPA fixed-wing aircraft with a helicopter from FY 2022-2023 utilizing General Services Administration exchange sale authority.
- Continue replacement of system protection and control equipment and other substation and line facilities as needed to maintain reliability using Reliability Centered Maintenance criteria. Such replacements include relays, annunciators, oscillographs, metering, and various types of communication related equipment replacing and migrating analog to digital technology and SCADA equipment.
- Continue replacement of under-rated and high maintenance substation equipment.
- Continue replacing insulators and refurbishing foundations on 500 kV Lines.
- Continue replacement of older generations of digital equipment that is obsolete.
- Continue replacing critical, operational tools and business systems at the Dittmer and Munro Control Centers.

Milestones:

- Continue non-electric replacements as necessary.
- Continue the design, material acquisition, and construction for the Access Road program capital component and the Land Rights program capital component in support of the Lines and ROW Programs.
- Continue design and construction of capital improvements for identified existing facilities.
- Continue replacement of tools, equipment, and vehicle fleet.
- Replace four BPA helicopter's with four new helicopter's from FY 2023-2024 utilizing General Services Administration exchange sale authority.
- Continue replacement of system protection and control equipment and other substation and line facilities as needed to maintain reliability using Reliability Centered Maintenance criteria. Such replacements include relays, annunciators, oscillographs, metering, and various types of communication related equipment replacing and migrating analog to digital technology and SCADA equipment.
- Continue replacement of under-rated and high maintenance substation equipment.
- Continue replacing insulators and refurbishing foundations on 500 kV Lines.
- Continue replacement of older generations of digital equipment that is obsolete.
- Continue replacing critical, operational tools and business systems at the Dittmer and Munro Control Centers.
- Continue replacing deteriorating wood pole transmission line structures, spacer dampers, and insulators.

- The decrease in the costs reflects a reshaping of funding needs for investment in the transmission system assets.

FY 2022 Estimate	FY 2023 Estimate	Explanation of Changes FY 2023 vs FY 2022 Estimate
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- Continue replacing deteriorating wood pole transmission line structures, spacer dampers, and insulators.

Projects Funded in Advanced \$55,542

Milestone:

- Start design of Quenett Creek Load Service Project.
- Begin construction of Midway-Ashe Line Project.
- Scoping and begin design of Morrow Solar Project.
- Begin design of Badger Canyon 1 Project.
- Begin design of Invenergy Crider Valley Wind Project.
- Begin construction of Boyd Ridge Substation.

\$61,166

Milestones:

- Begin construction of Quenett Creek Load Service Project.
- Complete construction of Midway-Ashe Line Project.
- Begin construction of Morrow Solar Project.
- Begin construction of Badger Canyon 1 Project.
- Begin construction of Invenergy Crider Valley Wind Project.
- Continue construction of Boyd Ridge Substation.

\$5,625/10.1%

- The increase reflects additional funding needs for investment in the transmission system assets.

**Capital Information Technology & Equipment/Capitalized Bond Premium
Funding Schedule by Activity
Funding (\$K)**

	FY 2021 Actuals	FY 2022 Estimate	FY 2023 Estimate	FY 2021 vs FY 2020	
				\$	%
Capital Information Technology (IT) & Equipment/Capitalized Bond Premium					
Capital IT & Equipment	26,098	21,994	21,047	-947	-4.3%
Capitalized Bond Premium	0	0	0	0	0.0%
Total, Capital IT & Equipment/Capitalized Bond Premium	26,098	21,994	21,047	-947	-4.3%

Outyears (\$K)

	FY 2023 Estimate	FY 2024 Estimate	FY 2025 Estimate	FY 2026 Estimate	FY 2027 Estimate
Capital Information Technology (IT) & Equipment/Capitalized Bond Premium					
Capital IT & Equipment	21,047	19,703	19,040	17,369	21,272
Capitalized Bond Premium	0	0	0	0	0
Total, Capital IT & Equipment/Capitalized Bond Premium	21,047	19,703	19,040	17,369	21,272

Capital Information Technology & Equipment/Capitalized Bond Premium

Overview

Capital Information Technology (IT) provides for the acquisition of general and some dedicated special purpose capital information technologies, and acquisition of special-use capital and IT equipment in support of Bonneville's strategic objectives. This category also includes Bonneville's on-going efforts to facilitate delivery of a highly resilient organization able to anticipate, withstand, and effectively respond to disruptive events affecting it and its partners in the Northwest region. The four main areas of resiliency focus continue to include asset management, emergency management, crisis management, and continuity of operations.

Bonneville continues to move its IT infrastructure to a more efficient architecture. This FY 2023 Budget supports this effort. IT continues to eliminate redundancies in tools and applications, establish an agency-wide IT architecture with standardized IT purchasing criteria, standardize software licensing processes and minimize agency liabilities through stronger contracts, apply continuous improvement practices to IT project management, and implement an agency IT portfolio cost management strategy. The IT estimates in this FY 2023 Budget under Capital IT and Equipment include all IT functions within the agency except TS grid operations. See the Capital Program – TS section of this budget for additional discussion of grid operations-related IT requirements acquisitions.

Capital equipment provides for the acquisition of general and some dedicated special purchases of capital office furniture and equipment.

Bonneville can incur a bond premium when it repays a U.S. Treasury bond before the due date. When bonds are refinanced and premiums are incurred, the bond premiums can be capitalized. Historically, Bonneville generally has chosen to finance capitalized bond premiums with bonds issued to the U.S. Treasury, as envisioned by the Transmission Act.

**Capital Information Technology & Equipment
(\$K)**

FY 2021 Actuals	FY 2022 Estimate	FY 2023 Estimate
26,098	21,994	21,047

Overview

This category includes enhancements to Bonneville’s information technology processes to provide cost effective efficiencies for secure, timely, and accurate information. Investments will enable continued enhancements to Bonneville’s enterprise systems that are designed to link key information systems throughout Bonneville and improve business processes. Current efforts include continued functional process improvements in areas not included in the initial development phase. Other investments include acquisition of capital office furniture and equipment, capital automated data processing (ADP) based administrative telecommunications equipment, ADP equipment (hardware), and support of capital software development for certain Bonneville programs.

Continued investments in Capital IT & Equipment assets include:

Continuous Activity (all years)

Capital system developments in support of:

- Corporate IT Projects
- IT Infrastructure Projects
- Power IT Projects
- Transmission Services IT Projects (excluding grid operations)

**Capitalized Bond Premium
(\$K)**

FY 2021 Actual	FY 2022 Estimate	FY 2023 Estimate
0	0	0

Overview

Continue to assess financial market and when cost-effective, refinance available bonds as prudent.

Activities, Milestones, and Explanation of Changes (\$K)

FY 2022 Estimate	FY 2023 Estimate	Explanation of Changes FY 2023 vs FY 2022 Estimate
Capital Information Technology & Equipment/Capitalized Bond Premium \$21,994	\$21,047	\$-947/-4.3%
Capital Information Technology & Equipment \$21,994 Milestones: Capital system developments in support of: <ul style="list-style-type: none"> • Corporate IT Projects • IT Infrastructure Projects • Power IT Projects • Transmission Services IT Projects 	\$21,047 Milestones: Capital system developments in support of: <ul style="list-style-type: none"> • Corporate IT Projects • IT Infrastructure Projects • Power IT Projects • Transmission Services IT Projects 	• Decrease for investment in the IT system assets.
Capitalized Bond Premium \$0	\$0	\$0/0.0%

**Power Services – Operating Expense
Funding Schedule by Activity
Funding (\$K)**

	FY 2021 Actuals	FY 2022 Estimate	FY 2023 Estimate	FY 2023 vs FY 2022	
				\$	%
Power Services - Operating Expenses					
Production	1,042,552	888,663	912,109	23,446	2.6%
Associated Projects Costs	442,330	465,575	462,020	-3,555	-0.8%
Fish & Wildlife	240,573	246,893	246,581	-312	-0.1%
Residential Exchange Program	250,077	259,000	259,000	0	0.0%
NW Power & Conservation Council	10,985	11,942	12,431	489	4.1%
Energy Efficiency & Renewable Resources	145,497	155,685	150,734	-4,951	-3.2%
Total, Power Services - Operating Expenses	2,132,014	2,027,758	2,042,875	15,117	0.7%

Outyears (\$K)

	FY 2023 Estimate	FY 2024 Estimate	FY 2025 Estimate	FY 2026 Estimate	FY 2027 Estimate
Power Services - Operating Expenses					
Production	912,109	953,064	975,384	997,013	1,018,482
Associated Projects Costs	462,020	474,016	484,842	495,299	505,709
Fish & Wildlife	246,581	246,565	246,551	246,537	246,523
Residential Exchange Program	259,000	265,346	271,406	277,260	283,087
NW Power & Conservation Council	12,431	12,086	12,363	12,629	12,895
Energy Efficiency & Renewable Resources	150,734	154,427	157,954	161,361	164,752
Total, Power Services - Operating Expenses	2,042,875	2,105,504	2,148,500	2,190,099	2,231,449

Power Services – Operating Expense

Overview

Production includes certain Bonneville non-federal amortization (including Energy Northwest amortization), O&M costs for federal base system power system generation resources (including a large nuclear plant (CGS), business operations, and short- and long-term power purchases¹), acquisition of conservation, marketing of power, and oversight of the FCRPS hydroelectric projects and CGS. Bonneville develops power products and services to meet the needs of Bonneville's wholesale customers and acquires power as needed.

In FY 2018, Bonneville completed a long-term Resource Program, whose purpose is to assess BPA's future need for power and reserves and to develop an acquisition strategy to meet those projected needs. In the event that Bonneville does acquire output from a generating resource on a long-term basis, Bonneville will comply with section 6 of the Northwest Power Act and will modify its budget to reflect the acquisition.

Associated Projects Costs represents funding for operation and maintenance costs for the FCRPS hydroelectric projects, minor additions, improvements and replacements, and costs of the Corps of Engineers and Bureau of Reclamation hydroelectric projects in the Pacific Northwest, which serve many purposes. All agencies emphasize efficient power production from existing facilities and improvement of the performance and availability of power generating units. Bonneville pays additional financing costs of the FCRPS facilities through its Interest Expense and Capital Transfer budget programs. Bonneville provides funding for the operations and maintenance costs that are part of the USFWS's Lower Snake River Compensation Plan (LSRCP) hatcheries. Bonneville is responsible for annual payments to the Confederated Tribes of the Colville Reservation for their contribution to the production of hydropower by the Grand Coulee Dam in accordance with the Settlement Agreement between the United States and the Colville Tribes (April 1994). Additionally, the Spokane Tribe of Indians of the Spokane Reservation Equitable Compensation Act (Public Law 116-100), enacted on December 20, 2019, provides for equitable compensation to the Spokane Tribe of Indians of the Spokane Reservation for the use of tribal land for the production of hydropower by the Grand Coulee Dam, and for other purposes. Bonneville is pleased that this longstanding issue has been resolved equitably for the Spokane Tribe. The Act provides Bonneville and Northwest electric ratepayers cost certainty on this issue as we move toward discussions of long-term power sales contracts with our utility customers. Bonneville expenditures under the settlement that began in FY 2021 are estimated at \$6 million annually.

Bonneville's Fish and Wildlife Program provides for extensive protection, mitigation, and enhancement of Columbia River Basin fish and wildlife adversely affected by the development and operation of the FCRPS. Bonneville satisfies its fish and wildlife responsibilities by funding projects and activities designed to be consistent with the Council's Program under the Northwest Power Act. Consistent with the Council's Program, Bonneville also implements measures to aid in the protection of fish and wildlife in the Columbia River and its tributaries, under the ESA (see ESA discussion in the Power Services – Capital Overview section).

Bonneville's mitigation expenditures will focus on activities that benefit Columbia River Basin fish and wildlife resources, following priorities established through ESA consultations, agreements with resource managers, and the Council's Program, including actions that:

- increase survival of ESA-listed and non-listed fish at FCRPS dams and reservoirs;
- increase survival of ESA-listed and non-listed fish throughout their life cycle by protecting and enhancing important habitat areas;
- protect and enhance important wildlife habitat;
- use hatcheries to contribute to conservation and recovery of ESA-listed and non-listed fish;
- provide offsite mitigation projects and habitat, passage, and other improvements that address factors limiting improvements of target species; and
- support a focused and well-coordinated research, monitoring, and evaluation program.

¹ Including expenses associated with the use of power financial instruments to hedge Bonneville's exposure to market price risk and certain index sales contract provisions as permitted by Bonneville's internal power transacting risk management guidance.

The Energy and Water Development Appropriations Act of 1996 added section 4(h)(10)(D) to the Northwest Power Act, directing the Council to appoint an ISRP “to review a sufficient number of projects” proposed to be funded through Bonneville’s annual fish and wildlife budget “to adequately ensure that the list of prioritized projects recommended is consistent with the Program.” The Northwest Power Act further states that “in making its recommendations to Bonneville, the Council shall consider the impact of ocean conditions on fish and wildlife populations and shall determine whether the projects employ cost effective measures to achieve program objectives.” Today, most mitigation projects funded by Bonneville receive ISRP review as part of the Council recommendation process. The Council has shifted to a multi-year project review cycle during which the ISRP reviews categories of projects grouped together.

The Council’s major activities include the periodic preparation of a Northwest Conservation and Electric Power Plan (a 20-year electric energy demand and resources forecast and conservation program – known as the Power Plan) and the Fish and Wildlife Program. The Northwest Power Act directs Bonneville’s funding of the Council, subject to certain limits based on forecasted Bonneville power sales, be included in Bonneville’s annual budget to Congress. The cost of funding the Council is recovered through Bonneville’s power rates.

Bonneville’s Energy Efficiency program promotes the efficient use of energy in the loads of customers and supports Bonneville’s acquisition of conservation as the region’s lowest cost resource. Such actions will: 1) meet energy efficiency targets; 2) achieve a least cost resource mix; 3) lessen the cost impacts of power purchases; 4) avoid the costs of ramping programs and infrastructure up and down; 5) extend the value of the FCRPS to customers; and 6) build the region’s resource portfolio with energy efficiency. Bonneville is also exploring how best to integrate demand-side management, distributed generation, and other leading-edge technologies into its generation and transmission planning processes.

Bonneville’s Energy Efficiency program offers several ways for customer utilities to participate in energy efficiency. Program components include: (1) standard offer efficiency measures and custom projects, which result in customer proposals to conserve energy through such programs as residential weatherization; commercial lighting; heating, ventilation, and air conditioning (HVAC); industrial processes and lighting; and irrigated agriculture; (2) third-party delivery programs, such as Comfort Ready Home, Energy Smart Industrial, and the Green Motors programs; (3) programs to help regional federal installations reduce energy use, including federal hatcheries and irrigation districts, and to support the Corps of Engineers and Bureau of Reclamation in their efforts to reduce energy use; (4) efficiency achieved independently through the market or through codes and standards, i.e. Momentum Savings; and (5) market transformation through the Northwest Energy Efficiency Alliance (NEEA).

Bonneville’s Energy Efficiency program reflects BPA’s commitment to promote and acquire energy conservation as directed by the Northwest Electric Power Planning and Conservation Act.

Bonneville acquires conservation energy savings from its firm power customers under long-term Energy Conservation Agreements. Customers also perform self-funded conservation. Bonneville also provides research, evaluation, contract support, NEEA support, and emerging technology development.

The Residential Exchange Program (REP) was created by section 5(c) of the Northwest Power Act to extend the benefits of low-cost federal power to the residential and small farm loads of Pacific Northwest retail electric utilities that have high average system costs. These benefits are passed directly to the consumers. Currently, the region’s six investor-owned utilities (IOUs) and two of the region’s consumer-owned utilities are actively participating in the REP. Payments under the REP are made to individual IOUs based on the difference between Bonneville’s utility-specific Priority Firm (PF) Exchange rates and each utility’s average system cost (ASC), times a utility’s residential and small farm loads. ASCs are determined in accordance with BPA’s 2008 Average System Cost Methodology (ASCM). Participating retail utility ASCs are established in a public process that occurs prior to and during Bonneville’s power rate cases. Bonneville’s utility-specific PF Exchange rates are determined each rate period. As described below, Bonneville and regional parties reached a settlement of the REP in 2011 under which the total amount of REP benefits available to the IOUs was established through 2028. Payments to the IOUs are made monthly based on historical invoiced exchange loads and the terms of the settlement.

Over the past decade, and prior to the settlement, regional parties filed multiple lawsuits challenging Bonneville's implementation of the REP. These lawsuits were consolidated into four cases that were stayed before the U.S. Court of Appeals for the Ninth Circuit. On July 26, 2011, Bonneville adopted a regionally supported settlement, referred to as the 2012 REP Settlement. Under the settlement, the region's six IOUs will receive about \$4.1 billion in REP payments over the 17-year term of the settlement, beginning at \$182.1 million in FY 2012, and increasing to \$286.1 million in FY 2028. In addition to this settlement, Bonneville has reached related REP settlements with two consumer-owned utilities. A single challenge to the 2012 REP Settlement was dismissed by the U.S. Court of Appeals for the Ninth Circuit in October of 2013.

Explanation of Changes

Bonneville's budget includes \$2,042.9 million in FY 2023 for Power Services operating expenses, which is an increase of 0.7 percent over the FY 2022 forecasted level.

The FY 2023 budget decreases the level for Associated Projects Costs (-\$3.6 million), Fish & Wildlife (-\$0.3 million), and Energy Efficiency & Renewable Resources (-\$5.0 million) while increases the level for Production (\$23.4 million) and Planning Council (\$0.5 million). The FY 2023 budget maintains the level for Residential Exchange at \$259 million.

Production (\$K)		
FY 2021 Actuals	FY 2022 Estimate	FY 2023 Estimate
1,042,552	888,663	912,109

Overview

Power Purchases: Includes power purchased to cover power supply obligations as well as balancing loads with generation from the hydro system. These power purchases can be made in the form of long-term purchases to meet BPA's contract obligations to its utility and other customers based on long-term planning requirements or they can be made within the year due to the monthly shape of the customers' loads and the monthly shape of the hydroelectric generation. Also, power purchases can be made within the month and within the day to fill temporary shortages due to fluctuations in the hydro system capability and in BPA's load.

Power Scheduling/Marketing: Scheduling and marketing (buy/sell) of electric energy with Bonneville's customers and the Pacific Northwest's interconnected utilities. Scheduling includes Power Services' implementation of physical and memo power schedules and associated transmission schedules, implementation of Electronic Tagging (ETag) in accordance with NERC and in accordance with FERC, and implementation of electronic scheduling.

Columbia Generating Station (CGS): Bonneville includes the project capability of CGS, a non-federal nuclear power plant, in the marketing of federal power to meet Bonneville's long term firm power supply obligations. CGS is on a 24-month fuel and outage cycle. Maintenance and refueling outage occurred in the fall of 2021.

Continued investments in Production include:

Continuous Activity (all years)

- Provide oversight of all power supply contracts and related projects from which Bonneville acquires generation capability to ensure that all Bonneville approval rights are protected; coordinate, communicate, and administer agreements, issues, and programs between Bonneville and the project owners.
- Provide wind resource integration services for wind generation.
- Power Purchases.
- Power Scheduling/Marketing.
- Provide oversight of all contracts signed to date. Pursue cost-effective means to mitigate capacity demands associated with interconnecting large amounts of wind into the Bonneville system.
- Pursue acquisition of additional cost-effective generation to meet load growth.
- Provide oversight on the wind resource integration services currently purchased by public power customers and offer additional renewable resource shaping services to such customers using wind generation to serve their load.

Associated Projects
(\$K)

FY 2021 Actuals	FY 2022 Estimate	FY 2023 Estimate
442,330	465,575	462,020

Overview

Support FCRPS project costs and work to strengthen interagency and regional relationships to improve project performance, supporting functions, and to better understand project resource requirements and costs. This helps to maintain FCRPS reliability and system performance, as well as to attain Bonneville’s strategic business objectives.

Continued investments in Associated Projects include:

Continuous Activity (all years)

Bureau of Reclamation:

- Continue direct funding Reclamation O&M power activities.

Corps of Engineers:

- Continue direct funding Corps of Engineers O&M power activities.

Fish & Wildlife
(**\$K**)

FY 2021 Actuals	FY 2022 Estimate	FY 2023 Estimate
240,573	246,893	246,581

Overview

Bonneville implements a mature fish and wildlife mitigation program based on recommendations made by the region’s fish and wildlife management agencies and tribes to the Council. Several recent Council reviews have made additional fish and wildlife project recommendations to Bonneville. Bonneville, in coordination with the Council, reviews new and on-going projects for consistency with the Council’s Program and purposes of the Northwest Power Act. Bonneville reviews and resets project-specific funding commitments annually, including projects under the FCRPS BiOps and other agreements. Bonneville informs its funding decisions with the management objectives and priorities in the Council’s Program (including ISRP reviews) and the Accords extension as it integrates their implementation with actions necessary to fulfill ESA responsibilities. Regular coordination on implementation priorities continues among Bonneville, the Council, federal resource management agencies, states, Tribes, and others.

Continued investments in Fish & Wildlife include:

Continuous Activity (all years)

- **Anadromous Fish:** Continue implementing both ongoing and new projects that support ESA-listed species and other measures called for under the current FCRPS BiOps, the Washington Estuary Agreement, the Kalispel Agreement, and the Willamette and Southern Idaho agreements and new amendments to extend the 2018 Columbia Basin Fish Accord Extensions. Prioritize projects that address the factors that contribute most to mitigation success and that fulfill Bonneville’s responsibility for mitigating the impacts from the FCRPS. Implement and develop activities that protect and enhance tributary and estuary habitat, improve mainstream habitat, reduce potentially harmful hatchery practices on ESA-listed populations, and contribute to sustainable fisheries.
- **Resident Fish:** Implement activities to mitigate the impacts of the FCRPS on lamprey, sturgeon, and bull trout and promote the reproduction and recruitment of Kootenai River white sturgeon. These activities have been selected in response to the USFWS’s 2000 bull trout and 2006 Libby BiOps, the Council Program, and the new amendments to extend the 2018 Columbia Basin Fish Accord Extensions.
- **Mitigation using resident fish to offset anadromous fish losses (substitution):** mitigate for reservoir power operation impacts to resident fish and wildlife by seeking projects that benefit both simultaneously. Those resident fish habitat acquisition projects that meet Bonneville’s Capitalization Policy will be funded under the capital portion of Bonneville’s Fish and Wildlife budget and credited for both fish and wildlife where appropriate.
- **Wildlife:** Use existing Bonneville policies to continue the current effort to mitigate wildlife in a manner consistent with the Council Program and fulfill commitments in wildlife agreements such as the Kalispel Agreement, Willamette Wildlife Agreement, and Southern Idaho Wildlife Agreement. Those wildlife projects that meet Bonneville’s Capitalization Policy will be funded under the capital portion of Bonneville’s Fish and Wildlife budget and credited against both wildlife and fish obligations according to Bonneville’s crediting policy and applicable mitigation contracts.

**Residential Exchange, Northwest Power and Conservation Council, and Energy Efficiency & Renewable Resources
(\$K)**

FY 2021 Actuals	FY 2022 Estimate	FY 2023 Estimate
406,559	426,627	422,165

Overview

Residential Exchange Program (REP)

- Includes forecasted REP benefits based on the 2012 REP Settlement.

Northwest Power and Conservation Council

- Continue support of the Council activities, as directed under the Northwest Power Act, including regional power plan development and maintenance and fish and wildlife program activities.

Energy Efficiency Resources

- Conservation Purchases: Provide programmatic savings reimbursements and energy efficiency incentives to Bonneville customers to purchase conservation savings. This includes performance payments and Energy Smart Reserved Power payments for federal installations and fish hatcheries and irrigation districts.
- Conservation Infrastructure: All support for programs and operations, including third-party program implementation, contract support, market research (Momentum Savings research), evaluation, and emerging technology research.
- Market Transformation: Support for NEEA's market transformation initiatives. NEEA identifies barriers and opportunities to increase the market adoption of efficiency by leveraging its regional partnerships.

Activities, Milestones, and Explanation of Changes (\$K)

FY 2022 Estimate	FY 2023 Estimate	Explanation of Changes FY 2023 vs FY 2022 Estimate
Power Services - Operating Expense \$2,027,758	\$2,042,875	\$15,117/0.7%
Production \$888,663 Milestones: <ul style="list-style-type: none"> • Continue to provide oversight of all signed contracts. • Continue to provide wind resource integration services for customer wind generation. 	\$912,109 Milestones: <ul style="list-style-type: none"> • Continue to provide oversight of all signed contracts. • Continue to provide wind resource integration services for customer wind generation. 	\$23,446/2.6% <ul style="list-style-type: none"> • The increase is due to higher CGS and support costs.
Associated Project Costs \$465,575 Milestones: <ul style="list-style-type: none"> • Continue direct funding of Corps of Engineers and Bureau of Reclamation O&M power activities. 	\$462,020 Milestones: <ul style="list-style-type: none"> • Continue direct funding of Corps of Engineers and Bureau of Reclamation O&M power activities. 	\$-3,555/-0.8% <ul style="list-style-type: none"> • The decrease reflects changes to security, BiOP requirements, non-routine extraordinary maintenance, WECC/NERC compliance activities, and improvements, replacements, and minor additions at the projects.
Fish & Wildlife Costs \$246,893 Milestones: <ul style="list-style-type: none"> • Continue implementing both ongoing and new projects that support ESA-listed species and other measures called for under the current FCRPS BiOps, the 2018 Fish Accord extensions, the Washington Estuary Agreement, the Kalispel Agreement, the Southern Idaho Agreement, and the Willamette Agreement. 	\$246,581 Milestones: <ul style="list-style-type: none"> • Continue implementing both ongoing and new projects that support ESA-listed species and other measures called for under the current FCRPS BiOps, the 2018 Fish Accord extensions, the Washington Estuary Agreement, the Kalispel Agreement, the Willamette Agreement, and the Southern Idaho Agreement. 	\$-312/-0.1% <ul style="list-style-type: none"> • The decrease in the costs reflect funding associated with the BiOps, 2018 Fish Accord extension commitments, and Northwest Power Act activities.

FY 2022 Estimate	FY 2023 Estimate	Explanation of Changes FY 2023 vs FY 2022 Estimate
Residential Exchange Program \$259,000 Milestones: <ul style="list-style-type: none"> Continue to provide REP benefits. 	\$259,000 Milestones: <ul style="list-style-type: none"> Continue to provide REP benefits. 	\$0/0.0% <ul style="list-style-type: none"> No change in scheduled amount of REP payments payable to the IOUs prescribed by the Residential Exchange Settlement.
NW Power & Conservation Council \$11,942 Milestones: <ul style="list-style-type: none"> Continue support of the Council activities, as directed under the Northwest Power Act, including regional power plan development and maintenance, and fish and wildlife program activities. 	\$12,431 Milestones: <ul style="list-style-type: none"> Continue support of the Council activities, as directed under the Northwest Power Act, including regional power plan development and maintenance, and fish and wildlife program activities. 	\$489/4.1% <ul style="list-style-type: none"> The small increase reflects higher funding and continuing emphasis on the NW Power and Conservation Council.
Energy Efficiency & Renewable Resources \$155,685 Milestones: <ul style="list-style-type: none"> Continue close-out of the legacy conservation resource acquisition contracts, which support Bonneville’s contractual obligation to serve customer loads. Continue to support utility incentive programs. Continue to support regional energy efficiency programs. Continue supporting energy efficiency at direct serve federal agencies. 	\$150,734 Milestones: <ul style="list-style-type: none"> Continue close-out of the legacy conservation resource acquisition contracts, which support Bonneville’s contractual obligation to serve customer loads. Continue to support utility incentive programs. Continue to support regional energy efficiency programs. Continue supporting energy efficiency at direct serve federal agencies. 	\$-4,951/-3.2% <ul style="list-style-type: none"> The decrease reflects our cost cutting effort while continuing emphasis on the energy efficiency program consistent with the Power Plan.

**Transmission Services – Operating Expense
Funding Schedule by Activity
Funding (\$K)**

	FY 2021 Actuals	FY 2022 Estimate	FY 2023 Estimate	FY 2023 vs FY 2022	
				\$	%
Transmission Services - Operating Expense					
Engineering	82,722	87,916	88,647	731	0.8%
Operations	209,303	204,201	207,608	3,408	1.7%
Maintenance	201,834	216,077	218,831	2,754	1.3%
Total, Transmission Services - Operating Expense	493,859	508,194	515,087	6,893	1.4%

	Outyears (\$K)				
	FY 2023 Estimate	FY 2024 Estimate	FY 2025 Estimate	FY 2026 Estimate	FY 2027 Estimate
Transmission Services - Operating Expense					
Engineering	88,647	91,058	93,140	95,150	97,151
Operations	207,608	214,149	219,219	224,116	228,991
Maintenance	218,831	224,782	229,919	234,880	239,819
Total, Transmission Services - Operating Expense	515,087	529,989	542,277	554,146	565,962

Transmission Services – Operating Expense

Overview

This activity provides for the transmission system services of engineering, operations, and maintenance for Bonneville's electric transmission system, and the associated power system control and communication facilities. Primary goals of this program are: 1) maintain the safety and reliability of the transmission system; 2) increase the focus on meeting customers' needs; 3) optimize the transmission system; 4) provide open access and non-discriminatory transmission service; and 5) improve Bonneville's cost effectiveness.

Explanation of Changes

Bonneville's budget includes \$515.1 million in FY 2023 for TS operating expense which is a 1.4 percent increase over the FY 2022 forecasted level. The increase still continues the operation and maintenance of Bonneville's transmission assets.

The FY 2023 budget increases the levels for Engineering (+\$0.7 million), Operations (+\$3.4 million), and Maintenance (+\$2.8 million).

Engineering (\$K)		
FY 2021 Actuals	FY 2022 Estimate	FY 2023 Estimate
82,722	87,916	88,647

Overview

Continue efforts to identify best methods for improving system reliability and maintenance practices and continue cost reduction efforts by identifying opportunities for low-cost reinforcement and voltage support of the existing transmission system.

Continued investments in Engineering include:

Continuous Activity (all years)

- **Research and Development (R&D):** Conduct research focused on technologies related to business challenges Bonneville faces including reliability, energy efficiency, and integration of renewable energy resources. Technologies of interest are identified in Bonneville's Technology Roadmaps. A portfolio of research is selected every year through Bonneville's Portfolio Decision Framework.
- **System Development Planning and Analysis:** Continue providing technical support and asset planning to deploy the Asset Management approach to sustain existing assets and expand the system to meet Agency objectives.
- **Technical Support:** Provide technical support activities, such as transmission system planning and studies to optimize portions of the system. Provide support for non-wires solutions studies and pilot projects.
- **Capital-to-Expense Adjustments:** Conduct annual analysis of Bonneville's outstanding capital work orders to assess whether they should be expensed. As obsolete inventory is identified and disposed of it is expensed.
- **Regulatory Fees:** WECC dues and loop flow payments, Department of Commerce/National Telecommunications and Information Administration licensing costs for radio frequencies, DOE Radio Spectrum staff and contractor support, and NERC Critical Infrastructure Protection (CIP) compliance program costs. Includes membership in a regional transmission planning organization.
- **Reimbursable Transactions:** Enter into written agreements with federal and non-federal entities that have work or services to be performed by Bonneville staff at the expense of the benefiting entities. The projects must be beneficial, under agreed upon criteria, to Bonneville operations and to the federal or non-federal entity involved or otherwise be aligned with or supportive of Bonneville's strategic objectives. Additionally, these activities generally contribute to more efficient or reliable construction of the federal transmission system or otherwise enhance electric service to the region.
- **Leased and Other Costs:** Includes leases, lease purchases, and other costs of financing transmission, delivery, and voltage support facilities when such arrangements are operationally feasible and cost effective to deliver power. Leases and lease purchases enable Bonneville to continue to invest in infrastructure to support a safe and reliable system for the transmission of power. Other costs included are the accrued interest costs associated with Large Generator Interconnection Agreements (LGIA).

Operations (\$K)		
FY 2021 Actuals	FY 2022 Estimate	FY 2023 Estimate
209,303	204,201	207,608

Overview

Substation Operations: Perform operations functions necessary to provide electric service to customers and to protect the federal investment in electric equipment and other facilities. Includes equipment adjustments, switching lines and equipment during emergencies or maintenance, isolating damaged equipment, restoring service to customers, inspecting equipment, and reading meters.

Power System Dispatching and Supporting Functions: Perform central dispatching, control, and monitoring of the electric operation of the federal transmission system. Also includes load, frequency, and voltage control of federal generating plants, and coordinating long- and short-term outages of system equipment. In addition, provides technical engineering support of dispatching function and provides all technical and systems support for Dittmer Control Center (DCC) and Munro Control Center (MCC).

Marketing and Sales: Provide management and direction of transmission rates and provide business strategy in marketing of transmission and ancillary products and services of Transmission Services. Involve customers and constituents in the process of product and rate development. Maintain accurate and complete historical records of current and past legacy transmission agreements. Provide guidance for current and future transmission contract negotiations. Provide financial analysis of market strategies. Monitor and report on the financial health of Transmission Services. Support cost management by effective reporting and analysis of current expenditures. Ensure official budget submittals reflect current management financial strategies and adequately fund transmission programs.

Transmission Scheduling: Provide non-discriminatory, open access to the Bonneville transmission system consistent with Bonneville's Open Access Transmission Tariff (OATT). Schedule transmission capacity to eligible Bonneville customers, which include customers acquiring services under Use of Facilities (UFT), Formula Power Transmission (FPT), Integration of Resources (IR), and Part II or Part III of the OATT. Manage the reservations and scheduling of all transmission services associated with the OATT. Update practices, policies, and commercial systems to accommodate a large diversity of resources, including wind.

Continuous Activity (all years):

- Continue to operate within parameters of NERC and WECC.
- Continue support of increased compliance activities related to the reliability of the transmission system, including cyber security.
- Continue developing facilities, policies, procedures, and implementing systems to support integrating the diversity of resources into the transmission grid.
- Continue preparation for increased complexity of transmission scheduling, power system operations, and dispatching, including congestion management and outage scheduling.
- Continue developing the Dittmer Scheduling Center and Munro Scheduling Center facilities to support continuous real time scheduling operations from both facilities.
- Continue developing a long-term approach to optimize transmission availability through streamlined, cost-effective, and sustainable processes.
- Continue to address succession planning issues across key functions.
- Continue development and implementation of business systems and tools.

Maintenance (\$K)		
FY 2021 Actuals	FY 2022 Estimate	FY 2023 Estimate
201,834	216,077	218,831

Overview

In all aspects of maintenance, Bonneville is continuing the use of Reliability Centered Maintenance (RCM) practices. The use of RCM practices is focused on improving system reliability, increasing availability, and meeting new and existing compliance regulations at lowest lifecycle costs. In addition, Bonneville is deploying Asset Management to optimize maintain/replace decision making. Maintenance costs are expected to increase as Bonneville addresses the aging transmission system, meeting reliability standards, including vegetation management, and environmental constraints associated with construction, enhancement, and maintenance of the system. The Bonneville transmission system encompasses 15,108 circuit miles on over 11,860 right-of-way miles (many of these miles are through rugged, inaccessible terrain).

Continued investments in Maintenance include:

Continuous Activity (all years)

- Continue to improve performance to meet System Average Interruption Frequency Index (SAIFI) and System Average Interruption Duration Index (SAIDI) targets.
- Continue refining processes and procedures for monitoring and tracking compliance activities related to the reliability of the transmission system.
- Continue to improve system availability performance through new maintenance procedures and work practices.
- Continue to develop and implement work practices and procedures for implementation of a new specialty crew using bare-hand live line practices for maintenance of high-voltage transmission lines.
- Continue increased emphasis on replacement of line hardware (life extension programs for insulators, connectors, dampers, and fiber optic cable hardware).
- Continue to prepare for the impact of an expected high attrition rate among Bonneville’s aging workforce by recruiting apprentices and replacements for critical minimum crew size workload positions.
- Increase outage-scheduling planning and coordination to increase customer satisfaction and system availability.
- Maintain vegetation management levels to ensure system reliability.
- Continue access road work to provide reliable access to facilities and ensure environmental compliance.
- Continue improving environmental stewardship.

Transmission Line Maintenance: Maintain and repair 15,108 circuit miles of high voltage transmission lines, of which over 4,734 circuit miles are 500 kV transmission extra-high voltage (EHV). Maintenance of EHV lines is two and one-half times more labor-intensive than maintenance of lower transmission voltages, although more efficient in transmission of power. This responsibility includes maintaining transmission rights-of-way to ensure system reliability, safety, and environmental compliance. Adopt work practices that improve system availability, reliability, and compliance.

Right-of-Way Maintenance: Maintain over 11,860 of Bonneville’s right-of-way miles. This responsibility includes vegetation management, danger tree management, and access road maintenance to ensure system reliability, safety, and environmental compliance. Adopt procedures and processes that improve system availability, reliability, environmental compliance, and reliability compliance. Continue to deploy new technologies such as LiDAR (Light Detection and Ranging) to reliably and cost-effectively manage vegetation.

Substation Maintenance: Maintain and repair the transmission system power equipment located in Bonneville’s 262 substations. Work includes inspections, diagnostic testing, and predictive and condition-based maintenance.

System Protection Maintenance: Maintain relaying metering and remedial action scheme equipment used to control and protect the electrical transmission system and to meter energy transfers for the purpose of revenue billing. Additionally,

field-engineering services provide technical advice and assure the correct operation of power system relaying and special control systems used to support interregional energy transmission capabilities.

Power System Control Maintenance: Test, repair, and provide field engineering support of Bonneville's highly complex equipment, communications, and control systems, including seven major microwave systems, fiber optic systems, and other critical communications and control equipment that support the power system.

Non-Electric Plant Maintenance: Maintain and manage Bonneville's non-electric facilities. Includes site, building, and building utility maintenance; custodial services; station utility; and other maintenance service activities, as well as facilities asset management on Bonneville-owned or Bonneville-leased non-electric facilities.

Maintenance Standards and Engineering: Establish, monitor, and update system maintenance standards, policies, and procedures, and review and update long-range plans for maintenance of the electric power transmission system.

Activities, Milestones, and Explanation of Changes (\$K)

FY 2022 Estimate	FY 2023 Estimate	Explanation of Changes FY 2023 vs FY 2022 Estimate
Transmission Services - Operating Expense \$508,194	\$515,087	\$6,893/1.4%
Engineering \$87,916 Milestones: <ul style="list-style-type: none"> Continue efforts to identify best methods for improving system reliability and maintenance practices. Continue cost reduction efforts by identifying opportunities for low-cost reinforcement and voltage support of the existing transmission system. 	\$88,647 Milestones: <ul style="list-style-type: none"> Continue efforts to identify best methods for improving system reliability and maintenance practices. Continue cost reduction efforts by identifying opportunities for low-cost reinforcement and voltage support of the existing transmission system. 	\$731/0.8% <ul style="list-style-type: none"> The small increase reflects continued emphasis on system reliability standards compliance and research and development.
Operations \$204,201 Milestones: <ul style="list-style-type: none"> Continue to operate within parameters of NERC and WECC. Continue support of increased compliance activities related to the reliability of the transmission system including cyber security. 	\$207,608 Milestones: <ul style="list-style-type: none"> Continue to operate within parameters of NERC and WECC. Continue support of increased compliance activities related to the reliability of the transmission system including cyber security. 	\$3,408/1.7% <ul style="list-style-type: none"> The increase reflects continued emphasis on reliability compliance activities, resource integration activities, key strategic initiative, security, and control center systems support.
Maintenance \$216,077 Milestones: <ul style="list-style-type: none"> Continue to improve performance to meet System Average Interruption Frequency Index (SAIFI) and System Average Interruption Duration Index (SAIDI) targets. 	\$218,831 Milestones: <ul style="list-style-type: none"> Continue to improve performance to meet System Average Interruption Frequency Index (SAIFI) and System Average Interruption Duration Index (SAIDI) targets. 	\$2,754/1.3% <ul style="list-style-type: none"> The increase reflects implementation of facilities asset management plans, continued implementation of live-line crew, NERC/WECC compliance activities related to land rights and vegetation management, continuing maintenance program activities, including system protection, right-of-way, line maintenance, and performance improvements.

Interest, Pension, and Post-retirement Benefits
Operating Expense
Funding Schedule by Activity
Funding (\$K)

	FY 2021 Actuals	FY 2022 Estimate	FY 2023 Estimate	FY 2022 vs FY 2021	
				\$	%
Interest, Pension, and Post-retirement Benefits					
BPA Bond Interest (Net)	147,171	122,275	123,967	1,692	1.4%
BPA Appropriation Interest	0	0	0	0	0.0%
Corps of Engineers Appropriation Interest	39,113	37,069	37,268	199	0.5%
Lower Snake River Comp Plan Interest	186	186	186	0	0.0%
Bureau of Reclamation Appropriation Interest	1,211	1,155	1,155	0	0.0%
Bond Premiums Paid/Discounts (not capitalized)	(441)	1,326	2,327	1,001	75.5%
Subtotal, Interest – Operating Expense	187,240	162,011	164,902	2,891	1.8%
Additional Pension, and Post-retirement Benefits	33,365	31,273	32,306	1,033	3.3%
Total, Interest, Pension, and Post-retirement Benefits	220,605	193,284	197,208	3,924	2.0%

Outyears (\$K)

	FY 2023 Estimate	FY 2024 Estimate	FY 2025 Estimate	FY 2026 Estimate	FY 2027 Estimate
Interest, Pension, and Post-retirement Benefits					
BPA Bond Interest (Net)	123,967	132,775	135,960	144,010	150,423
BPA Appropriation Interest	0	0	0	0	0
Corps of Engineers Appropriation Interest	37,268	37,495	38,153	38,926	39,137
Lower Snake River Comp Plan Interest	186	186	372	0	186
Bureau of Reclamation Appropriation Interest	1,155	1,155	1,155	1,155	1,155
Bond Premiums Paid/Discounts (not capitalized)	2,327	28,295	14,365	23,123	28,885
Subtotal, Interest – Operating Expense	164,902	199,905	190,004	207,213	219,785
Additional Pension, and Post-retirement Benefits	32,306	33,097	33,853	34,583	35,310
Total, Interest, Pension, and Post-retirement Benefits	197,208	233,003	223,857	241,797	255,095

Interest, Pension and Post-retirement Benefits Operating Expense

Overview

Interest expense provides for interest due on bonds issued to the U.S. Treasury and appropriations repayment responsibilities. The appropriation repayments relate to capital investment in FCRPS hydroelectric generating and transmission facilities of Bonneville, and the Corps of Engineers and Bureau of Reclamation. Investments were financed by Congressional appropriations and Bonneville borrowings from the U.S. Treasury. Bonneville repays these amounts through revenue raised in its power sales and transmission services revenues.

Since initially receiving U.S. Treasury borrowing authority in 1974 under the Transmission Act, all of Bonneville's U.S. Treasury borrowing has been at market rates. As of October 1, 1996, all of Bonneville's repayment obligations on FCRPS appropriated investment (Corps of Engineers and Bureau of Reclamation FCRPS investment and Bonneville investment financed with appropriations prior to the Transmission Act that were unpaid as of September 30, 1996) were restructured and assigned new current-market interest rates. The Bonneville Appropriations Refinancing Act of 1996 (Refinancing Act) called for re-setting (reducing) the unpaid principal of FCRPS appropriations and reassigning (increasing) interest rates. New principal amounts were established as of the beginning of FY 1997 at the present value of the principal and annual interest payments Bonneville would make to the U.S. Treasury for these obligations in the absence of the legislation, plus \$100.0 million. The new principal amounts were assigned prevailing market interest rates as of October 1, 1996. Bonneville's outstanding appropriations repayment obligations at the end of FY 1996 were \$6.7 billion with a weighted average interest rate of 3.4 percent. The refinancing reduced the principal amount to \$4.1 billion with a weighted average interest rate of 7.1 percent. Implementation of the refinancing took place in 1997 after audited actual financial data were available. Pursuant to the legislation, Bonneville submitted its calculations and interest rate assignments implementing the Refinancing Act to the U.S. Treasury for its review and approval. The U.S. Treasury approved the implementation calculations in July 1997. The Refinancing Act also calls for all future FCRPS appropriations to be assigned prevailing U.S. Treasury yield curve interest rates. Bonneville's outstanding appropriations may be prepaid prior to their stated maturities.

Interest estimates are a function of costs of U.S. Treasury borrowing to Bonneville, repayment status of outstanding FCRPS investments, and projected additions to FCRPS plant in service. These estimates may change over time depending on forecasted market conditions. The interest cost estimates include the impact of Bonneville's appropriation refinancing legislation.

Federal employees associated with the operation of the FCRPS participate in either the Civil Service Retirement System or the Federal Employees Retirement System. Employees may also participate in the Federal Employees Health and Benefit Program and the Federal Employee Group Life Insurance Program. As a Federal agency, all post-retirement activity is managed by the Office of Personnel Management; therefore, neither the assets of the plans or the accumulated plan benefits are recorded by Bonneville. Since 1997, Bonneville has made additional annual contributions to the General Fund of the U.S. Treasury (receipt account 892889) related to the Federal post-retirement benefit programs provided to employees associated with the operation of the FCRPS.

**Capital Transfers
Funding Schedule by Activity
Funding (\$K)**

Capital Transfers

	FY 2021 Actual	FY 2022 Estimate	FY 2023 Estimate	FY 2022 vs FY 2021	
				\$	%
BPA Bond Amortization ¹	756,700	699,000	734,000	35,000	5.0%
Bureau of Reclamation Appropriation Amortization	0	0	0	0	0.0%
BPA Appropriation Amortization	0	0	0	0	0.0%
Corps of Engineers Appropriation Amortization	49,099	0	0	0	0.0%
Lower Snake River Comp Plan Amortization	0	0	0	0	0.0%
Total, Capital Transfers	805,799	699,000	734,000	35,000	5.0%

Outyears (\$K)

Capital Transfers

	FY 2023 Estimate	FY 2024 Estimate	FY 2025 Estimate	FY 2026 Estimate	FY 2027 Estimate
BPA Bond Amortization ¹	734,000	744,000	709,000	747,000	758,000
Bureau of Reclamation Appropriation Amortization	0	0	0	0	0
BPA Appropriation Amortization	0	0	0	0	0
Corps of Engineers Appropriation Amortization	0	0	0	0	0
Lower Snake River Comp Plan Amortization	0	0	0	0	0
Total, Capital Transfers	734,000	744,000	709,000	747,000	758,000

Overview

This activity conveys funds to the U.S. Treasury for repayment of certain FCRPS costs not included in the Associated Project Costs budget. Since capital transfers are cash transactions, they are not considered budget obligations.

¹ Bonneville "Bond(s)" in this FY 2023 Budget refers to all bonds issued by Bonneville to and advances received from the U.S. Treasury. This reference is consistent with section 13(a) of the Transmission Act (P.L. 93-454), which defines Bonneville bonds as all bonds, notes, and other evidence of indebtedness issued and sold by Bonneville to the U.S. Treasury.

Additional Tables

BONNEVILLE POWER ADMINISTRATION

TOTAL OBLIGATIONS/OUTLAYS

Current Services

(in millions of dollars)

FISCAL YEAR

BP-1 SUMMARY^{1/3/}

	2021		2022		2023		2024	2025	2026	2027
	Oblig.	Outlays	Oblig.	Outlays	Oblig.	Outlays	Oblig.	Oblig.	Oblig.	Oblig.
1 Residential Exchange Program	250	250	259	259	259	259	265	271	277	283
2 Power Services ^{2/}	1,531	1,531	1,355	1,355	1,375	1,375	1,427	1,460	1,492	1,524
3 Transmission Services	841	841	984	984	1,012	1,012	1,114	1,207	1,202	1,107
4 Conservation & Energy Efficiency	145	145	156	156	151	151	154	158	161	165
5 Fish & Wildlife	282	282	290	290	290	290	277	272	262	262
6 Interest/ Pension ^{4/}	221	221	193	193	197	197	233	224	242	255
7 Associated Project Cost - Capital	202	202	264	264	281	281	300	307	314	320
8 Capital Equipment	26	26	22	22	21	21	20	19	17	21
9 Planning Council	11	11	12	12	12	12	12	12	13	13
10 Projects Funded in Advance	63	63	56	56	61	61	48	35	35	37
11 Capitalized Bond Premiums	0	0	0	0	0	0	0	0	0	0
12 TOTAL OBLIGATIONS/OUTLAYS^{3/}	3,573	3,573	3,591	3,591	3,660	3,660	3,850	3,965	4,015	3,987

REVENUES AND REIMBURSEMENTS

Current Services
(in millions of dollars)

BP-1 SUMMARY	FISCAL YEAR									
	2021		2022		2023		2024	2025	2026	2027
	Oblig.	Outlays	Oblig.	Outlays	Oblig.	Outlays	Oblig.	Oblig.	Oblig.	Oblig.
13 Revenues ^{5/}	3,700	3,700	3,943	3,943	3,908	3,908	3,984	4,002	4,018	4,037
14 Project Funded in Advance	63	63	56	56	61	61	48	35	35	37
15 TOTAL	3,763	3,763	3,999	3,999	3,969	3,969	4,032	4,037	4,053	4,074
16 BUDGET AUTHORITY (NET) ^{6/}	(159)		106		108		190	306	247	139
17 OUTLAYS (NET) ^{6/7/8}		(254)		(408)		(309)	(182)	(72)	(38)	(87)

These notes are an integral part of this table.

^{1/} This FY 2023 budget includes capital and expense estimates based on final spending proposals from Bonneville's BP-22 IPR process.

Capital funding levels reflect external factors such as the significant changes affecting West Coast power and transmission markets, along with planned infrastructure investments designed to address the long-term needs of the region.

Budget estimates included in this budget are subject to change due to rapidly changing economic and institutional conditions in the evolving electric utility industry.

^{2/} Power Services doesn't include Fish & Wildlife, Residential Exchange Program, Planning Council, Conservation & Energy Efficiency and Associated Project Costs which have been shown separately for display purposes.

^{3/} This budget has been prepared in accordance with PAYGO. Under PAYGO all Bonneville budget estimates are treated as mandatory and are not subject to the discretionary caps included in the Budget Control Act of 2011. These estimates support activities that are separate from discretionary activities and accounts. Thus, any changes to Bonneville estimates cannot be used to affect any other budget categories which have their own dollar caps. Because Bonneville's obligations are and will be incurred under pre-existing legislative authority, Bonneville is not subject to a "pay-as-you-go" test regarding its revision of current-law funding estimates.

For BP-1 table, the CJ reflects forecasted outlays while the yearend GTAS reflects the actual outlay in the Budget Appendix.

^{4/} See Interest Expense, Pension and Post-retirement Benefits and Capital Transfers section of this budget for a complete discussion of these cost estimates.

^{5/} Revenues, included in the Net Outlay formulation, are calculated consistent with cash management goals and assume a combination of adjustments. Assumed adjustments include the use of a combination of tools, including upcoming rate adjustment mechanisms, a net revenue risk adjustment, debt service refinancing strategies and/or short-term financial tools to manage net revenues and cash. Some of these potential tools will reduce costs rather than generate revenue, causing the same Net Outlay result. Adjustments for depreciation and 4(h)(10)(C) credits of the Northwest Power Act are also assumed.

^{6/} Bonneville received \$48.7 million of additional budget authority in FY 2007 to accommodate the work necessary to relocate the radio spectrum consistent with the Commercial Spectrum Enhancement Act (P.L. 108-494). In accordance with Federal law, Bonneville plans to return the forecasted unused balance of approximately \$8.2 million to the U.S. Treasury as soon as the National Telecommunications Information Administration notifies the Federal Communications Commission that the DOE relocation effort is complete.

^{7/} Net Outlay estimates are based on current cost savings to date and anticipated cash management goals. They are expected to follow anticipated management decisions throughout the rate period that, along with actual market conditions, will impact revenues and expenses. Actual Net Outlays are volatile and are reported in Report on Budget Execution and Budgetary Resources (SF-133). Actual Net Outlays could differ from estimates due to changing market conditions, streamflow variability, continued restructuring of the electric industry, and other reasons.

^{8/} FY 2021 Net Outlays are calculated using Bonneville's audited actuals. FYs 2022 to 2027 Net Outlays are based on BP-22 IPR assumptions and an escalation factor from using the FY 2019 Whitebook Loads and Resources Report.

EXPENSED OBLIGATIONS/OUTLAYS ^{1A/}

Current Services

(in millions of dollars)

FISCAL YEAR

BP-2	2021		2022		2023		2024	2025	2026	2027
	Oblig.	Outlays	Oblig.	Outlays	Oblig.	Outlays	Oblig.	Oblig.	Oblig.	Oblig.
1 Residential Exchange Program	250	250	259	259	259	259	265	271	277	283
2 Power Services ^{2/}	1,531	1,531	1,355	1,355	1,375	1,375	1,427	1,460	1,492	1,524
3 Transmission Services	494	494	508	508	515	515	530	542	554	566
4 Conservation & Energy Efficiency	145	145	156	156	151	151	154	158	161	165
5 Fish & Wildlife	241	241	247	247	247	247	247	247	247	247
6 Interest/ Pension ^{3/}	221	221	193	193	197	197	233	224	242	255
7 Planning Council	11	11	12	12	12	12	12	12	13	13
8 TOTAL EXPENSE	2,892	2,892	2,730	2,730	2,756	2,756	2,868	2,915	2,986	3,053
9 Projects Funded in Advance	63	63	56	56	61	61	48	35	35	37

CAPITAL OBLIGATIONS/OUTLAYS^{1/}

Current Services

(in millions of dollars)

FISCAL YEAR

BP-2 continued	2021		2022		2023		2024	2025	2026	2027
	Oblig.	Outlays	Oblig.	Outlays	Oblig.	Outlays	Oblig.	Oblig.	Oblig.	Oblig.
10 Transmission Services	348	348	476	476	497	497	584	664	648	541
11 Associated Project Cost	202	202	264	264	281	281	300	307	314	320
12 Fish & Wildlife	42	42	43	43	43	43	30	25	15	15
13 Capital Equipment	26	26	22	22	21	21	20	19	17	21
14 Capitalized Bond Premiums	0	0	0	0	0	0	0	0	0	0
15 TOTAL CAPITAL INVESTMENTS	617	617	805	805	842	842	934	1,015	994	897
16 TREASURY BORROWING AUTHORITY TO										
17 FINANCE CAPITAL OBLIGATIONS ^{4/}	617		805		842		934	1,015	994	897

These notes are an integral part of this table.

^{1/} This FY 2023 budget includes capital and expense estimates based on final spending proposals from Bonneville's BP-22 IPR process.

Capital funding levels reflect external factors such as the significant changes affecting West Coast power and transmission markets, along with planned infrastructure investments designed to address the long-term needs of the region.

Budget estimates included in this budget are subject to change due to rapidly changing economic and institutional conditions in the evolving electric utility industry.

^{2/} Power Services doesn't include Fish & Wildlife, Residential Exchange Program, Planning Council, Conservation & Energy Efficiency and Associated Project Costs which have been shown separately for display purposes.

^{3/} See Interest Expense, Pension and Post-retirement Benefits and Capital Transfers section of this budget for a complete discussion of these cost estimates.

^{4/} This budget has been prepared in accordance with PAYGO. Under PAYGO all Bonneville budget estimates are treated as mandatory and are not subject to the discretionary caps included in the Budget Control Act of 2011. These estimates support activities that are separate from discretionary activities and accounts. Thus, any changes to Bonneville estimates cannot be used to affect any other budget categories which have their own dollar caps. Because Bonneville's obligations are and will be incurred under pre-existing legislative authority, Bonneville is not subject to a "pay-as-you-go" test regarding its revision of current-law funding estimates.

BP-3

CURRENT SERVICES
(in millions of dollars)

CAPITAL TRANSFERS

FISCAL YEAR

Amortization:
 18 BPA Bonds
 19 Reclamation Appropriations
 20 BPA Appropriations
 21 Corps Appropriations
 22 Lower Snake River Comp Plan Amortization
 23 **TOTAL CAPITAL TRANSFERS**

	2021 Payment	2022 Payment	2023 Payment	2024 Payment	2025 Payment	2026 Payment	2027 Payment
	757	699	734	744	709	747	758
	0	0	0	0	0	0	0
	0	0	0	0	0	0	0
	49	0	0	0	0	0	0
	0	0	0	0	0	0	0
	806	699	734	744	709	747	758

24 **FULL-TIME EQUIVALENT (FTE)**

	2,825	3,000	3,000	3,000	3,025	3,075	3,125
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PROGRAM & FINANCING SUMMARY

Current Services

(in millions of dollars)

Identification Code: 89-4045-0-3-271

est.

Program by activities:

Operating expenses:

	2021	2022	2023	2024	2025	2026	2027
0.01 Power Services	1,089	889	912	953	975	997	1,018
0.02 Residential Exchange Program	250	259	259	265	271	277	283
Associated Project Costs:							
0.05 Bureau of Reclamation	150	152	153	155	159	162	166
0.06 Corps of Engineers	236	253	253	259	265	270	276
0.07 Colville Settlement	19	22	22	23	23	24	24
0.08 Spokane Settlement	6	6	5	6	6	6	6
0.19 U.S. Fish & Wildlife Service	31	33	29	32	32	33	34
0.20 Planning Council	11	12	12	12	12	13	13
0.21 Fish & Wildlife	241	247	247	247	247	247	247
0.23 Transmission Services	494	508	515	530	542	554	566
0.24 Conservation & Energy Efficiency	145	156	151	154	158	161	165
0.25 Interest	187	162	165	200	190	207	220
0.26 Pension and Health Benefits ^{1/}	33	31	32	33	34	35	35
0.91 Total operating expenses ^{2/}	2,892	2,729	2,755	2,868	2,915	2,986	3,053

Capital investment:

1.01 Power Services	202	264	281	300	307	314	320
1.02 Transmission Services	348	476	497	584	664	648	541
1.04 Fish & Wildlife	42	43	43	30	25	15	15
1.05 Capital Equipment	26	22	21	20	19	17	21
1.06 Capitalized Bond Premiums	0	0	0	0	0	0	0
1.07 Total Capital Investment ^{3/}	617	805	842	934	1,015	994	897
2.01 Projects Funded in Advance	63	56	61	48	35	35	37
10.00 Total obligations ^{4/}	3,573	3,590	3,659	3,850	3,965	4,015	3,987

These notes are an integral part of this table.

^{1/} See Interest Expense, Pension and Post-retirement Benefits and Capital Transfers section of this budget for a complete discussion of these cost estimates.

^{2/} Assumes expense obligations, not accrued expenses.

Power Services doesn't include Fish & Wildlife, Residential Exchange Program, Planning Council, Conservation & Energy Efficiency and Associated Project Costs which have been shown separately for display purposes.

^{3/} Assumes capital obligations, not capital expenditures.

^{4/} This FY 2023 budget includes capital and expense estimates based on final spending proposals from Bonneville's BP-22 IPR process.

For purposes of this table, this FY 2023 budget reflects, for FY 2021, forecast third party financing expense only for PFIA.

Capital funding levels reflect external factors such as the significant changes affecting West Coast power and transmission markets, along with planned infrastructure investments designed to address the long-term needs of the region.

Budget estimates included in this budget are subject to change due to rapidly changing economic and institutional conditions in the evolving electric utility industry.

Refer to 16 USC Chapters 12B, 12G, 12H, and Bonneville's other organic laws, including P.L. 100-371, Title III, Sec. 300, 102 Stat. 869, July 19, 1988, regarding Bonneville's ability to obligate funds.

Program and Financing (continued)

Current Services
(in millions of dollars)
est.

	2021	2022	2023	2024	2025	2026	2027
Financing:							
1000 Unobligated balance available, start of year. ^{5/}	10	10	8	0	0	0	0
1050 Unobligated balance available, end of year. ^{5/}	11	8	8	0	0	0	0
1900 Budget authority (gross)	3,571	4,104	4,078	4,221	4,343	4,300	4,213
Budget Authority:							
1400 Permanent Authority: Authority to borrow from Treasury (indefinite) ^{6/}	737	805	842	934	1,015	994	897
1600 Contract Authority	2,379						
1800 Spending authority from off-setting collections	3,763	3,999	3,969	4,032	4,037	4,053	4,074
1825 Portion applied to debt reduction	(757)	(699)	(734)	(744)	(709)	(747)	(758)
1850 Spending authority from offsetting collections (adjusted)	455	3,300	3,235	3,288	3,328	3,306	3,316
900 Total obligations	3,573	3,591	3,660	3,850	3,965	4,015	3,987
4110 Outlays (gross)	3,509	3,591	3,660	3,850	3,965	4,015	3,987
Adjustments to budget authority and outlays:							
Deductions for offsetting collections:							
4120 Federal funds	(51)	(90)	(90)	(90)	(90)	(90)	(90)
4121 Interest on Federal Securities	0	0	0				
4123 Non-Federal sources	(3,712)	(3,909)	(3,879)	(3,942)	(3,947)	(3,963)	(3,984)
4130 Total, offsetting collections	(3,763)	(3,999)	(3,969)	(4,032)	(4,037)	(4,053)	(4,074)
4160 Budget authority (net)	(159)	106	108	190	306	247	139
4170 Outlays (net)^{7/8/}	(254)	(408)	(309)	(182)	(72)	(38)	(87)

These notes are an integral part of this table.

^{5/} Reflects estimated cost for radio spectrum fund.

^{6/} The Permanent Authority: Authority to borrow (indefinite) from the U.S. Treasury amounts reflect both Bonneville's capital program financing needs and either the use of, or creation of, deferred borrowing. Deferred borrowing is created when, as a cash and debt management decision, Bonneville uses cash from revenues to liquidate capital obligations in lieu of borrowing at that time from the U.S. Treasury. This temporary use of cash on hand instead of borrowed funds creates the ability in future years to borrow money, when fiscally prudent. The FY 1989 Energy and Water Development Appropriations Act (P.L. 100-371 Of 7/19/88) confirmed that Bonneville has authority to incur obligations in excess of U.S. Treasury borrowing authority and cash in the BPA fund.

Total includes BPA's self-financing activities and funds for Radio Spectrum Relocation. In addition, BPA has negotiated with the U.S. Treasury access to a \$750 million short term note as part of the \$17.7 billion borrowing authority.

^{7/} Net Outlay estimates are based on current cost savings to date and anticipated cash management goals. They are expected to follow anticipated management decisions throughout the rate period that, along with actual market conditions, will impact revenues and expenses. Actual Net Outlays are volatile and are reported in Report on Budget Execution and Budgetary Resources (SF-133). Actual Net Outlays could differ from estimates due to changing market conditions, streamflow variability, continued restructuring of the electric industry, and other reasons.

Revenues, included in the Net Outlay formulation, are calculated consistent with cash management goals and assume a combination of adjustments. Assumed adjustments include the use of a combination of tools, including upcoming rate adjustment mechanisms, a net revenue risk adjustment, debt service refinancing strategies and/or short-term financial tools to manage net revenues and cash. Some of these potential tools will reduce costs rather than generate revenue, causing the same Net Outlay result. Adjustments for depreciation and 4(h)(10)(C) credits of the Northwest Power Act are also assumed.

This budget has been prepared in accordance with PAYGO. Under PAYGO all Bonneville budget estimates are treated as mandatory and are not subject to the discretionary caps included in the Budget Control Act of 2011. These estimates support activities that are separate from discretionary activities and accounts. Thus, any changes to Bonneville estimates cannot be used to affect any other budget categories which have their own dollar caps. Because Bonneville's obligations are and will be incurred under pre-existing legislative authority, Bonneville is not subject to a "pay-as-you-go" test regarding its revision of current-law funding estimates.

^{8/} FY 2021 Net Outlays are calculated using Bonneville's audited actuals. FYs 2022 to 2027 Net Outlays are based on BP-22 IPR assumptions and an escalation factor from using the FY 2019 Whitebook Loads and Resources Report.

**BONNEVILLE POWER ADMINISTRATION
BPA STATUS of U.S. TREASURY BORROWING
CURRENT SERVICES**

BP-4A

	Fiscal Year							
	2021				2022			
	Net Capital		Net Capital		Net Capital		Net Capital	
	Net Capital Obs	Obs Subject to BA	Net Capital Expend.	Bonds Out- Standing	Net Capital Obs	Obs Subject to BA	Net Capital Expend.	Bonds Out- Standing
Start-of-Year: Total	4,347	3,805	5,246	5,649	4,207	3,665	5,106	5,629
Plus: Annual Increase								
Cum.-Annual Treasury Borrowing	617	617	617	737	805	805	805	805
Treasury Borrowing (Cash)								
Less:								
BPA Bond Amortization	757	757	757	757	699	699	699	699
Net Increase/(Decrease):	(140)	(140)	(140)	(20)	106	106	106	106
Cum.-End-of-Year: Total	4,207	3,665	5,106	5,629	4,313	3,771	5,212	5,735
Total Remaining Treasury Borrowing Amount				2,071				11,965
Total Legislated Treasury Borrowing Amount				7,700				17,700

These notes are an integral part of this table.

In any given year, Bonneville may issue lower principal amount of bonds to the U.S. Treasury than forecast depending on net revenues, borrowing costs, and other cash management factors. In such cases, Bonneville accumulates a deferred borrowing balance that it accesses as necessary in the future.

Capital funding levels reflect external factors such as the significant changes affecting West Coast power and transmission markets, along with planned infrastructure investments designed to address the long-term needs of the region.

In this FY 2023 budget, Bonneville "bond(s)" refers to all bonds issued by Bonneville to and advances received from the U.S. Treasury. This reference is consistent with section 13 (a) of the Transmission Act, which defines Bonneville bonds as all bonds, notes, and other evidences of indebtedness issued and sold by Bonneville to the U.S. Treasury.

As in the past, Bonneville may pursue future restructuring of total debt as opportunities arise.

Budget estimates included in this budget are subject to change due to rapidly changing economic and institutional conditions in the evolving electric utility industry.

Cumulative advance amortization payments as of the end of FY 2021 are \$6,230 million.

Total includes BPA's self-financing activities. In addition, BPA has negotiated with the U.S. Treasury access to a \$750 million short term note as part of the \$17.7 billion borrowing authority.

Section 40110 of the Infrastructure Investment and Jobs Act of 2021, Public Law 117-58, enacted on November 15, 2021, provided the Bonneville Administrator with \$10 billion in additional permanent borrowing authority "...to assist in the financing, acquisition and replacement of the Federal Columbia Power System and to implement the authority of the Administrator of the Bonneville Power Administration..." Section 40110 specifies that the "obligation"...of the \$10 billion in additional borrowing authority...shall not exceed \$6 billion by fiscal year 2028.

**BONNEVILLE POWER ADMINISTRATION
BPA STATUS OF U.S. TREASURY BORROWING
CURRENT SERVICES**
(in millions of dollars)

BP-4B

	2023				2024			
	Net Capital		Net Bonds		Net Capital		Net Bonds	
	Net Capital	Obs Subject	Net Capital	Bonds Out-	Net Capital	Obs Subject	Net Capital	Bonds Out-
	Obs	to BA	Expend.	Standing	Obs	to BA	Expend.	Standing
Start-of-Year: Total	4,313	3,771	5,212	5,735	4,422	3,880	5,321	5,844
Plus: Annual Increase								
Cum.-Annual Treasury Borrowing	842	842	842	842	934	934	934	934
Treasury Borrowing (Cash)								
Less:								
Total BPA Bond Amortization	734	734	734	734	744	744	744	744
Net Increase/(Decrease):								
Total	108	108	108	108	190	190	190	190
Cum.-End-of-Year: Total	4,422	3,880	5,321	5,844	4,612	4,070	5,511	6,034
Total Remaining Treasury Borrowing Amount				11,856				11,666
Total Legislated Treasury Borrowing Amount				17,700				17,700

These notes are an integral part of this table.

In any given year, Bonneville may issue lower principal amount of bonds to the U.S. Treasury than forecast depending on net revenues, borrowing costs, and other cash management factors. In such cases, Bonneville accumulates a deferred borrowing balance that it accesses as necessary in the future.

Capital funding levels reflect external factors such as the significant changes affecting West Coast power and transmission markets, along with planned infrastructure investments designed to address the long-term needs of the region.

In this FY 2023 budget, Bonneville "bond(s)" refers to all bonds issued by Bonneville to and advances received from the U.S. Treasury. This reference is consistent with section 13 (a) of the Transmission Act, which defines Bonneville bonds as all bonds, notes, and other evidences of indebtedness issued and sold by Bonneville to the U.S. Treasury.

As in the past, Bonneville may pursue future restructuring of total debt as opportunities arise.

Budget estimates included in this budget are subject to change due to rapidly changing economic and institutional conditions in the evolving electric utility industry.

Cumulative advance amortization payments as of the end of FY 2021 are \$6,230 million.

Total includes BPA's self-financing activities. In addition, BPA has negotiated with the U.S. Treasury access to a \$750 million short term note as part of the \$17.7 billion borrowing authority.

Section 40110 of the Infrastructure Investment and Jobs Act of 2021, Public Law 117-58, enacted on November 15, 2021, provided the Bonneville Administrator with \$10 billion in additional permanent borrowing authority "...to assist in the financing, acquisition and replacement of the Federal Columbia Power System and to implement the authority of the Administrator of the Bonneville Power Administration..." Section 40110 specifies that the "obligation"...of the \$10 billion in additional borrowing authority...shall not exceed \$6 billion by fiscal year 2028.

BONNEVILLE POWER ADMINISTRATION
BPA STATUS of U.S. TREASURY BORROWING
CURRENT SERVICES
(in millions of dollars)

BP-4C

Fiscal Year

	2025				2026			
	Net Capital				Net Capital			
	Net Capital	Obs Subject	Net Capital	Bonds Out-	Net Capital	Obs Subject	Net Capital	Bonds Out-
	Obs	to BA	Expend.	Standing	Obs	to BA	Expend.	Standing
Start-of-Year: Total	4,612	4,070	5,511	6,034	4,918	4,376	5,817	6,340
Plus: Annual Increase								
Cum.-Annual Treasury Borrowing	1,015	1,015	1,015	1,015	994	994	994	994
Treasury Borrowing (Cash)								
Less:								
Total BPA Bond Amortization	709	709	709	709	747	747	747	747
Net Increase/(Decrease):								
Total	306	306	306	306	247	247	247	247
Cum.-End-of-Year: Total	4,918	4,376	5,817	6,340	5,164	4,622	6,063	6,586
Total Remaining Treasury Borrowing Amount				11,360				11,114
Total Legislated Treasury Borrowing Amount				17,700				17,700

These notes are an integral part of this table.

In any given year, Bonneville may issue lower principal amount of bonds to the U.S. Treasury than forecast depending on net revenues, borrowing costs, and other cash management factors. In such cases, Bonneville accumulates a deferred borrowing balance that it accesses as necessary in the future.

Capital funding levels reflect external factors such as the significant changes affecting West Coast power and transmission markets, along with planned infrastructure investments designed to address the long-term needs of the region.

In this FY 2023 budget, Bonneville "bond(s)" refers to all bonds issued by Bonneville to and advances received from the U.S. Treasury. This reference is consistent with section 13 (a) of the Transmission Act, which defines Bonneville bonds as all bonds, notes, and other evidences of indebtedness issued and sold by Bonneville to the U.S. Treasury.

As in the past, Bonneville may pursue future restructuring of total debt as opportunities arise.

Budget estimates included in this budget are subject to change due to rapidly changing economic and institutional conditions in the evolving electric utility industry.

Cumulative advance amortization payments as of the end of FY 2021 are \$6,230 million.

Total includes BPA's self-financing activities. In addition, BPA has negotiated with the U.S. Treasury access to a \$750 million short term note as part of the \$17.7 billion borrowing authority.

Section 40110 of the Infrastructure Investment and Jobs Act of 2021, Public Law 117-58, enacted on November 15, 2021, provided the Bonneville Administrator with \$10 billion in additional permanent borrowing authority "...to assist in the financing, acquisition and replacement of the Federal Columbia Power System and to implement the authority of the Administrator of the Bonneville Power Administration..." Section 40110 specifies that the "obligation"...of the \$10 billion in additional borrowing authority...shall not exceed \$6 billion by fiscal year 2028.

**BONNEVILLE POWER ADMINISTRATION
BPA STATUS of U.S. TREASURY BORROWING
CURRENT SERVICES**

(in millions of dollars)

BP-4D

	Fiscal Year			
	2027			
	Net Capital Obs to BA	Net Capital Obs to BA	Net Capital Expend.	Bonds Out- Standing
Start-of-Year: Total	5,164	4,622	6,063	6,586
Plus: Annual Increase				
Cum.-Annual Treasury Borrowing	897	897	897	897
Treasury Borrowing (Cash)				
Less:				
Total BPA Bond Amortization	758	758	758	758
Net Increase/(Decrease):				
Total	139	139	139	139
Cum.-End-of-Year: Total	5,304	4,762	6,203	6,726
Total Remaining Treasury Borrowing Amount				10,974
Total Legislated Treasury Borrowing Amount				17,700

These notes are an integral part of this table.

In any given year, Bonneville may issue lower principal amount of bonds to the U.S. Treasury than forecast depending on net revenues, borrowing costs, and other cash management factors. In such cases, Bonneville accumulates a deferred borrowing balance that it accesses as necessary in the future.

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**BONNEVILLE POWER ADMINISTRATION
POTENTIAL THIRD PARTY FINANCING TRANSPARENCY**

(in millions of dollars)

		Fiscal Year						
		2021	2022	2023	2024	2025	2026	2027
Transmission Services - Capital								
Requirements	Main Grid	3	13	6	12	14	9	9
	Area & Customer Services	53	49	72	59	47	47	49
	Upgrades & Additions	74	77	113	150	75	85	72
	System Replacements	217	338	306	363	528	506	411
	Projects Funded in Advance	63	56	61	48	35	35	37
	Total, Transmission Services - Capital	411	531	558	632	699	683	577
	Associated Project Costs - Capital							
Requirem	Associated Project Costs	202	264	281	300	307	314	320
	Projects Funded in Advance ^{1/}	0	0	0	0	0	0	0
	Total, Associated Project Costs - Capital	202	264	281	300	307	314	320
Federal and Non-Federal Funding								
Source	Projects Funded in Advance	63	56	61	48	35	35	37
	U.S. Treasury Borrowing Authority	549	740	778	884	971	961	861
Scenario								
Scenario	Projects Funded in Advance ^{1/}	0	0	0	0	0	0	0
	Third Party Financing	87	119	124	146	166	162	135
	Alternate Treasury Borrowing Authority	NA	621	654	738	805	799	726

These notes are an integral part of this table.

- 1/ In this instance, Projects Funded in Advance represents prepayment of Power customers' bills reimbursed by future credits and third party non-federal financing for Conservation initiatives. Also this category includes those facilities and/or equipment where Bonneville retains control or ownership which are funded or financed by a third party, revenue, or with reserves, either in total or in part.

The table above shows both the potential use of U.S. Treasury borrowing authority for transmission capital projects based on this FY 2023 budget and the use adjusted for potential third-party financing to fund appropriate capital expenditures when feasible in lieu of U.S. Treasury borrowing. Estimates included in this FY 2023 budget are uncertain and may change due to revised capital investment plans, changing economic conditions, and an evolving financial market environment. The estimates of third-party financing included in the table show a reduction in the use of U.S. Treasury borrowing and do not reflect the actual notional third party financing commitment Bonneville may enter into in that particular year. The difference of reduction in use of U.S. Treasury borrowing and the actual notional third party financing commitment is primarily due to the difference in the timing of financing transactions between U.S. Treasury and third-party financing for capital projects with multi-year construction schedules.

Bonneville's Third Party Financing for Transmission Services consists primarily of lease-purchase agreements, which are capitalized obligations that enable Bonneville to acquire the use of transmission facilities over time. Bonneville also undertakes the construction and installation of facilities from funds that customers advance to Bonneville for construction of BPA-owned facilities that assist the customers in obtaining necessary transmission service from Bonneville. These customers receive monetary payment credits in bills for transmission services from Bonneville up to the amount of funds advanced to Bonneville, plus interest.

Bonneville's historical Third Party Financing amounts may vary over time due to re-assignment of certain lease-purchase agreements to Treasury Financing.

Bonneville Status of U.S. Treasury Borrowing with Potential Third Party Financing & PFIA Scenario

With the potential use of third party financing assumed in the scenario above, Bonneville's total remaining U.S. Treasury Borrowing Amount would be extended to the following amounts. See BP-4 BPA Status of Treasury Borrowing- Current Services.

	Fiscal Year						
	2021	2022	2023	2024	2025	2026	2027
Start-of-Year: Total Bonds Outstanding	5,649	5,629	5,616	5,601	5,644	5,784	5,869
Plus:							
U.S. Treasury Borrowing (Cash)	737	805	842	934	1,015	994	897
Less:							
Potential Third Party Financing & PFIA	87	119	124	146	166	162	135
BPA Bond Amortization	757	699	734	744	709	747	758
Net Increase/(Decrease) Bonds Outstanding:	(20)	(13)	(16)	44	140	85	4
Cum.-End-of-Year: Total	5,629	5,616	5,601	5,644	5,784	5,869	5,873
Total Remaining U.S. Treasury Borrowing Amount	2,071	12,084	12,099	12,056	11,916	11,831	11,827
Total Legislated U.S. Treasury Borrowing Amount	7,700	17,700	17,700	17,700	17,700	17,700	17,700

U.S. TREASURY PAYMENTS
(in millions of dollars)

	FISCAL YEAR						
	2021	2022	2023	2024	2025	2026	2027
A. INTEREST ON BONDS & APPROPRIATIONS							
Bonneville Bond Interest							
1 Bonneville Bond Interest (net)	121	122	124	133	136	144	150
2 AFUDC ^{1/}	26	27	27	28	28	29	31
Appropriations Interest							
3 Bonneville	0	0	0	0	0	0	0
4 Corps of Engineers ^{2/}	39	37	37	37	38	39	39
5 Lower Snake River Comp. Plan	0	0	0	0	0	0	0
6 Bureau of Reclamation ^{3/}	1	1	1	1	1	1	1
7 Bond Premiums paid/Discounts (not capitalized)	0	1	2	28	14	23	29
8 Total Bond and Approp. Interest	187	189	192	228	218	236	251
B. ASSOCIATED PROJECT COST							
9 Bureau of Reclamation Irrigation Assistance	22	16	13	8	13	20	6
10 Bureau of Rec. O & M ^{4/}	0	0	0	0	0	0	0
11 Corps of Eng. O & M ^{4/}	0	0	0	0	0	0	0
12 L. Snake River Comp. Plan O & M ^{4/}	0	0	0	0	0	0	0
13 Total Assoc. Project Costs	23	16	13	8	13	20	6
C. CAPITAL TRANSFERS							
Amortization							
14 Bonneville Bonds ^{6/}	757	699	734	744	709	747	758
15 Bureau of Reclamation Appropriations	0	0	0	0	0	0	0
16 Corps of Engineers Appropriations	49	0	0	0	0	0	0
17 Lower Snake River Comp. Plan	0	0	0	0	0	0	0
18 Bonneville Appropriations	0	0	0	0	0	0	0
19 Total Capital Transfers ^{8/}	806	699	734	744	709	747	758
D. OTHER PAYMENTS							
20 Unfunded Post-Retirement Liability ^{5/}	33	31	32	33	34	35	35
21 TOTAL TREASURY PAYMENTS	1,049	935	971	1,013	975	1,038	1,051

These notes are an integral part of this table.

- ^{1/} This interest cost is capitalized and included in BPA's Transmission System Development, System Replacements, and Associated Projects Capital programs. AFUDC is financed through the sale of bonds.
- ^{2/} Includes interest on construction funding for Corp of Engineers (Corps) fish bypass facilities at Corps dams in the Columbia River Basin, including Lower Monumental, Ice Harbor, and The Dalles.
- ^{3/} Includes payments paid by Reclamation to the U.S. Treasury on behalf of Bonneville.
- ^{4/} Costs for power O&M is funded directly by Bonneville as follows (in millions):

	FISCAL YEAR	2021	2022	2023	2024	2025	2026	2027
Bureau of Reclamation		150	152	153	155	159	162	166
Corps of Engineers		236	253	253	259	265	270	276
Subtotal Bureau and Corps		387	405	406	414	424	433	442
Lower Snake River Comp. Plan		31	33	29	32	32	33	34
Total		417	438	435	446	456	466	476

- ^{5/} See Interest Expense, Pension and Post-retirement Benefits and Capital Transfers section of this budget for a complete discussion of these cost estimates.
- ^{6/} In this FY 2023 budget, Bonneville "bond(s)" refers to all bonds issued by Bonneville to and advances received from the U.S. Treasury. This reference is consistent with section 13 (a) of the Transmission Act, which defines Bonneville bonds as all bonds, notes, and other evidences of indebtedness issued and sold by Bonneville to the U.S. Treasury.
Does not include Treasury bond premiums on refinanced Treasury bonds.
- ^{8/} FY 2021 data reflects BPA's audited actuals.

Status of U.S. Treasury Principal Repayment

(\$ in million)

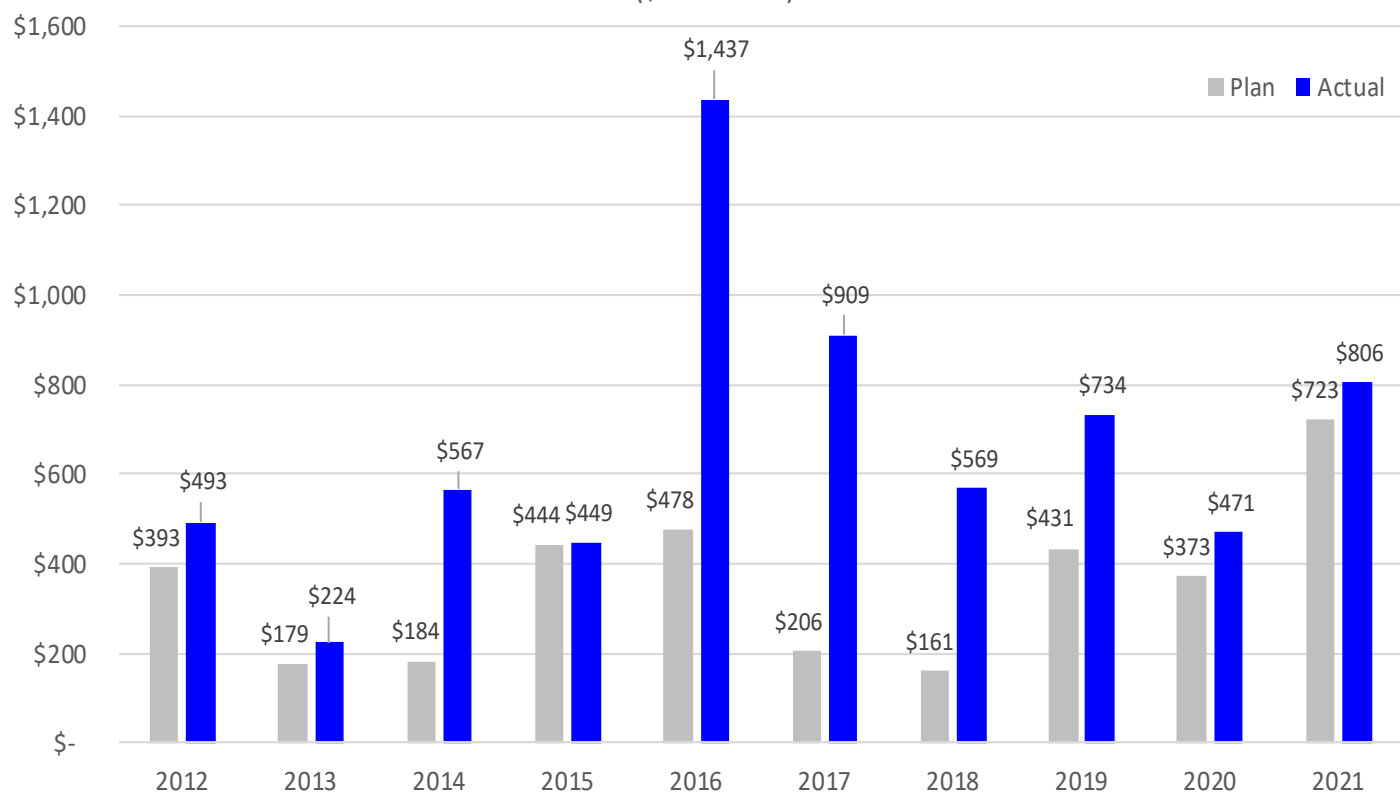


Chart Notes

^{1/} This chart displays principal repayment only.

^{2/} U.S. Treasury payment outyear estimates for planned amortization of principal are based on rate case estimates when available and are planned amortization for future rate case periods. These estimates may change due to revised capital investment plans, actual U.S. Treasury borrowing, and advanced amortization payments. Bonneville's FY 2021 payment to the U.S. Treasury was approximately \$1,049 million. This was the 38th consecutive year that Bonneville made its scheduled payments to the U.S. Treasury on time and in full. The payment included \$806 million in principal, which included \$412 million in early retirement of higher interest rate U.S. Treasury debt, \$187 million for interest, \$22 million in irrigation assistance payments, and \$33 million in pension and post-retirement benefits.

^{3/} FYs 2002-2012 payments include portions of advance amortization amounts consistent with Bonneville's capital strategy plan and the Bonneville /Energy Northwest debt optimization program.

^{4/} Advance amortization due to sale of transmission facilities includes \$12.7 million in FY 2003, \$5.3 million in FY 2006, \$2.0 million in FY 2011, \$0.4 million in FY 2013 and \$0.4 million in FY 2014, and \$0.6 million in FY 2017.

^{5/} The cumulative balance of advance amortization payments as of the end of FY 2021 was in excess of \$6.2 billion.

^{6/} FYs 2014-2021 include advance amortization under the Regional Cooperation Debt initiative with Energy Northwest (EN) under which EN extended maturities on Bonneville-backed debt which enabled the early amortization of higher cost appropriations and bonds.

OBJECT CLASSIFICATION STATEMENT

(in millions of dollars)

ESTIMATES

	2021	2022	2023
11.1 Full-time permanent	264	265	270
11.3 Other than full-time permanent	1	1	1
11.5 Other personnel compensation	79	79	81
11.9 Total personnel compensation	344	346	352
12.1 Civilian personnel benefits	164	165	168
13.0 Benefits for former personnel	0	0	0
21.0 Travel and transportation of persons	1	1	1
22.0 Transportation of things	1	1	1
23.1 Rental payments to GSA	0	0	0
23.2 Rents, other	34	34	34
23.3 Communication, utilities & misc. charg	10	10	10
25.1 Consulting Services	131	132	134
25.2 Other Services	2,415	2,426	2,471
25.5 R & D Contracts	2	4	4
26.0 Supplies and materials	24	24	25
31.0 Equipment	85	85	87
32.0 Lands and structures	79	79	81
41.0 Grants, subsidies, contributions	47	47	48
43.0 Interest and dividends	236	237	242
99.0 Total obligations	3,573	3,591	3,658

Estimate of Receipts

(in millions of dollars)

	Fiscal Year						
	2021	2022	2023	2024	2025	2026	2027
Reclamation Interest	1	1	1	1	1	1	1
Reclamation Amortization	0	0	0	0	0	0	0
Reclamation O&M	0	0	0	0	0	0	0
Reclamation Irrig. Assist.	22	16	13	8	13	20	6
Revenues Collected by Reclamation	-18	-7	-7	-7	-7	-7	-7
Distributed in Treasury Account (credit)							
Colville Settlement (credit)	-5	-5	-5	-5	-5	-5	-5
Total 1/ Reclamation Fund	1	5	2	-3	3	9	-5
Corps O&M							
CSRS	33	31	32	33	34	35	35
Total 2/ Repayments on miscellaneous costs	33	31	32	33	34	35	35

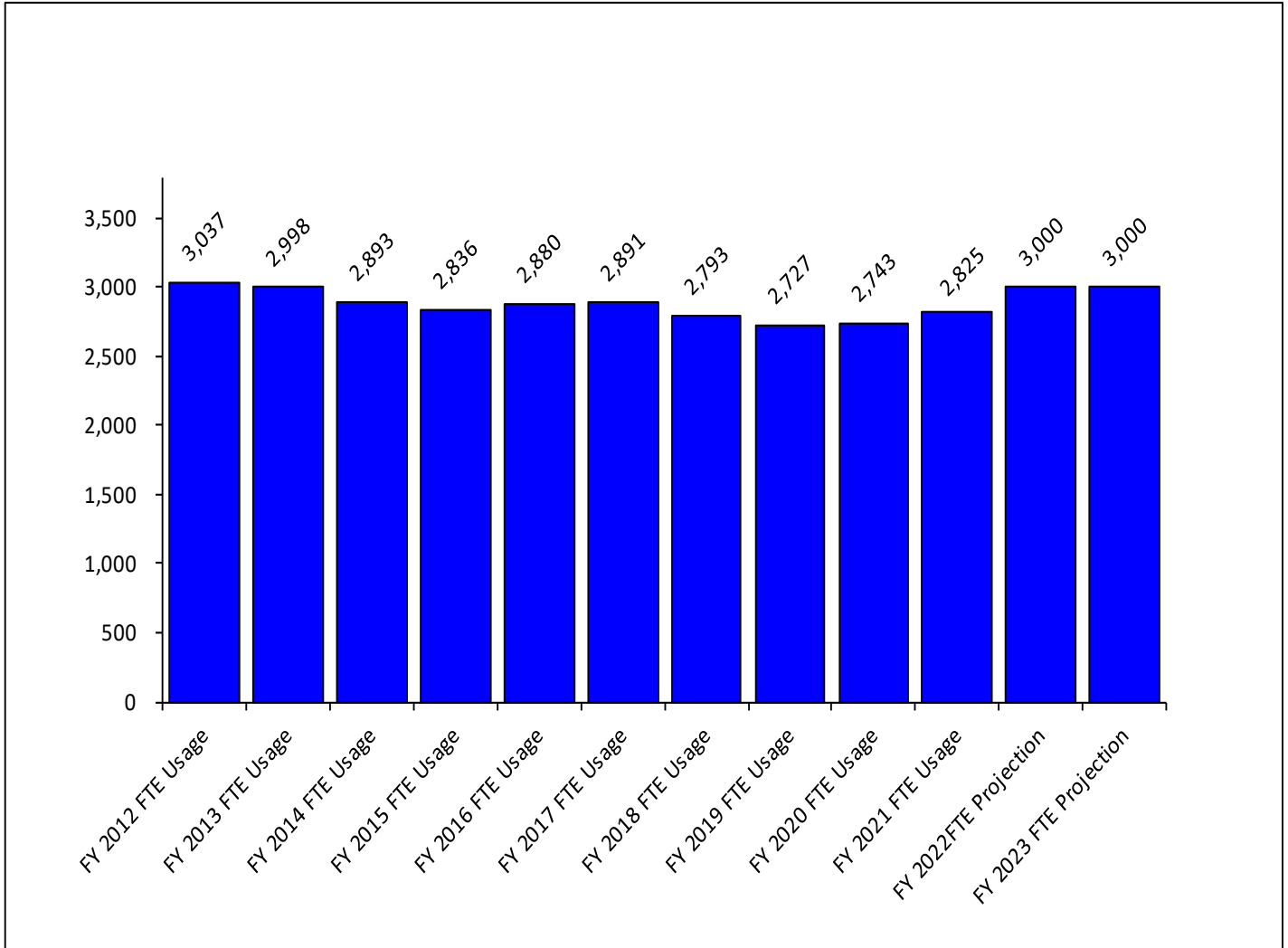
1/ Includes amortization of appropriations and irrigation assistance, and interest costs for Reclamation. The cost of power O&M for Reclamation is no longer included in Proprietary Receipts due to Direct Funding by Bonneville. Represents transfer to Account #895000.26

2/ The costs of power O&M for the Corps and Lower Snake River Comp. Plan are no longer included in Proprietary Receipts due to Direct Funding by Bonneville. Represents transfers to Account #892889, Repayments on misc. recoverable costs, not otherwise classified. Costs for power O&M is funded directly by Bonneville as follows (in millions).

	2021	2022	2023	2024	2025	2026	2027
Bureau of Reclamation	150	152	153	155	159	162	166
Corps of Engineers	236	253	253	259	265	270	276
Lower Snake River Comp. Plan	31	33	29	32	32	33	34
Total	417	438	435	446	456	466	476

See Interest Expense, Pension and Post-retirement Benefits and Capital Transfers section of this budget for a complete discussion of these cost estimates.

BONNEVILLE FTE



These notes are an integral part of this chart.

1. Actual FTE data is consistent with DOE personnel reports.
2. FTE outyear data are estimates and may change. Bonneville is facing a dynamic and changing transmission marketplace and operations while, at the same time, many of its employees are eligible to retire in the near future. It is important that Bonneville continue to attract and retain skilled individuals to meet the growing demands of a competitive and rapidly changing industry. Accordingly, FTE estimates may need to be adjusted in the future.
3. As of November 03, 2021 DOE HR staff has reported FY 2021 BPA's FTE usage at 2,825.

Total Cost of BPA Fish & Wildlife Actions (\$ in million)

COST ELEMENT	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
CAPITAL INVESTMENTS ^{1/}										
BPA FISH AND WILDLIFE	57.5	52.1	37.4	21.4	16.0	5.4	30.7	22.3	40.2	41.9
BPA SOFTWARE DEVELOPMENT COSTS	0.4	0.0	0.1	1.4	1.2	1.4	0.8	0.0	0.0	0.0
ASSOCIATED PROJECTS (FEDERAL HYDRO)	114.5	103.6	101.7	81.4	34.1	58.9	51.8	55.5	106.6	66.7
TOTAL CAPITAL INVESTMENTS	172.3	155.7	139.2	104.1	51.4	65.7	83.2	77.9	146.7	108.6
PROGRAM EXPENSES										
BPA DIRECT FISH AND WILDLIFE PROGRAM	248.9	239.0	231.8	258.2	258.1	254.7	258.7	240.4	238.1	253.6
FISH & WILDLIFE SOFTWARE EXPENSE COSTS		0.2	0.3	0.1	0.0	0.0	0.1	0.0	0.0	0.0
SUPPLEMENTAL MITIGATION PROGRAM EXPENSES ^{2/}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
REIMBURSABLE/DIRECT-FUNDED PROJECTS ^{3/}										
O & M LOWER SNAKE RIVER HATCHERIES	22.0	28.7	31.0	30.9	28.6	26.0	31.4	26.7	31.9	30.7
O & M CORPS OF ENGINEERS	41.1	39.2	47.8	46.4	48.2	46.8	47.5	48.9	46.3	48.3
O & M BUREAU OF RECLAMATION	5.3	5.6	6.6	2.6	6.0	7.0	5.5	8.7	5.8	6.5
NW POWER AND CONSERVATION COUNCIL ALLOCATED @ 50%	4.6	5.0	4.9	4.9	5.4	5.4	5.5	5.6	5.6	5.5
SUBTOTAL (REIMB/DIRECT-FUNDED)	73.0	78.5	90.3	84.9	88.2	85.2	89.9	89.9	89.6	91.0
TOTAL OPERATING EXPENSES	321.9	317.70	322.40	343.17	346.34	339.90	348.65	330.30	327.66	344.60
PROGRAM RELATED FIXED EXPENSES ^{4/}										
INTEREST EXPENSE	80.6	89.1	83.4	89.2	85.6	58.6	41.0	39.7	32.5	29.3
AMORTIZATION EXPENSE	30.2	35.7	38.7	41.3	42.5	42.5	43.4	45.1	46.7	47.4
DEPRECIATION EXPENSE	20.7	18.6	19.2	20.1	20.1	20.3	20.8	21.0	21.1	22.0
TOTAL FIXED EXPENSES	131.5	143.4	141.3	150.6	148.2	121.4	105.1	105.8	100.3	98.7
GRAND TOTAL PROGRAM EXPENSES	453.4	461.1	463.7	493.7	494.6	461.3	453.7	436.1	428.0	443.3
FORGONE REVENUES AND POWER PURCHASES										
FOREGONE REVENUES	152.2	135.5	122.7	195.8	76.6	9.6	2.9	174.4	33.4	190.6
BPA POWER PURCH. FOR FISH ENHANCEMENT	38.5	85.8	196.2	67.5	50.3	(20.5)	24.3	177.6	150.0	110.6
TOTAL FOREGONE REVENUES AND POWER PURCHASES	190.7	221.3	318.9	263.3	126.9	(10.9)	27.2	352.0	183.4	301.2
TOTAL PROGRAM EXPENSES, FOREGONE REVENUES, & POWER PURCHASES	644.1	682.4	782.6	757.0	621.5	450.4	480.9	788.1	611.5	744.5
CREDITS										
4(h)(10)(C)	(77.0)	(84.1)	(103.9)	(77.7)	(72.6)	(53.7)	(70.1)	(98.2)	(95.5)	(90.6)
FISH COST CONTINGENCY FUND	-	-	-	-	-	-	-	-	-	-
TOTAL CREDITS	(77.0)	(84.1)	(103.9)	(77.7)	(72.6)	(53.7)	(70.1)	(98.2)	(95.5)	(90.6)

This information has been made publicly available by BPA on 10/30/2021. The figures shown are consistent with audited actuals that contain Agency approved financial information, except for forgone revenues and power purchases which are estimates and do not contain Agency approved financial information

1/ Capital Investments include both BPA's direct Fish and Wildlife Program capital investments, funded by BPA's Treasury borrowing, and "Associated Projects", which include capital investments at Corps of Engineers' and Bureau of Reclamation projects, funded by appropriations and repaid by BPA. The negative amount in FY 1997 reflects a decision to reverse "plant-in-service" investment that was never actually placed into service. The annual expenses associated with these investments are included in "Program-Related Fixed Expenses", below.

2/ Includes High Priority and Action Plan Expenses and other supplemental programs.

3/ "Reimbursable/Direct-Funded Projects" includes the portion of costs BPA pays to or on behalf of other entities that is determined to be for fish and wildlife purposes.

4/ "Fixed Expenses" include depreciation, amortization and interest on investments on the Corps of Engineers' projects, and amortization and interest on the investments associated with BPA's direct Fish and Wildlife Program.

State and Community Energy Programs

State and Community Energy Programs

State and Community Energy Programs
Proposed Appropriation Language

For Department of Energy expenses including the purchase, construction, and acquisition of plant and capital equipment, and other expenses necessary for state and community energy activities in carrying out the purposes of the Department of Energy Organization Act (42 U.S.C. 7101 et seq.), including the acquisition or condemnation of any real property or any facility or for plant or facility acquisition, construction, or expansion, \$726,897,000, to remain available until expended: Provided, That of such amount, \$24,727,000 shall be available until September 30, 2024, for program direction.

P.L. 95-91, "Department of Energy Organization Act" (1977)

(42 U.S.C. §6321 et seq.): Energy Policy and Conservation Act, P.L. 94-163, Title III, Part C, § 365, later amended by:

P.L. 94-385, Energy Conservation and Production Act, , Title IV, Part B, § 432(d);

P.L. 95-619, National Energy Conservation Policy Act, , Title IV, Part 3, § 441(a), Title VI, Part 2, § 621, Part 6, § 691(b)(2)

P.L. 101-440, State Energy Conservation Programs Improvement Act of 1989, §§ 5, 8(a)

P.L. 102-486, EAct 1992, , Title I, Subtitle E, § 141(a)(2)

P.L. 104-66, Federal Reports Elimination and Sunset Act of 1995, , Title I, Subtitle E, § 1052(f)

P.L. 105-388, Energy Conservation , Reauthorization Act of 1998, § 2(a)

P.L. 109-58, EAct 2005, Title I, Subtitle B, § 123(c)

P.L. 110-140, EISA 2007, Title V, Subtitle D, § 531 (42 U.S.C. § 6325(f))

P.L. 115-246, "Department of Energy Research and Innovation Act" (2018)

P.L. 116-260, "Consolidated Appropriations Act of 2020" (Section Z: Energy Act of 2020)

Explanation of Changes

The newly created Office of State and Community Energy Programs (SCEP), within the Office of the Under Secretary for Infrastructure, supports the transition to an equitable clean energy economy by working with community-level implementation partners and State Energy Offices. SCEP manages the Weatherization Assistance Program (WAP), State Energy Program, Community Programs, and Energy Future Grants. SCEP activities were previously funded within the Office of Energy Efficiency and Renewable Energy (EERE).

Overview

The newly created Office of State and Community Energy Programs (SCEP), within the Office of the Under Secretary for Infrastructure, supports the transition to an equitable clean energy economy by working with community-level implementation partners and State Energy Offices. SCEP manages the Weatherization Assistance Program (WAP), State Energy Program, Community Programs, and Energy Future Grants. SECP was previously funded within the Office of Energy Efficiency and Renewable Energy (EERE). In FY 2023, WAP will launch a Low-Income Home Energy Assistance Program Advantage (LIHEAP Advantage) pilot to retrofit and decarbonize LIHEAP beneficiary homes with efficient electric appliances and systems. These activities were previously funded within EERE. Additional Bipartisan Infrastructure Law funding and FTEs for SCEP are captured in the budgetary projections and will be executed through the Department's EERE account.

As part of the Department of Energy's (DOE) Office of the Under Secretary for Infrastructure, the mission of the Office of State and Community Energy Programs (SCEP) (formerly the Weatherization and Intergovernmental Programs Office under the Office of Energy Efficiency & Renewable Energy) is to partner with state and local organizations to significantly accelerate the deployment of clean energy technologies and practices through place-based strategies involving a wide range of government, community, and business stakeholders. These activities help decrease energy costs and contribute to decarbonization efforts, provide good-paying jobs with a fair and free choice to join a union and collectively bargain, and secure clean energy economy benefits for all Americans, especially marginalized and low-income communities that have long borne the brunt of pollution.

State governments wield considerable influence in the built environment through upgraded building codes and incentives; in the utility sector through energy efficiency and renewable energy targets and customer programs; and in the industrial sector with policies that encourage efficiency and/or emission reductions (such as energy audits and combined heat and power). States advance these energy solutions through strategic energy planning, executive orders, legislation, management of energy efficiency retrofit programs, and land use plans. SCEP extends the reach of State-based programs and policies through fostering regional networks. Local governments are an important bridge between state action and community investment. They have a unique understanding of municipal ecosystems and community needs, and a significant role in revitalization, both of which are critical to integrating innovative energy thinking into infrastructure and the built environment.

Aligning with the Administration's clean energy goals, SCEP addresses the demand and supply sides of energy by facilitating investments in both energy efficiency (demand), and clean energy generation (supply), as well as alternative transportation fuels and vehicles. In FY 2023 SCEP will support the Office of Undersecretary of Infrastructure to accelerate the deployment of technologies and solutions to equitably transition America to net-zero greenhouse gas emissions economy-wide by no later than 2050, and ensure the clean energy economy benefits all Americans, creating good paying jobs for the American people—especially workers and communities impacted by the energy transition and those historically underserved by the energy system and overburdened by pollution. The Office has four subprograms: Weatherization Assistance Program (WAP), State Energy Program (SEP), Energy Future Grants, and Community Programs.

DOE strives to amplify the transformational impacts of its state-led deployment work in WAP and SEP by expanding the scope of these programs with competitive funding, increased technical assistance to the state and local networks putting advance technologies to work in communities, and conducting impact analyses to ensure benefits are achieved broadly across the United States. DOE also seeks to support the Community Programs, providing competitive awards, on-site capacity, peer exchanges, and technical assistance to support the development and deployment of transformative clean energy programs working with qualifying local governments, with a focus on disadvantaged communities and/or small-to-medium-sized jurisdictions. This program will operate in coordination across DOE and other Federal agencies as appropriate.

SCEP and its national networks provide strategic leadership, resource leveraging, and market expertise to accelerate deployment of energy efficiency and clean energy products and technologies that, where implemented, improve America's energy security and economic prosperity. For decades, states and local governments have demonstrated leadership

through their unique authorities to develop and implement these policies and programs. SCEP employs an integrated approach comprising the following strategic mechanisms:

- Formula grants to support the core capabilities of state energy offices and a weatherization provider network that assists low-income families through provision of home energy retrofits;
- Competitive awards to support innovative state and local high-impact and self-sustaining clean energy projects;
- Technical assistance to facilitate energy efficiency and clean energy technology delivery through "best practice" tools, "lead-by-example" methods, peer-to-peer forums, and strategic partnerships; and
- Active management of awardees through on-site reviews and integrated web-based systems for reporting, monitoring, and communication.

Working collaboratively with state and local governments, SCEP will deliver on the President's goal of economy-wide decarbonization by:

- Using state energy and weatherization networks and competitive awards to state and local governments to spur widespread adoption of cost-effective energy efficiency and renewable energy technologies delivered by a highly skilled workforce employed in durable, good-paying jobs; and
- Overcoming market, planning, implementation, and financing barriers to enable accelerated deployment of effective clean energy policies and cost-effective clean energy technologies across all communities in our economy, with a focus on improving the economic well-being of impoverished and disenfranchised communities, and/or communities that have been marginalized or overburdened.

Highlights of the FY 2023 Request

The FY 2023 Request reflects the realignment within DOE. Weatherization and Intergovernmental Programs (WIP) from the EERE appropriation account functionally transfers to the new SCEP appropriation account organizationally within the Office of the Under Secretary for Infrastructure.

WAP helps eligible low-income households reduce the comparatively large percentage of available income that they spend on energy. Highlights include:

- Completion of approximately 50,000 low-income residential energy retrofits;
- Emphasize reduced weatherization assistance deferrals, enhanced workforce development, heightened consideration on equity and justice, on expanding appliance electrification, and providing relief from high energy burden for low-income families in the disadvantaged communities across the country.
- Launch the LIHEAP Advantage pilot to reduce energy costs for low-income households through energy efficiency and clean energy improvements, thereby reducing the demand for LIHEAP bill assistance and enabling taxpayer dollars to support even more people in need.
- Expand the Weatherization Readiness Fund (\$30M) to enable the program to avoid deferrals by addressing structural or health and safety repairs needed to low-income homes prior to weatherization. WAP readiness funds will ensure the energy efficiency benefits can be realized by those with the greatest need (a portion of this funding will be targeted at repeat recipients through Low-Income Home Energy Assistance Program Advantage Pilot support);
- Exploration and development of methodologies to estimate non-energy impact savings, and inclusion of non-energy impact estimates in the cost-effective test for WAP retrofits, as provided in section 1011(c) of the Energy Act of 2020;
- WAP Innovation and Enhancement funds of up to 6 percent (approximately \$21.8M based on the WAP formula request for \$362.17M) to competitively select and manage projects on improvements in indoor air quality, advanced technologies, workforce development, and approaches to improve the affordability of manufactured housing.
- Sustainable Energy Resources for Consumers (SERC) awards of up to 2 percent of WAP funding (approximately \$7.2 million) for installation of renewable technologies in low-income dwellings;
- Continued improvements in workforce training, quality standards, and worker certification to improve the quality of the work performed;
- Continued development of tools and technical assistance resources to ensure at least 40 percent of the benefits from weatherization investments are delivered to disadvantaged communities;
- Development of targeted resources to further quality installation of energy conservation measures, develop workforce, and coordination with other funding streams through existing interagency working group; and

- Provide and expand technical assistance and training through the existing Weatherization Training Center network and the activities described above to build capacity to ensure effective execution of the American Jobs Plan funding.

The State Energy Program (SEP) will continue to support the core capacity and advance innovation in state energy offices and dissemination of best practices. Highlights include:

- Enabling a portfolio of diverse state energy efficiency and clean energy programs and policies through an active network of state energy offices with the capacity to develop, improve, and implement these initiatives through the provision of funding through formula grants;
- Issuing competitive awards in FY 2023 (\$7.5 million) to spur continued innovation by states in advancing deep decarbonization strategies that target persistent barriers across multiple states; states will develop solution sets or models that can be adopted by other states, and preference will be given to multistate awards to cover a range of energy, economic, workforce, environmental, and equity issues;
- Providing targeted technical assistance to states to advance transformative deployment solutions for reducing energy use in government facilities; accelerating investment in public sector use of energy service performance contracts; and supporting high-impact projects focused on development and implementation of state policy barriers limiting investment in energy efficiency and clean energy, including self-sustaining financing models; and
- Building capacity through technical assistance to state energy office staff on grant management requirements and clean energy deployment strategies to ensure efficient and effective execution of the Bipartisan Infrastructure Law funding.

In FY 2023, DOE will fund the Energy Future Grants initiative to support early action on, and incubate novel approaches to, clean energy technology deployment, prioritizing investments that meet energy needs at the local level, and are inclusive in elevating impoverished and disenfranchised communities, and/or communities that have been marginalized or overburdened.

SCEP will support work in communities through the Community Programs in FY 2023 to create increased capacity and advancement of clean energy technologies by:

- Empowering American cities, counties, and communities with high impact, place-based, low-carbon solutions tailored to their needs, and developing and using a local workforce, with a focus on local clean energy programs that target environmental justice and workforce development outcomes;
- Providing targeted competitive awards, on-site capacity, peer exchanges, and technical assistance to support the development and deployment of transformative clean energy deployment programs of qualifying local governments, with a focus on disadvantaged communities and small-(under 100,000 residents)-to-medium-(under 250,000 residents)-sized jurisdictions; and
- Coordinating across DOE and other Federal agencies as appropriate.

**State and Community Energy Programs
Funding (\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
State and Community Energy Programs				
Weatherization and Intergovernmental Programs				
Weatherization Assistance Program	315,000	315,000	502,170	+187,170
State Energy Program	62,500	62,500	70,000	+7,500
Energy Future Grants	0	0	105,000	+105,000
Community Programs	0	0	25,000	+25,000
Program Direction	22,725	22,725	24,727	+2,002
Total, State and Community Energy Programs	400,225	400,225	726,897	+326,672

**Future Year Energy Program
Funding (\$K)**

	FY 2023 Request	FY 2024 Estimate	FY 2025 Estimate	FY 2026 Estimate	FY 2027 Estimate
State and Community Energy Programs					
State and Community Energy Programs	726,897	744,000	761,000	778,000	796,000
Total, State and Community Energy Programs	726,897	744,000	761,000	778,000	796,000

Outyear Priorities and Assumptions

In the FY 2012 Consolidated Appropriations Act (P.L. 112-74), Congress directed the Department to include a future-years energy program (FYEP) in subsequent requests that reflects the proposed appropriations for five years. This FYEP shows outyear funding for each account for FY 2024 - FY 2027. The outyear funding levels use the growth rates from, and match the outyear account totals published in, the FY 2023 President’s Budget for both the 050 and non-050 accounts.

SCEP priorities in the outyears include the following:

- Partner with state and local organizations to accelerate the deployment of clean energy technologies and practices through place-based strategies involving a wide range of government, community, and business stakeholders.
- Manage formula grants and competitive solicitations to support weatherization activities that benefit low-income households.
- Provide technical assistance on clean energy technology delivery through "best practice" tools, "lead-by-example" methods, peer-to-peer forums, and strategic partnerships.

State and Community Energy Programs Weatherization Assistance Program

Description

The Weatherization Assistance Program (WAP) is a foundational building block of DOE's vision for a clean energy future for all, delivering on its national objective to increase the energy efficiency of dwellings owned or occupied by low-income persons, reduce their total residential energy expenditures, and improve their health and safety. WAP activities reduce the cost of residential household energy bills, which are a disproportionately higher share of household income relative to higher income households. Up to 40 million low-income households in the U. S. are eligible for low-income housing energy assistance. ¹ Since 1976, WAP has performed 7 million upgrades to low-income households, including 1 million retrofits supported through American Recovery and Reinvestment Act (ARRA) of 2009² funding. From the 38,045 supported home retrofits in FY 2019, estimated savings of over \$283 million will accrue to these low-income households over the 20-year life of the measures installed. A total of \$502 million is requested for DOE's WAP in FY 2023, including \$30 million for the Weatherization Readiness Fund and \$100 million to launch the LIHEAP Advantage Pilot.

Weatherization Assistance (\$362,170,000): The primary focus of funding in the FY 2023 Budget Request is to provide formula grants to 50 states, the District of Columbia, 5 U. S. Territories and 1 Native American Tribe to support nationwide delivery of services - resulting in at least 50,000 homes receiving weatherization services and allowing eligible low-income families to use retrofit enabled energy cost savings to purchase other basic needs (like food, medicine, and other essentials). The formula grant allocations provided to states include funds for state-managed training and technical assistance (State T&TA) activities, at approximately 17 percent of total WAP funding. Per 42 U. S. C. 6866, the total of DOE T&TA and State T&TA cannot exceed 20 percent of total WAP funding.

The WAP formula grants support the largest and one of the most technically advanced networks of residential energy retrofit providers in the country, providing a foundation for related services funded by other Federal and non-Federal sources. Funds are allocated on a statutory formula basis and awarded to a single agency (referred to collectively as Grantees) within each recipient's jurisdiction that manages the deployment of services to increase the energy efficiency of homes occupied by families with household incomes of 200 percent or less of the Office of Management and Budget's (OMB) Annual Federal Poverty Guidelines. These agencies, in turn, contract with approximately 700 local service provider organizations, including Community Action Agencies and local governmental and nonprofit agencies, supporting approximately 8,500 jobs, and delivering weatherization services to low-income families in every geographic area of the country.

Weatherization service providers choose the best package of efficiency and energy improvement measures for each home based on a comprehensive energy audit. Typical energy conservation measures include installing insulation, sealing ducts, repairing, or replacing heating and cooling systems, reducing air infiltration, improving hot water production and use, and reducing electric base load consumption. The consistent delivery of quality services is addressed through active Federal, regional, and state training and technical assistance programs. The program leverages both Federal and non-Federal funding sources³ to expand the array of services available for each home or to increase the number of homes weatherized. In FY 2023 the program will emphasize reduced weatherization assistance deferrals, enhanced workforce development, heightened consideration on equity and justice, on expanding appliance electrification, and providing relief from high energy burden for low-income families in the disadvantaged communities across the country.

The State T&TA funding enables Grantees to develop, train, and continually improve the skills of the local workforce performing weatherization retrofits. State T&TA funds may be used for technical and non-technical training for Grantee staff and their subgrantees, including training contractors that work within their DOE-funded weatherization program. Activities must be designed to maximize energy savings, minimize production costs, improve program management and crew/contractor "quality of work," and/or reduce the potential for waste, fraud, abuse, and mismanagement. Grantees

¹ U.S. Department of Energy, [Weatherization Assistance Program Briefing Book](#) (Draft Copy), December 2019.

² <http://www.gpo.gov/fdsys/pkg/PLAW-111publ5/pdf/PLAW-111publ5.pdf> .

³ National Association of State Community Services Programs, [Weatherization Assistance Program Annual Funding Report](#), 2019.

must ensure their respective training plans include a provision to provide comprehensive training aligned to the job-task analysis (JTA) of their profession (Quality Control Inspector, Energy Auditor, Crew Leader and Retrofit Installer) on a regular basis for all field workers.

DOE will also implement a third year of Innovation and Enhancement competitive awards, as provided for in the recent reauthorization of WAP (P. L. 116-260). In the FY 2023 Request, DOE will allocate up to a maximum of \$25 million of WAP funds to award competitive proposals that create model strategies and approaches targeted at deep energy efficiency retrofits by leveraging multiple funding sources and developing broad community partnerships. DOE will continue to focus these Innovation and Enhancement funds on the statutory purposes to achieve comprehensive services and installation of energy conservation measures. In FY 2023, the WAP E&I solicitation will include a focus on improving the affordability of manufactured housing within its topic areas.

In FY 2023 DOE intends to use up to 2 percent of WAP funding (approximately \$7.2 million) for Sustainable Energy Resources for Consumers (SERC) awards, as allowed per Title IV of the Energy Independence and Security Act of 2007.⁴ As listed in EISA, Section 411(b), the purposes of the SERC Grants are to: (1) expand WAP for residential buildings to include materials, benefits, and renewable and domestic energy technologies not covered by the Program; and (2) work with existing partners to expand and enhance the Program. SERC grants have not been implemented in WAP since 2010. During this time major changes in available types and cost profiles for energy technologies provide real opportunities to avail low-income communities greater access to renewable energy resources.

Training and Technical Assistance (\$10,000,000): WAP's Headquarters (HQ) T&TA will continue a nationally focused portfolio of research, modeling, work performance guidelines and education, and hands-on support services that sustains the entire WAP network and its workforce. These activities are designed and developed annually to improve program effectiveness, service delivery, resource accountability, and operational efficiency. Specifically, these funds support the development and implementation of a variety of tools needed to implement work quality, training accreditation, and workforce development across the 57 recipient agencies DOE partners with to deploy low-income weatherization services. Some examples of the activities to be undertaken in FY 2023 include:

- Maintenance and upgrades to the Standard Work Specifications (SWS) online tool (<https://sws.nrel.gov/>). This tool houses the SWS for home energy upgrades, which serves as the backbone of the WAP's work quality initiatives. The enhanced functionality of the tool allows grantees to develop work quality standards as well as illustrated field guides, work orders and checklists. The SWS requires regular review and updating to ensure it is current with codes, technology, and best practice for residential upgrades. The SWS online tool requires ongoing maintenance to respond to user's needs and ensure consistent functionality.
- Maintenance of the home energy professional (HEP) certifications and their underlying resources, such as the job task analyses and certification schemes. The HEP quality control inspector certification is required of all Grantees and must be maintained to retain their American National Standards Institute (ANSI) accreditation.
- Development of training resources to respond to continually evolving needs in the field, including an enhanced curriculum, updating of the ASHRAE 62.2 curriculum, and updating several modules related to weatherizing multi-family buildings.
- Upgrade of and enhancements to the suite of energy auditing tools for single family buildings, mobile homes, and multi-family buildings including user requested changes and modeling of non-energy benefit of water measures. For example, a non-energy benefit, such as sewer and water costs savings, can be readily attributed to the installation of showerheads and aerators, which are measures WAP may install.
- Evaluation of service delivery models to ensure equitable distribution of benefits. By design, the Weatherization Assistance Program serves households disproportionately impacted by energy costs and inefficient homes. Based on a June 2020 report by Oak Ridge National Laboratory (ORNL), the energy burden for the WAP-eligible population was estimated at 13.9 percent compared to 3.0 percent for higher-income U. S. households⁵. This report will be updated

⁴ Energy Independence and Security Act of 2007, Section 411(b). Pub. L. 110-140, title IV, §411(b), Dec. 19, 2007, 121 Stat. 1600. <https://www.govinfo.gov/content/pkg/PLAW-110publ140/pdf/PLAW-110publ140.pdf>

⁵ ORNL, Background Data and Statistics on Low-Income Energy Use and Burden for the WAP. For the purposes of this analysis, WAP-eligible households are identified as those living at or below 200% of US federal poverty guidelines based on household income and size. The term energy burden is defined herein as the percentage of household income spent on home energy expenditures (e.g., heating and cooling, appliances, lighting).

as new data is available and will also assist DOE in identifying regions where high energy burden correlates with other factors such as household demographics or environmental justice communities. Within the population of WAP-eligible households it is important to ensure services are provided equitably; for example, eligible housing types are served proportional to the percentages in a specific service territory or geography. Service delivery will be studied from two perspectives, with the goal of identifying and sharing best practices and strategies among the weatherization provider network. Service providers and stakeholders will be engaged throughout this work, and the scope includes:

- A study to explore opportunities for more equitable distribution of resources, which include allocation formulas. This study will also seek to identify opportunities to enhance allocation formulas with newly available national data, as applicable, and develop technical assistance resources relevant to designing and implementing allocation formulas.
- A potential study for housing types and communities that may be historically underserved. Following guidance from the OMB and in alignment with the Justice40 initiative, DOE will continue reviewing data from all service area types (urban, rural, etc.) to ensure at least 40 percent of benefits are delivered to disadvantaged communities. Input from the weatherization network and other stakeholders will be critical in identifying existing barriers to service, and the T&TA resources DOE may develop to assist in overcoming identified barriers.
- Approximately \$1 million in FY 2023 funding will be used to explore and develop methodologies to estimate non-energy impact savings and evaluate the feasibility of accounting for them in determining inclusion of energy conservation measures in WAP retrofits. On average weatherization reduces annual household energy costs by \$283, and results in an average first-year savings of 29.3 Metric Million British Thermal Units (MMBtu) per site-built home.⁶ It is generally acknowledged that the WAP also positively impacts household (e.g., available income, improved comfort) and societal issues (e.g., water savings, avoided emissions, economic development), but that these non-energy impacts are more difficult to quantify. Developing savings estimates is critical in calculating and maximizing the investments and benefits in disadvantaged communities.⁷ DOE will continue its work to develop savings estimates for non-energy impacts to provide a more holistic measure of the community benefits realized by the program and integrate non-energy impacts in the cost-effectiveness test for weatherization services.
- Continuity of DOE coordination with partner Federal agencies to ensure client eligibility is streamlined with Health and Human Services Low Income Home Energy Assistance Program and the Housing and Urban Development Lead Hazard Control and Healthy Homes Program. The scope of work will be expanded to develop tools and technical assistance resources for WAP Grantees, including a framework for braiding multiple funding sources in low-income households and advancing environmental justice and energy equity in local communities throughout the country.

Weatherization Readiness Fund (\$30,000,000): The President's Budget request will expand a home repair fund to address structural and health and safety issues and reduce the frequency of deferred homes that are not weatherization-ready when WAP work crews enter the home to perform retrofit services. Deferral of service occurs when the condition of the home renders delivery of weatherization services unsafe or ineffective. WAP crews are often the first or only home services professionals to enter these homes and observe these issues. Deferral means work must be postponed indefinitely until the structural deficiency or health and safety hazard can be resolved, and many low-income households are unable to afford the necessary repairs, particularly in homes of underserved and disadvantaged communities. These funds would be distributed using the existing State T&TA allocation process for each WAP Grantee. This would address the goals of environmental justice and equity and expand the number of homes that can be weatherized. According to a 2020 American Public Health Association report, racial inequality in housing causes Native American, Latino and Black households to have higher rates of repair needs and higher cost burdens.⁸ A 2020 report conducted by the Federal Reserve Bank of Philadelphia and PolicyMap⁹ demonstrates that households with the highest rates of repair needs nationally are people living below the federal poverty line (42.9 percent). The report also estimates an average cost of \$2,920 per household with repair needs. Low-income, older homeowners had the highest average repair cost across all groups (\$4,187). In FY

⁶ ORNL/TM-2014/338, [Weatherization Works: Summary of Findings from the Retrospective Evaluation of the U.S. Department of Energy's Weatherization Assistance Program](#), September 2014.

⁷ OMB M-21-28. <https://www.whitehouse.gov/wp-content/uploads/2021/07/M-21-28.pdf>

⁸ American Public Health Association, [Creating the Healthiest Nation: Health and Housing Equity](#), May 2020.

⁹ Federal Reserve Bank of Philadelphia and PolicyMap, [The Cost to Repair America's Housing Stock—and Which Homes Need It](#), 2019.

2019, DOE reporting indicates 47 percent of WAP households were elderly. The following table shows data using the cost repair figures from the study and WAP Grantee reporting:

Historical Average Homes Weatherized per Year	Homes Needing Repair	Estimated Homes Needing Repair	2019 WAP Households Served	# of homes	Average Cost of Repairs	WAP Funds Needed	
35,000	42.9%	15,015	Not Elderly Occupied	53%	7,958	\$1,796	\$14,292,568
			Elderly Occupied	47%	7,057	\$4,187	\$29,547,868
			TOTAL				\$ 43,843,800

The Weatherization Readiness Fund provides a path to address in real-time, onsite remedy for these structural repair issues. The establishment of these funds separately from the formula funds and State T&TA includes exclusion from WAP’s Savings-to-Investment Ratio (SIR) of 1.0 or greater. Specifying this amount of funding as excluded from SIR will allow WAP to repair homes that otherwise would be deferred. WAP expects to increase production, up to 5 percent nationally, by no longer having the sunk costs of auditing/deferring units that never actualize into completions. Continued support for these activities remains the most practical means to dramatically increase the impact of Federal funds utilized in the weatherization of low-income households. A portion of this funding will be targeted at repeat recipients of Low-Income Home Energy Assistance Program support.

Low-Income Home Energy Assistance Program (LIHEAP) Advantage Pilot (\$100,000,000)¹⁰: The LIHEAP Advantage Pilot will reduce energy costs for low-income households through energy efficiency and clean energy improvements, thereby reducing the demand for LIHEAP bill assistance and enabling taxpayer dollars to support even more people in need. The upgrades will also make the homes more comfortable and reduce harmful indoor air pollution.

The Department of Health and Human Services’ (HHS) Low-Income Heating Energy Assistance Program and the DOE Weatherization Assistance Program work together to support low-income households with bill support and cost-saving retrofits. Both programs fund energy efficiency improvements in low-income households, though the largest share of LIHEAP funds helps low-income households pay their energy bills. Nationwide, more than 33 million households are eligible for LIHEAP assistance, and more than 40 million household are eligible for weatherization assistance.

The pilot initiative will invest in home energy efficiency and emissions reduction retrofits to save households money and better align the existing programs. This effort will be targeted specifically at low-income households, including directly targeting LIHEAP recipients, with the goal of reducing their energy bills. The program will also support necessary health, safety, and structural measures to enable the retrofits.

The LIHEAP Advantage Pilot is envisioned as a competitive grants program and will be designed jointly by DOE and HHS with input from state WAP and LIHEAP grantees, local providers and key state and community stakeholders. Among other criteria in the design of the program, competitive awards will target the most energy-burdened households and may also include factors such as property age and condition (e.g., if home has been deferred for services in prior years), number and age of occupants (e.g., WAP already recommends prioritization of elderly households for delivery of services), and ability to leverage non-federal funds. The program will also stimulate enhanced collaboration and data sharing between DOE, HHS and other relevant Federal, state and local agencies. The program will allow for recipients to utilize a portion of funds to address structural deficiencies that go beyond minor repairs to ensure the “readiness” of a home for weatherization upgrades. Proposals will be evaluated for innovative approaches to delivering deep energy retrofits that strategically combine a full complement of energy efficiency measures, electrification (as appropriate, including heat pumps), and

¹⁰ LIHEAP Advantage Pilot will be managed by the Weatherization Assistance Program. However, the pilot is proposed to use State Energy Program “Special Projects” authority under 10 CFR 420 Subpart C

renewable energy to maximize the reduction of both household energy bills and emission reductions. As part of the design DOE, HHS and our partners will examine options that provide for the tiering of funds to encourage ambitious and high-impact program projects.

**Weatherization Assistance Program
Activities and Explanation of Changes**

FY 2021 Enacted Weatherization \$315,000,000	FY 2023 Request \$502,170,000	Explanation of Changes FY 2023 Request vs FY 2021 Enacted +\$187,170,000
Weatherization Assistance Program \$310,000,000	\$362,170,000	+\$52,170,000
Financial Assistance: <ul style="list-style-type: none"> Award and actively manage 57 weatherization formula grantees, which will support over 38,000 comprehensive energy audits and residential energy retrofits. WAP Innovation and Enhancement: under P. L. 116-260 WAP will competitively award and manage agreements that focus on workforce development, indoor air-quality, advanced technologies, and decrease the number of deferrals. 	Financial Assistance: <ul style="list-style-type: none"> Award and actively manage 57 weatherization formula grantees, which will support approximately 50,000 or more low-income residential energy retrofits. Manage SERC awards process for installation of renewable technologies in low-income dwellings. Competitively select and manage WAP Innovation and Enhancement projects for deep energy efficiency retrofits by leveraging multiple funding sources and developing broad community partnerships. 	<ul style="list-style-type: none"> Increase to support approximately 12,000 or more low-income residential energy retrofits. Increase to support a greater number of innovative projects to increase utilization of renewable technologies and improve indoor air quality, advanced technologies, and workforce development.
Training and Technical Assistance \$5,000,000	\$10,000,000	+\$5,000,000
<ul style="list-style-type: none"> Maintenance and improvement of the Guidelines for Home Energy Professional suite of resources including the Standard Work Specifications, Home Energy Professional Certifications, and Training Program Accreditation. 	<ul style="list-style-type: none"> Continued improvements in workforce training, quality standards, and worker certification to improve the quality of the work performed. Equitable statewide distribution review of DOE WAP funds to understand the energy burden on a by-county basis and development of best practices and tools for Grantee use to assist state-level staff in making allocation decisions. Develop targeted resources for WAP Grantees to further quality installation of energy conservation measures, develop workforce, and coordination with other funding streams through existing interagency working group 	<ul style="list-style-type: none"> No Significant Changes. Increased funding for training and technical assistance to support energy burden and best practices and tools. Increased funding for training and technical assistance to increase quality of installation of energy conservation measures and develop workforce.

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
<ul style="list-style-type: none"> Continue improvement of grantee and subgrantee performance through state plan process with expansion and enhancement of WAP Quality Management and Work Plans features. SCEP will conduct a gap analysis of training needs and identify available resources to fill these needs. Tools will be developed for DOE staff and Grantees to aid in assessment of training needs and to develop curricula around management topics. WAP will also continue targeted technical assistance of the Quality Work Plan through the state plan process, which includes a review of the current certified quality control inspectors by grantee. 	<ul style="list-style-type: none"> Exploration and development of methodologies to estimate non-energy impact savings and evaluate the feasibility of including them in determining inclusion of energy conservation measures in WAP retrofits. 	<ul style="list-style-type: none"> Increased funding to proactively addresses Congressional and stakeholder interest in changes to the Savings-Investment Ratio to include non-energy impacts benefits of weatherization.
Weatherization Readiness Fund \$0	\$30,000,000	+\$30,000,000
<ul style="list-style-type: none"> No funds requested. 	<ul style="list-style-type: none"> Fund the Weatherization Readiness Fund to address structural or health and safety repairs needed to low-income homes that are not provided for under current WAP funding allocations. 	<ul style="list-style-type: none"> Supports a proactive approach to address Congressional concerns on weatherization “deferrals” issue. Increases throughput of weatherized homes by up to 5 percent.
LIHEAP Advantage Pilot \$0	\$100,000,000	+\$100,000,000
<ul style="list-style-type: none"> No funds requested. 	<ul style="list-style-type: none"> Establish the LIHEAP Advantage Pilot to explore approaches to reduce low-income households energy costs through energy efficiency and clean energy improvements, thereby reducing the demand for LIHEAP bill assistance. 	<ul style="list-style-type: none"> The increase will support improving the alignment and effectiveness of both the relevant HHS and DOE program.

State and Community Energy Programs State Energy Program

Description

The State Energy Program (SEP) strategically engages the leadership of states in deploying clean energy technologies across the United States. SEP funding transforms the energy economy state by state, establishing and implementing clean energy policies, plans, and programs to reduce energy costs, enhance economic competitiveness, improve emergency planning, and improve the environment. States have purview over many of the policy and program levers that can catalyze greater investment in clean energy and help the country realize the suite of economic and environmental benefits associated with clean energy. SEP provides states with capacity building resources, technical assistance, and fosters networks for sharing best practices to facilitate the adoption of plans, policies, and programs appropriate to state and regional circumstances.

A portion of the FY 2023 funding will provide foundational formula-based grants to 50 states, Washington, D. C., and 5 U. S. territories to advance their energy priorities through the design and implementation of energy efficiency and renewable energy programs. These grants support state energy offices in their development and implementation of energy programs that deploy portfolios of clean energy technologies addressing their specific goals and needs. A broad range of activities encompass the state energy offices' formula work, including: energy planning; building energy code adoption, implementation and compliance in continued coordination with EERE's Building Technologies Office; financing mechanisms for institutional retrofit programs; loan programs; energy savings performance contracting to retrofit government buildings and facilities; comprehensive residential energy programs for homeowners; transportation programs that accelerate the use of alternative fuels, including electric vehicles and infrastructure; and programs that remove barriers and support supply side and distributed renewable energy.

In FY 2023, SEP will continue its collaboration with states in a key initiative that leverages states' formula-based work. Technology Action Groups (TAGs), launched in the summer 2021, facilitate collaboration among states, leveraging SEP formula funding on topics of mutual interest to DOE and states. There are TAGs in two topic areas: (1) onsite energy systems at critical facilities, and (2) main street revitalization. Participation in the TAGs is voluntary and allows states to coordinate their efforts and receive topic-specific technical assistance from DOE. SEP is working with states to develop actionable plans for progress in the TAG topic areas. The collaboration will also design tools, document case studies, and create model strategies that can be used by all states interested in replicating the successful outcomes of these collaborations. The TAGs will wrap up in summer 2023 and if the TAGs are successful and there is state interest, DOE will consider launching a second round in FY 2023.

FY 2023 will mark the second year of a revitalized SEP competitive award program that will spark innovative decarbonization solutions. These awards will provide funding to states to develop decarbonization solutions to target persistent barriers across multiple states. States will develop solution sets or models that can be adopted by other states, and preference will be given to multistate awards in order to cover a range of energy, economic, workforce, environmental, and equity issues. The program will build on lessons learned from the FY 2022 round of competitive awards and previous successes, such as:

- Utah in September 2021 released the results from a state-led assessment of organized electricity market options in the West, including West-wide benefits from regional market configurations (Energy Imbalance Market, day-ahead, RTO) with multiple footprints. It includes a qualitative 'market factor' scorecard on how the configurations studied align with state energy policy priorities. Utah partnered with Idaho, Colorado, and Montana on the project and all Western states participated in the development of the assessment.
- Hawaii created the Hawaii Advanced Visualization Environment Nexus (HAVEN), a visualization modeling tool to help decision makers show tradeoffs from complex utility plans for electricity, transportation, water, etc. HAVEN uses 3D graphic and time-scaled visualization to ensure the public understands the tradeoffs and interdependencies of planned investments in renewable resource strategies, energy efficiency, electrification of transportation, etc. The tool is now housed at NREL; North Carolina and Kentucky have expressed interest in using HAVEN for energy scenario planning.

- With state partners Maine, Massachusetts, and Rhode Island, New York created a stakeholder-driven Roadmap that prioritized a set of actions and implementation steps for the states to move forward with offshore wind adoption, both individually and as a region. The states developed a Regional Market Characterization that defined state policies and investment needs, and also analyzed potential economic benefits for all states, including nationwide job benefits based on regional investment in offshore wind.
- Vermont developed the Home Energy Labeling Information EXchange (HELIX), an open-source model that can populate real estate listings with home energy consumption and energy cost estimate data for new and previously owned homes. HELIX has been fully implemented across seven states (New England + New York). HELIX makes energy efficiency home ratings and solar PV information available to real estate professionals, home buyers, and home sellers.

In FY 2023, SEP TAGs and competitive awards funding will include topics to support energy efficiency manufactured housing, including opportunities to develop and implement consumer education programs, and to design financing products and approaches to assist those seeking affordable manufactured housing to purchase new more energy efficient models.

A portion of SEP funds will also provide technical assistance to state energy offices and related stakeholders, in support of SCEP activities. SEP technical assistance tools, resources, and voluntary initiatives support state clean energy leadership, including developing plans and programs, establishing financing, implementing data management, and empowering organizations. Technical assistance is an interdependent component to the financial assistance activities—making technology deployment more efficient and effective, and enhancing the likelihood of program success. Technical support resources are integral to:

- Developing tools and solutions that address pervasive barriers;
- Creating national energy initiatives and strategic partnerships focused on deployment and sharing best practices;
- Convening peer exchanges to showcase replicable models;
- Providing technical data and information from leading experts;
- Improving web-based reporting and monitoring systems; and
- Adopting metrics that support quantitative and qualitative evaluation of state planning activities.

SEP is supporting states' workforce development efforts by conducting research, providing information, and facilitating peer exchange. SEP is working with DOE's National Renewable Energy Laboratory (NREL) to compile state-by-state forecasts for clean energy jobs in the next five to ten years. SEP's efforts are intended to help states fill existing critical clean energy jobs that will support emissions reductions and environmental justice, as well as create new jobs.

In addition to the work outlined above, SEP funding has supported technical assistance initiatives that have made significant progress toward clean energy leadership goals. These activities produced significant results in FY 2022 and will continue in FY 2023. Examples include:

- The Sustainable Wastewater Infrastructure of the Future (SWIFt) Initiative will continue under the expanded scope launched in Phase II in 2021. The overarching goal of the SWIFt Initiative is to engage over 300 facilities in a voluntary partnership to achieve 5 percent short-term and 25 percent long-term facility-wide energy savings by 2024. SWIFt recruitment currently emphasizes filling gaps in facility representation by "small" facilities (1-5 MGD capacity), facilities in the western region of the U. S., and rural facilities (with service territories of <2,500 population). SWIFt Phase II activities include implementing next-generation technologies (e. g., renewable energy, resource recovery, and advanced data management), piloting 50001 Ready, and delivering "Virtual In-Plant Training" workshops. These activities leverage tools and resources in the Wastewater Energy Management Toolkit developed during SWIFt Phase I, which more than 70 WRRFs used to cumulatively achieve 131 million kWh in energy savings.
- The Sustainable Corrections Infrastructure Partnership (SCIP) Accelerator is a voluntary partnership of state and local public correctional facilities working with DOE over three years to achieve portfolio-wide energy savings of 20

percent to catalyze energy management and resilience in the corrections sector. SCIP partners represent over 25 percent of state correctional facilities in the U. S.

- Public sector partnerships in EERE's Better Buildings Challenge working with more than 75 public sector entities who have committed to reduce energy and/or water intensity by 20 percent or more. As of 2020 data, public-sector partners have saved \$1 billion, 109 trillion Btus, and 1.5 billion gallons of water.
- The Energy Savings Performance Contracting (ESPC) Municipalities, Universities, Schools and Hospitals (MUSH) Market Working Group will support expanded ESPC best practices for the MUSH market and state and local ESPC programs.
- The State and Local Planning for Energy (SLOPE) Platform is a collaboration across EERE and with NREL to integrate and deliver data on energy efficiency, renewable energy, and sustainable transportation into an easy-to-access online platform to enable data-driven state and local energy planning.

SEP partners with the National Association of State Energy Officials (NASEO) to enhance collaboration with states. NASEO provides direct technical assistance to all 56 State and Territory Energy Offices (SEOs) in support of state energy efficiency and renewable energy programs. NASEO is the only non-profit organization for all 56 governor-designated SEOs in the states, territories, and District of Columbia. SCEP funds NASEO through a multi-year cooperative agreement that includes in-person workshops, peer exchanges, written deliverables, and state-focused outreach to support the delivery of energy efficiency and renewable energy programs in states and ensure coordination between DOE and the SEOs.

**State Energy Program
Activities and Explanation of Changes**

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
State Energy Program \$62,500,000	\$70,000,000	+\$7,500,000
<ul style="list-style-type: none"> • Advance deployment of effective energy efficiency and renewable energy policies and technologies by state governments. • Award and actively manage 56 formula grants supporting in state energy projects. • Actively manage 20+ competitive awards in a variety of areas including comprehensive energy planning, public-private efforts to expand use of and development of new financing and Property Assessed Clean Energy (PACE) financing models, benchmarking and disclosure, and resilience at the local government level • Continue with Phase II expansion of the Sustainable Wastewater Infrastructure of the Future (SWIFt) initiative. • Develop and deliver a portfolio of strategic technical assistance offerings to state energy offices. 	<ul style="list-style-type: none"> • Advance deployment of effective energy efficiency and clean energy policies and technologies by state governments. • Award and actively manage 56 formula grants supporting (\$56,000,000) in state energy projects. • Actively manage 5-10 competitive awards and release competitive FOA focused on decarbonization solutions. • Continue with Phase II of the Sustainable Wastewater Infrastructure of the Future (SWIFt) initiative and Sustainable Correctional. Infrastructure Partnership (SCIP). • Develop and deliver a portfolio of strategic technical assistance offerings to state energy offices and in sectors that focus on areas of joint state and local interest and collaboration. 	<ul style="list-style-type: none"> • The increase will support competitive awards to spur continued innovation by states in advancing deep decarbonization strategies at a multistate level. • No significant change. • No significant change. • No significant change. • No significant change.

State and Community Energy Programs Energy Future Grants

Description

The Energy Future Grants initiative will incentivize state, local, territory and tribal governments to incubate novel approaches to clean energy technology deployment, prioritizing investments that meet energy needs at the local level and are inclusive in improving the economic well-being of impoverished and disenfranchised communities, and/or communities that have been marginalized or overburdened. Clean energy technology deployment is essential to decarbonizing the U. S. economy. To be successful, it is critical to design deployment strategies that meet the needs of the communities these clean energy technologies will serve and to foster the workforce with the skills necessary to develop, demonstrate and deliver them. DOE will award state, local, territorial, and tribal awards allocated on a competitive basis that are designed to encourage state- and local-level early action, leadership, and partnership with the U. S. Government in a nationwide push to meet the President's clean energy goals.

The core concept of the program is to support state and local governments enacting clean energy deployment policies, inclusive of the power, buildings, and transportation sectors, and to encourage innovation by competitively awarding funds, with larger awards being available to states making greater clean energy policy progress and prioritizing benefits for disadvantaged communities. The goal would be to maximize participation and the tailoring of policies to local priorities, so criteria would be designed to allow flexibility on the types of policies or other measures that qualify, and account for a state's progress from its starting point, not just the ambition of its end point.

The latter point is critical to ensuring a level playing field and equitable distribution of funds. An example of how this could work: a state that already has advanced codes might propose to develop and implement net-zero emission codes; a state that has updated its code in several model code cycles might propose to catch its codes up. The state would get equitable treatment based on similar relative progress.

DOE will gather input from state energy offices, local governments, community stakeholders, and others on how to improve the program and identify the highest priority needs and issues that could be best addressed through the competitive grants program.

The opportunity for competitive awards will also enable collaboration on sector, regional, and/or nationally focused initiatives aimed at finding solutions to overcome barriers in meeting their clean energy economy goals. These competitive projects also provide opportunities for these entities to submit innovative proposals addressing issues specific to their situations and to leverage other funding to create sustainable, high-impact solutions in energy efficiency and renewable energy development. In FY 2023, Energy Futures grants will include topics to support energy efficiency manufactured housing, including opportunities to develop and implement consumer education programs, and to design financing products and approaches to assist those seeking affordable manufactured housing to purchase new more energy efficient models.

The Program complements the Community Programs by focusing on communities that are in the later phases of progress toward transformative energy technology and/or meeting a clean energy or decarbonization target or set of goals. Rather than focus on capacity building, the program will enable those communities to adopt the policies and transformative energy technologies needed to achieve their clean energy goals.

**Energy Future Grants
Activities and Explanation of Changes**

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
Energy Future Grants \$0	\$105,000,000	+\$105,000,000
<ul style="list-style-type: none"> No funding requested. 	<ul style="list-style-type: none"> Incentivize state, local, territory and tribal governments to incubate novel approaches to clean energy technology deployment, prioritizing investments that meet energy needs at the local level and are inclusive in improving the economic well-being of impoverished and disenfranchised communities, and/or communities that have been marginalized or overburdened. 	<ul style="list-style-type: none"> New FY 2023 program.

State and Community Energy Programs Community Programs

Description

SCEP's Community Programs is a place-based initiative that will empower American cities, counties, and communities with high impact, low-carbon solutions tailored to their needs, and developing and using a local workforce. SCEP will administer Community Programs, comprising competitive awards, on-site capacity, peer exchanges, and technical assistance to support the development and deployment of transformative clean energy programs, of qualifying local governments, that create good paying jobs. Emphasis will be placed on disadvantaged communities or small-to-medium-sized jurisdictions that are committed to but in the earlier phases of progress toward transformative energy technology and/or meeting a clean energy or decarbonization target or set of goals. Assistance will be targeted for clean energy programs and models that accelerate project delivery and deployment toward measurable outcomes and local initiatives. Assistance will include local efforts that address energy equity, diversity, and inclusion. Topics for awards, technical assistance, and other program activities will be coordinated other DOE program offices, including EERE, National Laboratories, and other Federal agencies as appropriate.

Local governments are increasingly leading efforts in decarbonization, climate and economic justice, and workforce transitions, creating a need to establish plans and programming that balance the needs of local public agencies, private enterprises, non-governmental organizations, community members, and utilities that serve these jurisdictions. Implementing lasting changes requires inclusive planning that incorporates a cross-sector approach. Local governments are uniquely positioned to develop programs that extend beyond isolated, short-term initiatives, and target long-range, community-based goals that connect clean energy, environmental justice, and workforce development priorities through a coordinated strategy. The Program will enable SCEP to enhance its ability to support these critical local government stakeholders through a new era of clean energy program development and deployment.

Building on over 140 existing local government partnerships and its history of working with over 2,000 local governments as a part of the Energy Efficiency Conservation Block Grant (EECBG) program, SCEP will administer \$20 million in competitive awards to up to 20 or more local governments that are committed, but in the earlier phases of progress toward transformative energy technology and/or meeting a clean energy/decarbonization target or set of goals and that create good paying jobs. These local entities are willing to take measurable steps to progress in one or more major sectors of the clean energy economy; however, they may not yet be ready to set economy-wide decarbonization goals.

SCEP will also use a portion of the funds for decarbonization technical assistance targeted to scaling best practices across a broad base of local entities beyond competitive awardees. SCEP will leverage technical assistance implementation models to establish and utilize local expertise as part of its technical assistance strategy. SCEP will also explore existing technical assistance delivery models, including a voucher program, in designing this aspect of the program. Examples of technical assistance areas include community engagement with a focus on environmental justice, goal setting, energy data management, financing, strategic planning, and in partnership with EERE, implementation of clean energy technologies.

This program will support transformative clean energy programs in local jurisdictions with a focus on one or multiple pillars:

- Achieving decarbonization: Targeted toward communities willing to take measurable steps and/or make commitments to progress in one or more major sectors of the local energy economy while not yet ready to set economy-wide decarbonization targets or goals.
- Advancing climate and economic justice: Preference for disadvantaged communities with a high energy burden.
- Leading workforce transitions toward clean energy futures: Intended to support workforce development and training for local careers in a clean energy economy.

**Community Programs
Activities and Explanation of Changes**

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
Community Programs \$0	\$25,000,000	+\$25,000,000
<ul style="list-style-type: none"> No funding requested. 	<ul style="list-style-type: none"> The FY 2023 Budget Request includes \$25,000,000 to launch the Community Programs. Deliver replicable, place-based competitive awards and technical assistance to support localized decarbonization initiatives that create good paying clean energy jobs in energy communities and disadvantaged communities and small-to-medium-sized jurisdictions. 	<ul style="list-style-type: none"> New FY 2023 program.
<ul style="list-style-type: none"> No funding requested. 	<ul style="list-style-type: none"> Ingrain environmental justice and clean energy workforce development outcomes in local energy program planning. 	

Program Direction

Overview

Program Direction provides for the costs associated with the Federal workforce, including salaries, benefits, travel, training, building occupancy, IT services, security clearance, and other related expenses. It also provides for the costs associated with contractor services that, under the direction of the Federal workforce, support the office.

Salaries and Benefits support Federal employees who provide executive management, programmatic oversight, and analysis for the effective implementation of the program.

Travel & Training includes transportation, subsistence, and incidental expenses that allow SCEP to effectively provide the Department's electricity-related outreach to regions, states, and tribes regarding planning needs and issues, policies, siting protocols, and new energy facilities.

Support Services includes contractor support directed by the Federal staff to perform administrative tasks and provide analyses to management. These efforts include issue-oriented support on science, engineering, environment, and economics that benefit strategic planning; technology and market analysis to improve strategic and annual goals; development of management tools and analyses to improve overall office efficiency; assistance with communications and outreach to enhance SCEP's external communication and responsiveness to public needs; development of program-specific information tools that consolidate corporate knowledge, performance tracking and inventory data, improve accessibility to this information, and facilitate its use by the entire staff.

Other Related Expenses includes corporate IT support (for DOE's Energy Information Technology Services [EITS] desktop services and IT equipment) and working capital fund (WCF) expenses, such as rent, supplies, copying, graphics, mail, printing, and telephones. It also includes office safety requirements, equipment upgrades and replacements, commercial credit card purchases using simplified acquisition procedures where possible, security clearance expenses, and other needs. The FY 2023 request also includes funding for NEPA related activities.

Highlights of the FY 2023 Budget Request

The FY 2023 Program Direction Request reflects a new proposed Control Point within SCEP for increased staffing to support the new and expanded program activities requested in FY 2023.

**Program Direction
Activities and Explanation of Changes**

FY 2021 Enacted	FY 2023 Request Level	FY 2023 Request Level vs. FY 2021 Enacted
Program Direction N/A – funding is non-comparable	\$24,727,000	N/A
<ul style="list-style-type: none"> Salaries and Benefits \$ 	<ul style="list-style-type: none"> \$14,446,000 - Salaries and Benefits support 75 FTEs that provide executive management, programmatic oversight, and analysis for the effective implementation of the program. Funding also provides support for S3 operations. 	
<ul style="list-style-type: none"> Travel & Training 	<ul style="list-style-type: none"> \$600,000 - Travel includes transportation, subsistence, and incidental expenses to effectively facilitate its mission 	
<ul style="list-style-type: none"> Support Services 	<ul style="list-style-type: none"> \$3,150,000 - Support Services includes contractor support directed by the Federal staff to perform administrative tasks and provide analysis to management. Support Services may include support for post-doctoral fellows 	
<ul style="list-style-type: none"> Other Related Expenses 	<ul style="list-style-type: none"> \$6,531,000 - Other Related Expenses includes EITS desktop services and WCF expense, such as rent, supplies, copying, graphics, mail, printing, and telephones. It also includes equipment upgrades and replacements, commercial credit card purchases using the simplified acquisition procedures to the maximum extent possible, security clearance expenses and other needs. \$1.875M is requested to support NEPA compliance activities. 	

Bipartisan Infrastructure Law (BIL) Investments

EERE was appropriated funds through the Bipartisan Infrastructure Law (BIL) (P.L. 117-58), which includes activities realigned to the new Office of State and Community Energy Programs. In FY 2022, approximately \$5 billion of activities related to weatherization assistance, buildings, advanced manufacturing (pilot program grants), energy efficiency (conservation block grants), and state energy program will be managed by the new SCEP office. In FY 2023, advanced appropriations will continue to fund activities related to buildings (energy efficiency and renewable energy improvements at public school facilities). Please refer to EERE’s Overview section for additional information on these BIL activities.

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	FY 2022 BIL Appropriation	FY 2023 BIL Appropriation	Managing Organization
Energy Efficiency and Renewable Energy			
Weatherization Assistance Program	3,500,000	0	SCEP
Buildings			
Building, Training, and Assessment Centers	10,000	0	SCEP
Career Skills Training	10,000	0	SCEP
Energy Efficiency Revolving Loan Fund Capitalization Grants	250,000	0	SCEP
Energy Auditor Training Program	40,000	0	SCEP
Energy Efficiency & Renewable Energy Improvements at Public School Facilities	100,000	100,000	SCEP
Advanced Manufacturing			
Energy Efficiency Materials Pilot Program Grants	50,000	0	SCEP
Energy Efficiency			
Energy Efficiency and Conservation Block Grant Program	550,000	0	SCEP
State Energy Program	500,000	0	SCEP
Total, Energy Efficiency and Renewable Energy	5,010,000	100,000	

GENERAL PROVISIONS—DEPARTMENT OF ENERGY

SEC. 301.

(a) No appropriation, funds, or authority made available by this title for the Department of Energy shall be used to initiate or resume any program, project, or activity or to prepare or initiate Requests For Proposals or similar arrangements (including Requests for Quotations, Requests for Information, and Funding Opportunity Announcements) for a program, project, or activity if the program, project, or activity has not been funded by Congress.

(b)

(1) Unless the Secretary of Energy notifies the Committees on Appropriations of both Houses of Congress at least 3 full business days in advance, none of the funds made available in this title may be used to—

- (A) make a grant allocation or discretionary grant award totaling \$1,000,000 or more;*
- (B) make a discretionary contract award or Other Transaction Agreement totaling \$1,000,000 or more, including a contract covered by the Federal Acquisition Regulation;*
- (C) issue a letter of intent to make an allocation, award, or Agreement in excess of the limits in subparagraph (A) or (B); or*
- (D) announce publicly the intention to make an allocation, award, or Agreement in excess of the limits in subparagraph (A) or (B).*

(2) The Secretary of Energy shall submit to the Committees on Appropriations of both Houses of Congress within 15 days of the conclusion of each quarter a report detailing each grant allocation or discretionary grant award totaling less than \$1,000,000 provided during the previous quarter.

(3) The notification required by paragraph (1) and the report required by paragraph (2) shall include the recipient of the award, the amount of the award, the fiscal year for which the funds for the award were appropriated, the account and program, project, or activity from which the funds are being drawn, the title of the award, and a brief description of the activity for which the award is made.

(c) The Department of Energy may not, with respect to any program, project, or activity that uses budget authority made available in this title under the heading "Department of Energy—Energy Programs", enter into a multiyear contract, award a multiyear grant, or enter into a multiyear cooperative agreement unless—

(1) the contract, grant, or cooperative agreement is funded for the full period of performance as anticipated at the time of award; or

(2) the contract, grant, or cooperative agreement includes a clause conditioning the Federal Government's obligation on the availability of future year budget authority and the Secretary notifies the Committees on Appropriations of both Houses of Congress at least 3 days in advance.

(d) The amounts made available by this title may be reprogrammed for any program, project, or activity, and the Department shall notify the Committees on Appropriations of both Houses of Congress at least 30 days prior to the use of any proposed reprogramming that would cause any program, project, or activity funding level to increase or decrease by more than \$5,000,000 or 10 percent, whichever is less, during the time period covered by this Act.

(e) None of the funds provided in this title shall be available for obligation or expenditure through a reprogramming of funds that—

- (1) creates, initiates, or eliminates a program, project, or activity;*
- (2) increases funds or personnel for any program, project, or activity for which funds are denied or restricted by this Act; or*

(3) reduces funds that are directed to be used for a specific program, project, or activity by this Act.

(f)

(1) The Secretary of Energy may waive any requirement or restriction in this section that applies to the use of funds made available for the Department of Energy if compliance with such requirement or restriction would pose a substantial risk to human health, the environment, welfare, or national security.

(2) The Secretary of Energy shall notify the Committees on Appropriations of both Houses of Congress of any waiver under paragraph (1) as soon as practicable, but not later than 3 days after the date of the activity to which a requirement or restriction would otherwise have applied. Such notice shall include an explanation of the substantial risk under paragraph (1) that permitted such waiver.

(g) The unexpended balances of prior appropriations provided for activities in this Act may be available to the same appropriation accounts for such activities established pursuant to this title. Available balances may be merged with funds in the applicable established accounts and thereafter may be accounted for as one fund for the same time period as originally enacted.

SEC. 302. Funds appropriated by this or any other Act, or made available by the transfer of funds in this Act, for intelligence activities are deemed to be specifically authorized by the Congress for purposes of section 504 of the National Security Act of 1947 (50 U.S.C. 3094) during fiscal year 2023 until the enactment of the Intelligence Authorization Act for fiscal year 2023.

SEC. 303. None of the funds made available in this title shall be used for the construction of facilities classified as high-hazard nuclear facilities under 10 CFR Part 830 unless independent oversight is conducted by the Office of Enterprise Assessments to ensure the project is in compliance with nuclear safety requirements.

SEC. 304. None of the funds made available in this title may be used to approve critical decision–2 or critical decision–3 under Department of Energy Order 413.3B, or any successive departmental guidance, for construction projects where the total project cost exceeds \$100,000,000, until a separate independent cost estimate has been developed for the project for that critical decision.

SEC. 305. Notwithstanding section 161 of the Energy Policy and Conservation Act (42 U.S.C. 6241), upon a determination by the President in this fiscal year that a regional supply shortage of refined petroleum product of significant scope and duration exists, that a severe increase in the price of refined petroleum product will likely result from such shortage, and that a draw down and sale of refined petroleum product would assist directly and significantly in reducing the adverse impact of such shortage, the Secretary of Energy may draw down and sell refined petroleum product from the Strategic Petroleum Reserve. Proceeds from a sale under this section shall be deposited into the SPR Petroleum Account established in section 167 of the Energy Policy and Conservation Act (42 U.S.C. 6247), and such amounts shall be available for obligation, without fiscal year limitation, consistent with that section.

SEC. 306. Subparagraphs (B) and (C) of section 40401(a)(2) of Public Law 117–58, paragraph (3) of section 16512(r) of title 42, United States Code, and section (I) of section 17013 of title 42, United States Code, shall not apply for fiscal year 2023.

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