Energy Efficiency and Renewable Energy
($K)

FY 2024 Enacted	FY 2026 Request
3,460,000	888,000

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 efficiency and renewable 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, $880,000,000, to remain available until expended: Provided, That of such amount, $183,000,000 shall be available until September 30, 2027, for program direction.

Mission

EERE advances America's security and prosperity through the research and development of affordable, secure, innovative, and integrated energy technology solutions across multiple sectors of the economy -- transportation, buildings, industry, and generation.

Overview

In support of Trump Administration priorities, this budget request focuses on cost efficiencies and fiscal constraint and focuses EERE resources on the energy technologies that are best positioned to advance energy dominance – reliable, firm power that Americans can depend on an unleashing American energy innovation.

EERE research focuses on the following key outcomes:

- Reducing costs and increasing efficiency to drive improvements in energy affordability,
- Securing domestic supply chains for critical materials and components for energy technologies,
- Growing the competitiveness of U.S. industries, science, and technology,
- Strengthening America's industrial sector,
- Ensuring the reliability, security, and modernization of the electricity grid,
- Promoting affordability and consumer choice in home appliances; and
- Using robust data collection, model development, and objective, transparent analysis to inform energy decisions.

As such, in accordance with Administration and Departmental priorities, the FY 2026 EERE budget request prioritizes research of emerging geothermal and hydropower technologies, as well as biofuels, industrial efficiency, critical minerals and materials, and advanced manufacturing technologies. It provides a moderate level of support for efficiency standards, specifically for work needed to repeal inefficient standards and/or meet statutory requirements. This request also provides for program direction funds needed to foster efficient and effective program management and facilities and infrastructure funds to support core operation of the National Renewable Energy Laboratory, including the next construction segment of the Energy Materials and Processing at Scale (EMAPS) facility.

Summary Funding Table by Budget Control
Energy Efficiency and Renewable Energy ($K)

	FY 2024 Enacted	FY 2026 Request
Vehicle Technologies	450,000	25,000
Bioenergy Technologies	275,000	70,000
Hydrogen and Fuel Cell Technologies	170,000	-
Energy Grid Integration	22,000	-
Solar Energy Technologies	318,000	-
Wind Energy Technologies	137,000	-
Water Power Technologies	200,000	90,000
Geothermal Technologies	118,000	150,000
Advanced Materials & Manufacturing Technologies	215,000	70,000
Industrial Technologies	237,000	80,000
Building Technologies	332,000	20,000
Program Direction	186,000	183,000
Strategic Programs	21,000	-
Facilities and Infrastructure	210,000	200,000
Total, Office of Energy Efficiency and Renewable Energy	**2,891,000**	**888,000**
Total, Energy Efficiency and Renewable Energy	**2,891,000**	**888,000**
Total, State and Community Energy Programs	**493,000**	**-**
Total, Manufacturing and Energy Supply Chains	**19,000**	**-**
Total, Federal Energy Management Program	**57,000**	**-**
Total, EERE Appropriation	**3,460,000**	**888,000**
Manufacturing and Energy Supply Chains[1]	**-**	**15,000**

[1] In FY 2026, funding for Manufacturing and Energy Supply Chains (MESC) will support EERE and Fossil Energy to sustain analysis in manufacturing, energy products, and critical minerals and materials.

Vehicle Technologies

Overview

Each year in the U.S., vehicles transport 18 billion tons of freight – about $55 billion worth of goods each day – and move people more than 3 trillion vehicle-miles. The transportation sector accounts for approximately 27 percent of total U.S. energy demand and over 17 percent of average U.S. household expenditures, making it, as a percentage of spending, the costliest personal expenditure after housing. Transportation is critical to the overall economy, from the movement of goods to providing access to jobs, education, and healthcare.

EERE's Vehicle Technologies Office focuses on research and development (R&D) of engines, batteries, power electronics, motors, materials, and transportation systems. The commercialization of vehicle technologies has contributed to cost savings for households and businesses, including gasoline cars that use less fuel, trucks that can travel up to twice as far on a gallon of diesel, and more affordable vehicles for many applications. Research has also begun to make our supply chains more secure by reducing the need for critical minerals like rare earths in magnets, cobalt in batteries, and demonstrating new ways to recycle batteries and other vehicle materials, keeping those critical minerals in the United States.

Highlights of the FY 2026 Budget Request

The FY 2026 Request for Vehicle Technologies prioritizes activities most essential to meet Administration goals of energy dominance, growth of U.S. industry and manufacturing, support of national defense, and cost savings to households and businesses.

- Electrification: Focuses on the most promising and innovative battery chemistries, and specifically, on reducing needs for critical minerals and battery mineral recycling.

- Off-Road, Rail, Marine, and Aviation Technologies (formerly Decarbonization of Off-Road, Rail, Marine, and Aviation): Prioritizes engine and emission control R&D for improved engine and hybridization technologies that reduce costs for businesses and farmers and support a wider range of alternative fuels.

- Technology Integration & Deployment: Prioritizes meeting statutory requirements for data collection and dissemination. Remaining funds will be used to wind down Federal activities that support Clean Cities and Communities Coalitions.

- Analysis: Request supports finalizing improvements to models and tools with a wide user base and support for the broader use of those tools without further development.

Vehicle Technologies
Funding ($K)

	FY 2024 Enacted	FY 2026 Request
Electrification Technologies	225,500	15,000
Off-Road, Rail, Marine, and Aviation Technologies	35,000	7,000
Materials Technology	37,500	0
Energy Efficient Mobility Systems	45,000	0
Technology Integration & Deployment	101,000	2,500
Data, Modeling, and Analysis	6,000	500
Total, Vehicle Technologies	**450,000**	**25,000**

Explanation of Change for Vehicle Technologies

Electrification Technologies: The FY 2026 Request deprioritizes funds for Electrification Technologies and activities focused on advanced power electronics, grid integration research, and motors. The Request provides restrained funding for Battery R&D, including critical mineral related battery research and reduces support for battery mineral and supply chain traceability and recycling and materials facilities at several National Labs.

Off-Road, Rail, Marine, and Aviation Technologies: The FY 2026 Request prioritizes research focused on engine and hybrid applications (e.g., construction, agriculture, rail, or mining), focusing on those with the greatest opportunity to reduce costs for businesses and farmers, and narrows work among relevant National Laboratories.

Materials Technology: The FY 2026 Request includes no funds for Materials Technology.

Energy Efficient Mobility Systems: The FY 2026 Request includes no funds for Energy Efficient Mobility Systems.

Technology Integration & Deployment: The FY 2026 Request prioritizes statutory requirements for data collection and analysis, including publishing fuel economy data (e.g., fueleconomy.gov).

Data, Modeling, and Analysis: The FY 2026 Request supports limited analysis and tools needed by other program areas.

Bioenergy Technologies

Overview

EERE's Bioenergy Technologies Office (BETO) focuses on accelerating the development of cost-competitive technologies to convert the Nation's abundant, domestic biomass and waste resources into advanced biofuels, chemicals, and bio-based products. BETO advances cutting-edge technologies designed to produce "drop-in" biofuels, including synthetic aviation fuels (SAF) from biomass, including wastes from the forests, agriculture, landfills, water treatment facilities, as well as waste gases from industry. BETO conducts activities to maximize U.S. potential to provide fuels that meet both domestic and export market needs; it also focuses on converting these resources into high-value chemicals that can support performance-enhanced polymers and products while simultaneously enhancing the economics of biofuel production.

Production of fuels and products derived from domestically produced biomass and wastes offers a tremendous opportunity to increase economic activity across the entire supply chain, reducing waste streams in our communities, creating new jobs in the farms and forests of rural America, and contributing to growth of the Nation's construction and manufacturing industry. Investing in bioenergy technologies helps our National competitive advantage and positions the U.S. as a global leader in the industrial bioeconomy, which is valued at $1.3 - $2.2 trillion[1]. DOE studies have confirmed that the U.S. has the resource potential to sustainably produce well over one billion dry tons of biomass and waste resources without disrupting agricultural markets for food and animal feed. This could produce approximately 70 billion gallons of biofuels for strategic fuel markets, while also producing high-value chemicals and products and maximizing the use of marginal lands with the production of energy crops that benefit farmers.

Highlights of the FY 2026 Budget Request

The FY 2026 Request supports RD&D to achieve cost reductions across the supply chain to produce SAF, other strategic biofuels, and bio-based products. This includes maintaining core capabilities at the National Laboratories that enable partnerships with industry to advance technologies by bridging the gap between research and commercialization.

High impact RD&D will continue for mobilizing and utilizing biomass resources, including purpose-grown energy crops to generate publicly available data in all regions of the U.S. to aid in feedstock adoption and siting of biorefineries.

Research will incorporate AI and machine learning to improve data analysis, process optimization, and predictive modeling. DOE will update the Greenhouse Gas, Regulated Emissions and Energy Use in Technologies (GREET) tool to be used by research, policy and industry decision makers pursuing high impact technologies for fuels.

[1] https://www.mckinsey.com/industries/life-sciences/our-insights/the-bio-revolution-innovations-transforming-economies-societies-and-our-lives

Bioenergy Technologies
Funding ($K)

	FY 2024 Enacted	FY 2026 Request
Renewable Hydrocarbon Feedstocks (formerly Renewable Carbon Resources)	77,900	25,000
Conversion Technologies	100,000	39,000
System Development and Integration	87,600	5,000
Data, Modeling, and Analysis	9,500	1,000
Total, Bioenergy Technologies	**275,000**	**70,000**

Explanation of Change for Bioenergy Technologies

Renewable Hydrocarbon Feedstocks (formerly Renewable Carbon Resources) will prioritize energy crop demonstrations to collect necessary data to support farmer and producer adoption and reduce funding for bench-scale algae research.

Conversion R&D will focus on reducing costs and increasing performance of the most promising near-term pathways to scaling up production of fuels and chemicals. The Request reduces funding for longer-term, enabling technology research.

Systems Development and Integration will maintain support for National Laboratory based user facilities for initial pre-pilot testing to de-risk industrial scaling. The FY 2026 Request discontinues support for public-private partnerships that support promising technologies at integrated pilot and demonstration scale.

Data, Modeling, and Analysis will focus on maintaining the scientific integrity of GREET as well as incorporation of AI/machine learning to improve modeling and data analysis and reduce sustainability analysis activities.

Water Power Technologies

Overview

EERE's Water Power Technologies Office (WPTO) administers a broad portfolio of activities to strengthen the body of technical knowledge and support for industry efforts to develop, demonstrate, and deploy hydropower and marine energy technologies at all scales. To accomplish its objectives, WPTO supports R&D across industry, academia, and the National Laboratories through a variety of mechanisms and innovative partnerships.

America has vast domestic hydropower and marine energy resources, with enormous potential to advance energy addition through modernizing the existing hydropower fleet, expanding into new hydropower markets and applications, capturing the oceans' immense power to deliver energy and electricity along U.S. coasts, increasing generation and flexibility across the Nation's sizable hydropower and pumped storage fleet, strengthening U.S. water power supply chains, and streamlining Federal permitting processes for water power projects. WPTO focuses on key opportunities, including enhancing hydropower and pumped storage hydropower (PSH) planning; increasing fleet operation efficiency; conducting site assessments for powering non-powered dams (NPDs) to cost-effectively increase generation and flexibility; enhancing cybersecurity research for hydropower; advancing marine energy technologies to support new and growing industries using waves, currents, tides, and gradient differentials (ocean thermal, pressure, and salinity); and deepening understanding of energy-water connections to integrate energy and water management.

Highlights of the FY 2026 Budget Request

The FY 2026 Request supports ongoing National Laboratory R&D focused on powering NPDs, developing new stream reaches, modernizing irrigation systems, in-the-field validation of innovative hydropower technologies, developing new strategies to quantify hydropower's value to the grid, advancing digital tools supporting fleet modernization, and improving environmental performance and accelerating hydropower relicensing through innovative fish passage technologies. The Request also supports assessing the feasibility of converting retired or abandoned oil and gas mines for PSH and R&D of geomechanical PSH with the Geothermal Technologies Office; NPD pilots at large, high capacity, or federal dams to reduce civil works costs; coordination with U.S. Bureau of Reclamation and U.S. Army Corps of Engineers on upgrade schedules to address domestic supply chain gaps; and integrating training into the hydropower workforce—covering cybersecurity, physical security, and innovative operational strategies—to enhance resilience and security at hydropower facilities nationwide.

The FY 2026 Request supports marine energy R&D for advancements in controls, materials, components, operations, maintenance, and resource characterization. Funding also supports assisting developers during in-water deployments by collecting robust scientific data on marine energy device operations and maintenance, as well as operations and upgrades to test infrastructure and marine energy test sites. To accelerate marine energy development, WPTO works with the National Laboratories to make marine energy data public while ensuring database integrity, and to maintain and improve public databases, web tools, and analytical reports, ensuring marine energy informational resources are easily accessible for all potential users.

Water Power Technologies
Funding ($K)

	FY 2024 Enacted	FY 2026 Request
Hydropower Technologies	59,000	50,000
Marine Energy Technologies	141,000	40,000
Total, Water Power	**200,000**	**90,000**

Explanation of Change for Water Power Technologies

The Department's FY 2026 Request supports the following ongoing National Laboratory R&D activities:

- powering nonpowered dams & developing new stream reaches;
- modernizing irrigation systems;
- field validation of hydropower technology innovations;
- developing new strategies to quantify hydropower's value to the grid;
- advancing digital tools supporting hydropower fleet modernization;
- improving environmental performance to accelerate hydropower relicensing;
- marine energy R&D for advancements in controls, materials, components, operations, maintenance, and resource characterization;
- Scientific data collection during marine energy in-water deployments to improve maintenance and operations; and
- upgrades to marine energy test infrastructure and test sites.

Geothermal Technologies

Overview

America has abundant natural geothermal resources that, if developed for various beneficial uses, can lower energy costs, reduce dependencies on foreign materials and energy sources, make our energy systems more reliable, and help meet the Nation's surging electricity grid demand. The mission of EERE's Geothermal Technologies Office (GTO) is to enable an energy future where all Americans benefit from abundant, domestic geothermal energy solutions. GTO strives to increase deployment of geothermal energy while enabling the creation of a workforce that leverages the unique skills and abilities of our strong domestic oil and gas workforce for the geothermal jobs of the future.

GTO's diversified and complementary technology portfolio prioritizes investments in three closely related technology categories: Enhanced Geothermal Systems (EGS), Hydrothermal Resources, and Low Temperature and Coproduced Resources. This portfolio addresses technology barriers that industry may not have the technical capabilities, financial support, or institutional knowledge to address. In addition, GTO's Data Modeling, and Analysis activity assesses future opportunities across geothermal use cases through robust grid analysis; impacts, market, and technoeconomic assessments; and reduction of non-technical barriers, including permitting and lack of awareness of the myriad benefits of this technology.

GTO's RD&D and analysis portfolios advance toward our strategic goals to: (1) reduce the cost of EGS by 90 percent to $45 per megawatt hour by 2035 to supply 90 GW of EGS and hydrothermal resources to the grid by 2050; and (2) improve energy affordability nationwide via cost-competitive geothermal industrial and residential heat and storage technologies by 2035.

Highlights of the FY 2026 Budget Request

The Department's FY 2026 Request for Geothermal Technologies supports programs that help discover, access, and develop geothermal resources across the nation. Geothermal promises firm and flexible power with significant generation potential across the US. The FY 2026 Request prioritizes next-generation pilots to test new power production concepts in multiple geologies, expanded nation-wide exploration and drilling programs, new critical material and geologic hydrogen assessment and technology development efforts, and techno-economic tool refinements.

Geothermal Technologies
Funding ($K)

	FY 2024 Enacted	FY 2026 Request
Enhanced Geothermal Systems	57,500	78,000
Hydrothermal Resources	24,000	31,000
Low Temperature and Coproduced Resources	24,000	25,500
Data, Modeling, and Analysis	12,500	15,500
Total, Geothermal Technologies	**118,000**	**150,000**

Explanation of Change for Geothermal Technologies

Enhanced Geothermal Systems
The Request maintains focus on high impact R&D topics across the Enhanced Geothermal Systems (EGS) Subprogram. This includes Subsurface Enhancement & Sustainability R&D that supports Early Career Awards in STEM and fewer EGS Greenfield Demonstrations. The FY 2026 budget also defers funding for a potential future extension of the FORGE project until FY 2027, by which time long-term circulation tests at the field laboratory site will provide clarity on the scientific value of future operations at FORGE to EGS commercialization. The Request also prioritizes Subsurface Accessibility R&D, which includes critical geothermal power-related RD&D via the GEODE project, R&D to increase sustainability and reduce costs associated with Well Construction, and subsurface accessibility aspects of EGS Greenfield Demonstrations. The budget will continue funding for Data, Modeling and Analysis R&D and Exploration and Characterization Activities to maintain near-field seismic monitoring of EGS sites for induced seismicity.

Hydrothermal Resources
The Request maintains support for activities related to geothermal Exploration and Characterization, including an initiative to support drilling of exploration wells and subsurface characterization activities that will build upon a legacy of successful exploration campaigns to reduce the risks and costs of geothermal development for private sector partners. The requested budget will also maintain funding for Subsurface Accessibility R&D, including critical geothermal power-related RD&D via the GEODE project, and Resource Maximization R&D, including subsurface energy cross-industry R&D efforts at the intersections of geothermal energy, critical minerals, and geologic hydrogen. This Request deprioritizes funding for prior year initiatives, including the Hidden Systems and Regional Geothermal Data Partnerships initiatives, and instead focuses on development of a novel geothermal Exploration and Characterization program that will reduce drilling risks for private sector developers.

Low Temperature and Coproduced Resources
The Request maintains this subprogram's focus on Resource Maximization R&D initiatives in FY 2026, including funding for the Federal Geothermal Partnerships program supporting technical assistance for Federal sites engaged in geothermal energy development, such as Department of Defense and General Services Administration sites. This Request also supports a new funding opportunity for hybrid geothermal demonstrations, including RD&D activities addressing the large thermal and electric loads of data centers and will support an initiative building the shallow drilling workforce needed to sustain geothermal energy development in the U.S. This budget deprioritizes RD&D focused on residential and industrial applications for geothermal heat pumps, particularly for technologies that are considered commercial.

Data, Modeling, and Analysis
The Request maintains funding for developing and maintaining techno-economic tools and data, supporting cross-DOE analysis on firm generation resource grid value, technical assistance, and work with Federal and state partners to streamline geothermal siting, leasing, and permitting. The Request deprioritizes funding in NREL analytic capacity building and stakeholder outreach and integration with cross-EERE initiatives valuing geothermal heat pumps.

Industrial Technologies
(formerly Industrial Efficiency and Decarbonization)

Overview

Every day, Americans rely on iron and steel, chemicals, cements and concrete, glass, and other industrial products that are energy intensive to manufacture and exposed to global trade and supply chain risks. Through research, development, pilots, and technical assistance, EERE's Industrial Technologies Office (ITO, formerly the Industrial Efficiency and Decarbonization Office) works to strengthen America's industrial sector to compete on a global stage and accelerate the innovation of affordable, secure, energy efficient technologies and processes.

ITO executes its mission through three subprograms: Energy-Intensive Industries, Cross-Sector Technologies, and Technical Assistance and Workforce Development. Through these subprograms, ITO pursues American energy abundance by modernizing industrial infrastructure and advancing innovative energy-efficient technologies to strengthen national security and global competitiveness. These efforts aim to reduce energy demands, unlock cost savings, generate jobs, and improve the lives of Americans.

- Energy-Intensive Industries: Supports the strategic development of the U.S. industry subsectors with the highest energy consumption, with a particular focus on chemicals and refining, iron and steel, food and beverage, forest products, and building materials, including cement, concrete, glass, and asphalt.

- Cross-Sector Technologies: Accelerates the readiness of process and equipment technologies that can lower energy usage across many industrial subsectors. Activities focus on industrial systems with wide applicability, including advanced thermal processes and systems, advanced fuels and feedstocks, barriers to utilization of grid and on-site electricity from large industrial loads, like data centers, and the efficiency of water and wastewater treatment technologies.

- Technical Assistance and Workforce Development: Addresses the significant energy and cost savings achievable through the adoption of existing technologies and practices, including energy management practices, onsite energy generation systems, and other advanced technologies. Activities include direct assistance and the development of transformational tools to help American companies realize these benefits and translate them into new opportunities for business success and lower costs for American consumers.

Highlights of the FY 2026 Budget Request

The FY 2026 Request prioritizes a limited set of broad technologies applicable to multiple industrial sectors, rather than sector-specific R&D. National Laboratory funding focuses on a subset of new and ongoing capabilities, prioritizing those with the highest impact. The FY 2026 Request also focuses on sustaining continuity for select Technical Assistance programs in priority regions and sectors.

Industrial Technologies
Funding ($K)

	FY 2024 Enacted	FY 2026 Request
Energy-Intensive Industries	113,000	20,000
Cross-Sector Technologies	81,000	40,000
Technical Assistance & Workforce Development	43,000	20,000
Total, Industrial Technologies	**237,000**	**80,000**

Explanation of Change for Industrial Technologies

- The Department's FY 2026 request will prioritize emerging needs, with a particular focus on supporting power availability for data center development, including enhanced utility-focused technical assistance and expanded National Laboratory capabilities for testing novel thermal management technologies.

- Funding will support a continuation of priority activities in chemical manufacturing, with a particular focus on high-priority work in thermal reactor development. Funding will be subcritical to maintain support in other chemicals topic, including electrochemical reactors and innovative chemical feedstocks, as well as other energy-intensive industries, including iron and steel, cement and concrete, food and beverage, and forest products.
- Cross-sector technologies activities will focus on maintaining viability of a select subset of National Laboratory capabilities on areas of broad relevance to the industrial sector, with a focus on thermal energy management and industrial load flexibility, by deprioritizing funding for R&D of water and wastewater treatment technologies and reduction in support for Manufacturing USA Institutes and Hubs.
- Technical assistance activities will shift focus to prioritize partnerships between utilities and grid operators with operators of data centers and other large industrial loads and deprioritize broad industry-wide programs like the Better Plants Challenge and the Onsite Energy Technical Assistance Partnerships (TAPs).

Advanced Materials and Manufacturing Technologies

Overview

The U.S. manufacturing sector and its complex supply chains are vital to our economic and national security. The sector employs nearly 13 million people, represents 11% of the U.S. gross domestic product and accounts for roughly 25% of U.S. exports. The opportunity for the U.S. to recapture global leadership in manufacturing is clear – the global market for energy technologies is estimated to be $130 trillion through 2050, while the U.S. accounts for just 6% of these technologies today.

EERE's Advanced Materials and Manufacturing Technologies Office (AMMTO) works to strengthen the Nation's energy manufacturing sector by accelerating innovations in materials and manufacturing technologies that are integral to the strength of our domestic supply chains. AMMTO pursues American energy dominance through new materials and manufacturing capabilities that increase the performance of our Nation's power generation, transmission, energy storage, and energy use. New materials such as advanced metal alloys, composites, semiconductors, and energy materials enable greater power output, lower transmission losses, higher energy storage density and higher efficiency energy systems. Emerging manufacturing technologies including artificial intelligence, digital twins, human-augmented automation systems, and additive manufacturing enable domestic manufacturing to run faster at lower cost and with higher quality. AMMTO seeks to unlock industrial material and process innovation that will establish the U.S. as the global leader in the production of energy technologies and generate high quality American jobs.

AMMTO pursues this vision through three subprograms: Next Generation Materials and Processes, Secure Material Supply Chains, and Energy Technology Manufacturing and Workforce.

- Next Generation Materials and Processes: Supports the development of advanced manufacturing equipment and processing technologies that are critical supply chain elements in the domestic production of energy technologies. Activities focus on advancing new processing technologies and digital technologies, such as artificial intelligence (AI) and digital twins for manufacturing equipment and systems.
- Secure Material Supply Chains: Accelerates the development of manufacturing solutions for materials that are the building block of the domestic supply chain for energy technologies. Activities focus on technologies to support critical minerals and materials for energy, as well as integrated supply chains for other strategic materials.
- Energy Technology Manufacturing and Workforce: Focuses on efforts to advance materials and manufacturing innovations and workforce programs for intermediate energy technology products that are core to many energy systems, including energy storage and semiconductor systems.

Highlights of the FY 2026 Budget Request

- Prioritizes R&D of critical materials mid-stream processing technologies through the Critical Material Innovation Hub; reduces support for material-specific supply chain analysis studies and pilot projects and testbeds.
- Supports limited R&D for domestic manufacturing equipment that focuses on use of artificial intelligence (AI) technologies and deprioritizes automation and new processing technologies.
- Through the National Laboratories, supports a prioritized subset of ongoing research and development capabilities.
- Winds down entrepreneurial incubation programs at the National Laboratories.

Advanced Materials and Manufacturing Technologies
Funding ($K)

	FY 2024 Enacted	FY 2026 Request
Next Generation Materials and Processes	82,000	20,000
Secure Material Supply Chains	73,000	45,000
Energy Technology Manufacturing & Workforce	60,000	5,000
Total, Advanced Materials and Manufacturing Technologies	**215,000**	**70,000**

Explanation of Change for Advanced Materials and Manufacturing Technologies

- The Department's FY 2026 Request prioritizes funds for Next-Generation Materials and Processes on initiatives in artificial intelligence (AI) enabled manufacturing equipment and advanced materials for energy applications. It also supports a phased reduction in Manufacturing USA programs (i.e., CESMII, CyManII, IACMI), laboratory-based advanced manufacturing facilities (i.e., MDF, CFTF, COMET) and technical assistance programs (i.e., HPC4MFG).
- The FY 2026 Request prioritizes funds for Secure Material Supply Chains toward addressing mid-stream processing technologies for critical materials for energy and eliminates support for initiatives focused on recovery, recycling and reuse technologies.
- The FY 2026 Request prioritizes funds for Energy Technology Manufacturing to support a phased shutdown of laboratory-hosted manufacturing entrepreneurial programs (i.e., LEEP) and eliminates support for semiconductor and energy storage manufacturing, including the Manufacturing USA program (i.e., PowerAmerica).

Building Technologies

Overview

Buildings play a key role in driving affordability and promoting consumer choice. The U.S. building sector accounts for 75% of total U.S. electricity use and 40% of all energy use,. Buildings are at the intersection of our most critical investments to improve energy use, reduce current and future costs, and accelerate consumer choice.

EERE's Building Technologies Office (BTO) works across this diverse sector to identify a range of technical solutions that improve energy performance in buildings, increase productivity, reduce costs to occupants and owners, and leverage grid integration to improve energy demand flexibility – helping businesses, consumers, and grid operators plan effectively while enabling more affordable utilization of the power sector and transportation. BTO's primary mission is to reduce the cost of operating homes and businesses. It pursues this mission through five subprograms: Emerging Technologies, Commercial Buildings, Residential Buildings, Codes, and Standards. These efforts prioritize the most impactful cost reductions from building end uses, with an emphasis on affordable space heating, cooling, and water heating, and an increased focus on market priming, building quality, and accelerated adoption of high-performing technologies.

Building Technologies
Funding ($K)

	FY 2024 Enacted	FY 2026 Request
Emerging Technologies	119,000	3,000
Commercial Building Integration	76,000	7,000
Residential Building Integration	62,000	3,000
Appliance and Equipment Standards	60,000	5,000
Building Energy Codes	15,000	2,000
Total, Building Technologies	**332,000**	**20,000**

Highlights of the FY 2026 Budget Request

- The Request funds deregulatory actions to repeal inefficient standards and meet statutory requirements, unlocking cost-savings to American consumers through the rollback of unnecessary or uncalibrated requirements for a wide range of commercially available products.
- The Request also includes funding to continue statutorily required activities for building code determinations, working in collaboration with the International Code Council (ICC) and Association for Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE).
- Non-regulatory investments continue a select subset of technical assistance activities and industry partnerships (including Better Buildings) at reduced scale.
- R&D investments support select analysis and select tool maintenance. No funds are included for building technology specific R&D. No funds are included for testing and validation facilities at National Laboratories.

Program Direction

Overview

Program Direction enables EERE to maintain and support a world-class Federal workforce and provide the necessary internal infrastructure to execute the EERE mission.

Highlights of the FY 2026 Budget Request

The FY 2026 Request prioritizes the EERE workforce, maintaining support for program and project management, oversight activities, contract administration, and facility needs, as well as data management and IT functionality. The Request assumes a zero percent pay increase for Federal staff and includes funding to meet anticipated permanent changes of station and voluntary and involuntary separation payment requirements.

Of the total requested, $8M supports Program Direction for the Federal Energy Management Program (FEMP) to wind down operations.

Program Direction
Funding ($K)

	FY 2024 Enacted	FY 2025 Enacted	FY 2026 Request	FY 2026 Request vs FY 2025 Enacted	
				$	%
Salaries and Benefits	120,436	120,436	123,856	3,420	3%
Travel	3,750	3,750	1,661	-2,089	-56%
Support Services	18,750	18,750	17,630	-1,120	-6%
Other Related Expenses	43,064	43,064	39,853	-3,211	-7%
Total, Program Direction	**186,000**	**186,000**	**183,000**	**-3,000**	**-2%**

Explanation of Change for Program Direction

The FY 2026 Request reflects a decrease of $3 million dollars. The decrease is attributed to a reduction of FTE, support services contracts, travel, and training.

Program Direction
Activities and Explanation of Changes
($K)

FY 2025 Enacted	FY 2026 Request	Explanation of Changes FY 2026 Request vs FY 2025 Enacted
Program Direction		
$186,000	**$183,000**	**-$3,000**
Salaries and Benefits		
$120,436	$123,856	+$3,420
Funds support a target of 714 FTEs and associated benefits.	Funds will support an estimated 368 EERE FTEs and 16 FEMP FTEs, as well as associated benefits, including required permanent change of station payments[1] and other payments resulting from separations.	Increase includes funds for EERE as well as FEMP and funds for required relocation, separation payments, and leave payouts.
Travel		
$3,750	$1,661	-$2,089
Funds support Federal employee travel for project oversight and other critical activities.	Funds will support EERE mission critical travel.	Estimate based on minimum travel requirements.
Support Services		
$18,750	$17,630	-$1,120
Support services funding provided technical and administrative contract support, and information technology services.	Support services funding provides technical and administrative contract support, and information technology services.	Prioritizes critical IT infrastructure, data management, and contract administration support needed to maintain operations.
Other Related Expenses		
$43,064	$39,853	-$3,211
Funds working capital and other Departmental requirements for facilities, administrative expenses, security, and publications.	Funds working capital and other Departmental requirements for facilities, administrative expenses, security, and publications.	The decrease reflects anticipated adjustments based on streamlining business infrastructure investments and an overall reduction in staffing levels.

[1] See Title 41 – Code of Federal Regulations, Subtitle F, Chapter 302, Subchapter B, Part 302-3 – Relocation Allowances

Facilities and Infrastructure

Overview

The National Renewable Energy Laboratory (NREL) is the Office of Energy Efficiency and Renewable Energy's (EERE) Federally Funded Research and Development Center (FFRDC). NREL serves as the Nation's preeminent institution for developing and integrating a broad array of energy technologies into robust, resilient systems, addressing the entire energy spectrum, from generation to distribution to end use. NREL strives to achieve an affordable and secure energy future through leading research, innovation, and strategic partnerships to deliver integrated solutions.

EERE is NREL's steward and primary sponsor. Facilities and Infrastructure (F&I) funding allows EERE to ensure continuity of essential laboratory operations by –

- Providing a safe, secure work environment for the protection of personnel, partners, and the public.
- Providing secure information networks with strong cybersecurity protocols.
- Maintaining, upgrading, and acquiring mission-critical science and technology capabilities to support NREL's science infrastructure.
- Providing direct funding for operational activities of major facilities and infrastructure and site-wide investments.

F&I funding also supports EERE stewardship of secure grid modernization and broader energy systems integration capabilities at the Energy Systems Integration Facility (ESIF), a DOE-designated user facility designed to inform early-stage research, using high performance computing capabilities.

Highlights of the FY 2026 Budget Request

EERE's FY 2026 Request prioritizes operations and maintenance, facility management, and construction.

Operations and Maintenance: Maximizes efficiencies to support the maintenance, repair, safety, and security of the NREL campuses in accordance with DOE Order 430.1C, *Real Property and Asset Management*.

Facility Management: Supports ESIF Operations and maintains utilization of the current High Performance Computer (HPC), "Kestrel."

Construction: Prioritizes funding for the last segment of construction of the Energy Materials and Processing at Scale (EMAPS) facility, including equipment, building security, and critical alarm systems such as gas detection. FY 2026 is planned to be the final year of funding, and the current estimated project completion date is April 2028. There is no change in project scope.

Facilities and Infrastructure
Funding ($K)

	FY 2024 Enacted	FY 2026 Request
Operations and Maintenance	102,370	96,450
Facility Management	57,630	49,550
21-EE-001, Energy Materials Processing at Scale (EMAPS)	50,000[1]	54,000
Total, Facilities and Infrastructure	**210,000**	**200,000**

Explanation of Change for Facilities and Infrastructure

[1] For FY 2024, EERE reprogrammed $7 million from Operations and Maintenance to EMAPS to meet contractual requirements. For FY 2025, EERE reprogrammed $2 million from AMMTO and $2 million from Building Technologies to EMAPS to meet contractual requirements.

The FY 2026 Request prioritizes funds for the EMAPS construction line-item. It also prioritizes required funding for critical maintenance and repair and safety and security measures for all NREL campuses, as well as continued operation of the ESIF user facility, while deprioritizing recapitalization of equipment.

Facilities and Infrastructure
Capital Summary ($K)

	Total[1]	Prior Years	FY 2024 Enacted	FY 2025 Enacted	FY 2026 Request	FY 2026 vs FY 2025
Capital Summary (including Major Items of Equipment (MIE))						
Capital Equipment > $5M (including MIE)	-	-	-	-	-	-
Minor Construction	-	52,700	33,070	1,010	0	-1,010
Major Construction	-	59,000	50,000	50,000	54,000	+4,000
Total, Capital Summary	**-**	**111,700**	**83,070**	**51,010**	**54,000**	**+2,990**
Capital Equipment > $5M (including MIE)						
Total Non-MIE Capital Equipment (< $5M)	-	19,580	4,000	2,880	6,370	+3,490
Total, Capital Equipment (including MIE)	-	**19,580**	**4,000**	**2,880**	**6,370**	**+3,490**
Minor Construction Projects						
Total Direct Funded Minor Construction Projects (TEC <$5M)	-	-	3,170	1,010	-	-1,010
SERF/S&TF Ventilation (DF & IF)	14,700	14,700	-	-	-	-
Energy Resilience Building (DF)	33,000	33,000	-	-	-	-
ESIF HPC Data Center 10MW Upgrade (DF)	5,000	5,000	-	-	-	-
STM Substation (DF)	29,900	-	29,900	-	-	-
STM East Campus Infrastructure (IF)*	33,000	-	-	-	33,000	33,000
Total, Minor Construction Projects	**115,600**	**52,700**	**33,070**	**1,010**	**0**	**-1,010**
21-EE-001, Energy Materials and Processing at Scale, TEC	224,000	59,000	50,000	50,000	54,000	-
Total, Construction	**339,600**	**111,700**	**83,070**	**51,010**	**54,000**	**+2,990**
Total, Capital Summary	**339,600**	**131,280**	**87,070**	**53,890**	**60,370**	**+6,480**

*STM East Campus Infrastructure project not reflected in total as it is indirect funded.

[1] Dashes (-) in the Total column indicates a broad category where totaling would not be applicable as it would be for an individual investment.

Minor Construction Projects ($M)

Facilities & Infrastructure Operations & Maintenance	
Project Name:	Energy Resilience Building (ERB)
Location/Site:	NREL South Table Mountain Campus
Type:	Minor Construction Project (Direct funded)
Total Estimated Cost (TEC):	$33M (EERE minor construction project and CESER IIJA)
Construction Design:	$3M
Project Start	FY 2024
Design Complete	FY 2025
Construction Complete	FY 2027
Project Description:	Consistent with DOE's Financial Management Handbook (Chapter 2.3, *II.D.2)* the ERB is a direct funded Minor Construction Project funded by two DOE Offices. The ERB will be built on the NREL South Table Mountain Campus. The Total Project Cost (TPC) is ~$34M, whereas the Total Estimated Cost (TEC) is $33M. The TEC excludes the $1M for conceptual design, per the DOE Financial Management Handbook. The Office of Cybersecurity, Energy Security, and Emergency Response (CESER) is providing $24M of Infrastructure Investment and Jobs Act (IIJA) funding for classified space that can support the DOE-Industry Energy Threat Analysis Center (ETAC) and the Office of Energy Efficiency and Renewable Energy (EERE) is providing $10M for new capabilities in classified space for the development of new research and analytics supporting the intersection of clean energy technologies and the grid, with a specific focus on cyber security threats and mitigating risk of disruption. The total square footage for this facility is estimated to be 14,000 sq. feet, pending conceptual and final design. The $34M (TPC) of EERE and CESER funds are segregated into Useful Segments identified below: • Conceptual design - $1M, CESER (excluded from TEC) • Project planning and design - $3M, EERE (e.g., Facilities and Infrastructure (F&I) Minor Construction Projects [MCP]) • Construction - $23M, CESER • Equipment - $7M, EERE (e.g., F&I MCP) The CESER investment will support ETAC, which provides a central coordination point for government and industry partners to share information and real-world-based reporting on threats to the energy sector and how to protect against them. The EERE investment will maximize the capabilities of the classified facility to support multiprogram activities involving DOE and other governmental agencies in a secure facility to be able to respond to national security questions. The EERE contribution specifically supports national security, energy security, system resilience, and cybersecurity activities aligned with EERE and NREL's mission space.
Prior Year Accomplishments:	N/A
Planned Activities:	• Classified Space Options Analysis • Planning, Programming and Conceptual design • Issue a Request for Proposal to a Design-Build Contractor • Award of Design-Build contract • Design (Preparing and finalizing drawings, specifications, and other documents describing the work to allow construction of the project) • Project Management, Procure Long Lead and Government Furnished Equipment (Project management; independent testing/inspection, commissioning, and other third-party services; technical oversight during design and construction; IT and other laboratory provided services; procurement and installation of Government Furnished Equipment)
Significant Changes from original plan: N/A	

Minor Construction Projects ($K)

Facilities & Infrastructure Operations & Maintenance	
Project Name:	STM East Campus Infrastructure
Location/Site:	NREL South Table Mountain Campus
Type	Minor Construction Projects (Indirect funded)
Total Estimated Cost	$33,000
Construction Design	$4,000
Project Start	FY 2026
Design Complete	FY 2027
Construction Complete	FY 2028
Project Description:	The STM East Campus Infrastructure project is to design and construct critical infrastructure needed to support electrical capacity expansion on the NREL campus from a current 15MW electrical feed to a new 30MW electrical feed from the Xcel transmission line. This new connection will support the proposed STM Substation and provide capability for possible future upgrades. The infrastructure project will provide a new electrical switchyard and new electrical lines connected from the switchyard to the 115KV transmission lines which will be constructed by Xcel Energy. In addition, this project will design and construct the necessary electrical distribution lines, data/telecom lines, grading, storm drainage, landscaping, roadways, and other associated items needed to allow for connecting the new STM substation to the Xcel transmission line and the STM Campus to provide appropriate electrical and data pathways that will enable the increase of power on NRELs electrical grid. Useful Segments: • FY 2026 - $33M o Negotiate Interconnection Agreement with Utility Provider (Xcel Energy) to determine final siting of substation and design parameters of substation o Issue Design-Build Request for Proposal to Cooperative Construction Contracting Agreement (CCCA) TOA Contractor o Award a Design-Build contract to the Cooperative Construction Contracting Agreement (CCCA) TOA Contractor for design of the East Campus Infrastructure project o Long Lead Procurement of Electrical Equipment for campus connections o Long Lead Procurement of Electrical Equipment for switchyard (by Xcel) o Design of switchyard and transmission line interconnection (by Xcel) o Design of infrastructure o Acquire easements and ROWs needed to support the project (by Xcel) o Construct switchyard and connection to 115KV electrical transmission line (by Xcel) o Construct infrastructure to support campus interconnection o Install long lead equipment for campus interconnection o Test, Commission, Startup of new STM Campus infrastructure interconnection o Install switchyard long lead equipment (by Xcel) o Test, Commission, Startup of new switchyard (by Xcel)
Prior Year Accomplishments:	N/A
Planned Activities:	• Award a Design-Build contract to the Cooperative Construction Contracting Agreement (CCCA) TOA Contractor for design and long lead procurement of the STM East Campus Infrastructure. • Prepare and finalize drawings, specifications, and other documents describing the work to allow construction of the STM Campus interconnection portion of work. • Procure Long Lead Equipment including preparation of plans and specifications to support procurement of the electrical equipment associated with the STM Campus interconnection portion of work.

	• Execute an Interconnect Agreement with Xcel Energy to support the STM electrical switchyard and its connection to the Xcel electrical transmission lines in the vicinity of the substation to be designed and constructed by Xcel. • Prepare and finalize drawings, specifications, and other documents describing the work to allow construction of the Xcel electrical switchyard and connection to transmission power lines. Work completed by Xcel after interconnect agreement in place. • Procure Long Lead Equipment including preparation of plans and specifications to support procurement of electrical equipment including switchgear and switchgear building as designed by Xcel. Work completed by Xcel after interconnect agreement in place. • Construction activities to build new switchyard and overhead transmission lines to existing Xcel 115KV line. Work to be completed by Xcel Energy. • Project Management, independent testing/inspection, commissioning; technical oversight during design and construction; IT support, and other laboratory provided services.
Significant Changes from original plan: N/A	

21-EE-001, Energy Materials and Processing at Scale,
National Renewable Energy Laboratory, Golden, Colorado
TEC Project is for Design and Construction

Summary, Significant Changes, and Schedule and Cost History

Summary: The FY 2026 Budget Request proposes funding $54,000,000 (of the Total Estimated Cost (TEC)) toward the final segment of the final design and construction phase after the Critical Decision 2/3 Project Baseline using a task order acquisition strategy for a firm fixed price Design/Build project approach under a DOE approved Cooperative Construction Contracting Authority pilot contract for the Energy Materials and Processing at Scale project. The FY 2023 funding of $45,000,000 was the first segment to complete preliminary design, long lead procurements (CD-3A), final design, initial sitework, and foundation. The FY 2024 funding of $57,000,000 and the FY 2025 funding of $54,000,000 were needed to fund the building core, shell, and associated infrastructure. The current Total Estimated Cost (TEC) is $218,000,000, with the OPC remaining at $6,000,000. The Total Project Cost (TPC) $225,000,000 (includes Management Reserve and Contingency). The Office of Energy Efficiency and Renewable Energy put forth the $224,000,000 as the final number after confirmation from the Independent Cost Review proceeding after CD-1 with a firm fixed price task order award shortly after CD-1 approval. The TEC and TPC are consistent with the DOE Cost Estimating Guide 413.3-21A. The DOE 413.3B Critical Decision 0 (CD-0) approval was obtained on December 9, 2019. This project was approved for CD-1 on September 20, 2023, and CD-2/3 on August 29. 2024. The FPD for this project is PMCDP certified level 2 working toward level 3. The target Project Completion is 2028 including schedule reserve. Undersecretary of Science and Innovation has delegated the Project Management Executive to the Golden Field Office Executive Director Derek Passarelli effective August 25, 2023. At the External Independent Review/Independent Cost Estimate June 2024, Other Direct Costs funded from Golden Field Office had already spent for $563,000 towards EMAPS AoA support and DOE project reviews was identified. Other Direct Costs are now included in Total Project Costs estimated at $1,000,000 for remaining project reviews and closeout reviews over the life of the project for FY 2020-FY 2028 bringing Total Project Cost to $225,000,000.

Significant Changes: The Cooperative Construction Contracting Approach (CCCA) task order agreement procurement strategy with the EMAPS project has been completed and a conceptual design selected for CD-1. The project went through Project Peer Review and Independent Cost Review in June 2023. With the feedback from the review teams, the IPT sought an increase from the original ROM cost range to the range reflected above ($201M-$246M) with our Budget request point estimate at $224M "design to budget", with the size range narrowed to 123,000 – 127,000 square feet. The range is a class 3 estimate +/- 10% as we have a selected vendor bid in hand for a firm fixed price design/build construction award after CD-1 approval for phase 1 preliminary design. The Independent Cost Review confirmed the IPT point estimate and range in their final report. With escalation due to the inflationary environment taken into account the team adjusted the design phase funding to accommodate the costs expected to reach the CD-2/3 milestone August 29, 2024. Final design and construction phase was awarded upon approval of CD-2/3 on August 30, 2024.

The project's preliminary design phase was completed in March 2024 and culminated in a 100% preliminary design deliverable for a 127,000 gross square foot facility and a firm fixed price proposal for Phase II (final design and construction) from the design-build subcontractor. The project completed an External Independent Review (EIR) and Independent Cost Estimate (ICE) as a part of the CD-2/3 review process in June 2024. Other Direct Costs noted in the Summary above were added for $1M over the life of the project funded separately from EMAPS appropriation by Golden Field Office. As a part of this process, the ICE totaled $231M in TPC, which aligns to within 3.1% of the IPT estimate of $225M. The IPT awarded a contract modification for Phase II after CD-2/3 approval on August 30, 2024.

Critical Milestone History

Fiscal Quarter or Date

Fiscal Year	CD-0	Conceptual Design Complete	CD-1	CD-2	Final Design Complete	CD-3	D&D Complete	CD-4
FY 2021	12/16/2019	2Q FY 2022	3Q FY 2022	3Q FY 2023	4Q FY 2023	3Q FY 2023	N/A	2Q FY 2025
FY 2022	12/16/2019	4Q FY 2022	1Q FY 2023	4Q FY 2023	1Q FY 2024	4Q FY 2023	N/A	3Q FY2025
FY 2023	12/16/2019	2Q FY 2023	3Q FY 2023	3Q FY 2024	4Q FY 2024	3Q FY 2024	N/A	1Q FY 2026
FY 2024	12/16/2019	4/5/2023	4Q FY 2023	3Q FY 2024	1Q FY 2025	3Q FY 2024	N/A	2Q FY 2026
FY 2025	12/16/2019	4/5/2023	9/20/2023	3Q FY2024	Q1 FY2025	3Q FY2024	N/A	Q2 FY 2027
FY 2026	12/16/2019	4/5/2023	9/20/2023	8/29/2024	03/27/2025	8/29/2024	N/A	3Q FY 2028

CD-0 – Approve Mission Need for a construction project with a conceptual scope and cost range
Conceptual Design Complete – Actual date the conceptual design was completed
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
CD-4 – Approve Start of Operations or Project Closeout

Project Cost History

(Dollars in Thousands)

Fiscal Year	TEC, Design	TEC, Construction	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
FY 2021	12,000	148,000	160,000	5,000	0	5,000	165,000
FY 2022	12,000	147,000	159,000	6,000	0	6,000	165,000
FY 2023	12,000	148,000	160,000	5,000	0	5,000	165,000
FY 2024	12,000	148,000	160,000	5,000	0	5,000	165,000
FY 2025	18,000	200,000	218,000	6,000	0	6,000	225,000*
FY 2026	18,000	200,000	218,000	6,000	0	6,000	225,000*

Note: FY 2025 and FY 2026 TPC includes 1,000 in Other Direct Costs (ODCs) funded by GFO Program Direction separate from EMAPS appropriation.

1. Project Scope and Justification

Scope: As advanced energy generation technologies approach terawatt scale, critical materials and supply chain management become increasingly important. The challenge requires much more than critical materials for complex components, devices, and systems deployed at large scales. Design is required for maximum economic useful life, reuse, refurbishment, repair, remanufacturing, and recycling, all of which require multi- disciplinary research and research facilities that can accommodate scaling R&D project from bench scale to pilot scale. These technologies may also utilize new critical materials and recyclable polymers and composites as their scalability and durability are established. To advance this critical need to address supply chain considerations for energy-related technologies, a multi- disciplinary research capability in process integration that draws on bench scale innovations from multiple institutions and transforms them into integrated and scalable "hybrid technology processes" is needed to ready Department of Energy innovations for commercial development. The Financial Schedule reflects a 127,000 gross square foot research facility as presented in design-build subcontractor's firm fixed price proposal.

Justification: 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. The TEC and TPC estimates used in this

document align with the current spend plan. The estimate was based on a new facility which conservatively binds the potential alternatives. An Analysis of Alternatives (AoA) to include a justification of the alternative to be selected was conducted prior to CD-1 approval and endorsed by the Acting Assistant Secretary of Office of Energy Efficiency and Renewable Energy to proceed with conceptual planning.

With domestic critical materials production efforts, as well as many energy technologies, it is becoming clear that the United States needs to increase efficiencies for energy-relevant and energy-intensive critical materials and processes incorporating other more traditional attributes such as high performance, affordability and reliability into advanced energy innovations at the start rather than dealing with future legacies. There are now major opportunities at the interfaces of biology, chemistry and materials science and engineering to develop hybrid processes to couple abiotic (e.g., chemical, catalytic, electrochemical) and biological (e.g., enzymatic or organism-based) processes for chemical synthesis, polymer construction and deconstruction to useful domestic manufactured products and materials.

Addressing the full lifecycle of U.S. critical materials, products, and advanced energy innovation is important for the U.S. to maintain global economic dominance. This project allows DOE to lead advanced energy innovation at the interfaces of biology, physics, chemistry and materials science and engineering to develop hybrid processes to couple abiotic and biological processes for synthesis, polymer construction and deconstruction, to useful domestically manufactured products and materials.

Key Performance Parameters (KPPs)

The Key Performance Parameters (KPPs) were revised following the EIR and ICE in June 2024. The scope KPPs of the project are as follows:

Scope Description	KPP
Total Building Size (gsf)	127,000
High-Bay Laboratory Space (nasf)	16,000
Total Lab Space including high bays, lab storage, and utility corridors (nasf)	59,000

gsf – gross square feet; total enclosed area measured to exterior wall
nasf – net assignable square feet; usable space measure from interior face of drywall

2. Financial Schedule

(Dollars in Thousands)

	Budget Authority (Appropriations)	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2021	0	0	0
FY 2022	8,000	0	0
FY 2023	10,000	18,000	0
FY 2024	0	0	18,000
FY 2025	0	0	0
Total Design	**18,000**	**18,000**	**18,000**
Construction			
FY 2021	0	0	0
	Budget Authority (Appropriations)	**Obligations**	**Costs**
FY 2022	0	0	0

FY 2023	35,000	0	0
FY 2024	57,000	85,000	4,500
FY 2025	54,000	61,000	79,000
FY 2026	54,000	54,000	67,000
FY 2027	0	0	13,000
FY 2028			36,500
Total Construction	200,000	200,000	200,000
Total Estimated Costs (TEC)			
FY 2021	0	0	0
FY 2022	8,000	0	0
FY 2023	45,000	8,000	0
FY 2024	57,000	95,000	22,500
FY 2025	54,000	59,000	79,000
FY 2026	54,000	56,000	67,000
FY 2027	0	0	13,000
FY 2028	0	0	36,500
Total TEC	218,000	218,000	225,000
Other Project Costs (OPC)			
FY 2021	6,000	1,500	300
FY 2022	0	1,500	1,000
FY 2023	0	0	1,700
FY 2024	0	0	0
36,FY 2025	0	0	0
FY 2026	0	0	0
FY 2027	0	3,000	3,000
Total OPC	6,000	6,000	6,000
GFO Funded Other Direct Costs (ODC)			
FY 2021	239	239	239
FY 2022	0	0	0
FY 2023	198	198	198
FY 2024	126	126	126
FY 2025	150	150	150
FY 2026	175	175	175
FY 2027	112	112	112
Total ODC	1,000	1,000	1,000
Total Project Costs (TPC)			
FY 2021	6,239	1,739	539
FY 2022	8,000	1,500	1,000
FY 2023	45,198	18,198	1,898
FY 2024	50,126	92,126	226
FY 2025	61,150	59,150	79,150

FY 2026	54,175	49,175	67,175
FY 2027	112	3,112	16,112
FY 2028	0	0	36,500
Grand Total	225,000	225,000	225,000

3. Details of Project Cost Estimate

(Budget Authority in Thousands of Dollars)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	14,500	14,500	14,500
Contingency	3,500	3,500	3,500
Total, Design	18,000	18,000	18,000
Construction			
Site Work	4,550	4,550	4,550
Equipment	30,000	30,000	30,000
Construction	134,500	134,500	134,500
Other, as needed	9,800	9,800	9,800
Contingency	21,150	21,150	21,150
Total, Construction	200,000	200,000	200,000
Other TEC (if any)			
Cold Startup	0	0	N/A
Contingency	0	0	N/A
Total, Other TEC	0	0	N/A
Total Estimated Cost	**218,000**	**218,000**	**218,000**
Contingency, TEC	*24,650*	*24,650*	24,650
Other Project Cost (OPC)			
OPC except D&D			
R&D	0	0	0
Conceptual Planning	1,000	1,000	1,000
Conceptual Design	2,000	2,000	2,000
Other OPC Costs	3,000	3,000	3,000
Contingency	0	0	0
Total, OPC	**6,000**	**6,000**	**6,000**
Contingency, OPC	*0*	*0*	0
Other Direct Costs (ODC)	**1,000**	**1,000**	**1,000**
Total Project Cost	**225,000**	**225,000**	**225,000**
Total Contingency (TEC+OPC)	**24,650**	**24,650**	**24,650**

4. Schedule of Appropriations Requests

(Dollars in Thousands)

Request Year	Type	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Total

FY 2022	TEC	0	8,000	0	151,000	0	0	0	159,000
	OPC	6,000	0	0	0	0	0	0	6,000
	TPC	6,000	8,000	0	151,000	0	0	0	165,000
FY 2023	TEC	0	8,000	45,000	57,000	54,000	54,000	0	159,000
	OPC	6,000	0	0	0	0	0	0	6,000
	TPC	6,000	8,000	45,000	57,000	54,000	54,000	0	165,000
FY 2024	TEC	0	8,000	45,000	57,000	54,000	54,000	0	159,000
	OPC	6,000	0	0	0	0	0	0	6,000
	TPC	6,000	8,000	45,000	57,000	54,000	54,000	0	165,000
FY 2025	TEC	0	8,000	45,000	57,000	54,000	54,000	0	218,000
	OPC	6,000	0	0	0	0	0	0	6,000
	ODC	239	0	198	126	150	175	112	1,000
	TPC	6,239	8,000	45,198	57,126	54,150	54,175	112	225,000
FY 2026	TEC	0	8,000	45,000	57,000	54,000	54,000	0	218,000
	OPC	6,000	0	0	0	0	0	0	6,000
	ODC	239	0	198	126	150	175	112	1,000
	TPC	6,239	8,000	45,198	57,126	54,150	54,175	112	225,000

5. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	3Q FY2028
Expected Useful Life (number of years)	50
Expected Future Start of D&D of this capital asset (fiscal quarter)	2Q FY 2077

Related Funding Requirements
(Budget Authority in Millions of Dollars)

	Annual Costs		Life Cycle Costs	
	Previous Total Estimate	Current Total Estimate	Previous Total Estimate	Current Total Estimate
Operations and Maintenance	5.4	5.4	270	270

6. D&D Information

The preferred alternative is a new Federal facility. This new facility will not replace existing facilities. NREL is over capacity in all existing laboratories. This new facility will accommodate the expanded R&D mission for clean energy economy and climate resiliency. The applicability of the "one-for-one" offset requirement will be assessed after CD-2/3. The square footage requirement is noted in FIMS AAIM module and the Project Execution Plan.

7. Acquisition Approach

An Acquisition Strategy for a Design Build firm fixed price task order agreement has been developed. The current version was be signed at CD-2/3 approval in accordance with DOE O 413.3B.