

U.S. DEPARTMENT OF
ENERGY

Office of
ENERGY EFFICIENCY &
RENEWABLE ENERGY

Welcome and Announcements

Tracy Niro – FEMP Utility Program Manager



Welcome to FUPWG!

- We have missed you!
- Thank you, CenterPoint Energy
- Registration numbers—welcome first-time attendees!
- Invite your colleagues—registration is still open!
- Thank you, FUPWG Fed Council and others who submitted topic ideas
- Go to [FEMP FUPWG website](#) for slides
- No live Q&A – [FEMP Assistance Portal](#) or contact speaker

Federal Utility Partnership Working Group Seminar

- **FUPWG was initiated by FEMP in 1994, after a provision in the Energy Policy Act of 1992 authorized agencies to participate in incentive programs with their serving utilities.**
- **FUPWG serves as a venue to share information and foster communication among and across federal agencies and their serving utilities to support successful mission execution.**

FUPWG Meeting History

- First meeting in 1994, in Washington, DC: 14 attendees
- 60 in-person meetings to date—most recent was Fall 2019, hosted by EEI in DC: 235 attendees
- Largest meetings: 306 in Fall 2018 (Dominion Energy); 304 in Spring 2018 (Tennessee Valley Authority)
- FUPWG has met in 26 different states and many of the utilities in attendance today have hosted in the past.

Many thanks to our previous hosts!

FEMP Utility Program Updates

- FEMP Utility Program website refresh last summer
- New on demand UESC training series by project phase
- Upcoming UESC live webinars:
 - Post-FUPWG UESC Overview today and tomorrow (Part 1&2)
 - Financing for UESCs: 1.5 hrs, May 18, 2021 (CEUs)
 - Comprehensive UESC Training: 3 hrs/day, June 15-17, 2021 (CEUs)
 - TVA Strategic Partnership Meeting, July 15, 2021
 - Leveraging Utility Partnerships for Fleet Electrification: 1.5 hrs, September 1, 2021
 - Registration - FEMP Training Catalog

Congratulations 2020 Federal Energy & Water Mgmt Awards

Contracting Awards

- **Marine Corps Base Camp Lejeune, NC**

The Marine Corps awarded a UESC to Duke Energy to finance energy measures that support resilience using the savings achieved from implementing energy conservation measures (ECMs) that reduce energy, operations, and maintenance costs.

- **Marine Corps Base Camp Pendleton, CA**

Naval Facilities Engineering Command Southwest awarded a UESC to San Diego Gas and Electric to implement selected ECMs and energy resilience measures.

Congratulations 2020 Federal Energy & Water Mgmt Awards

Program Award

- **Tyndall Air Force Base, FL**

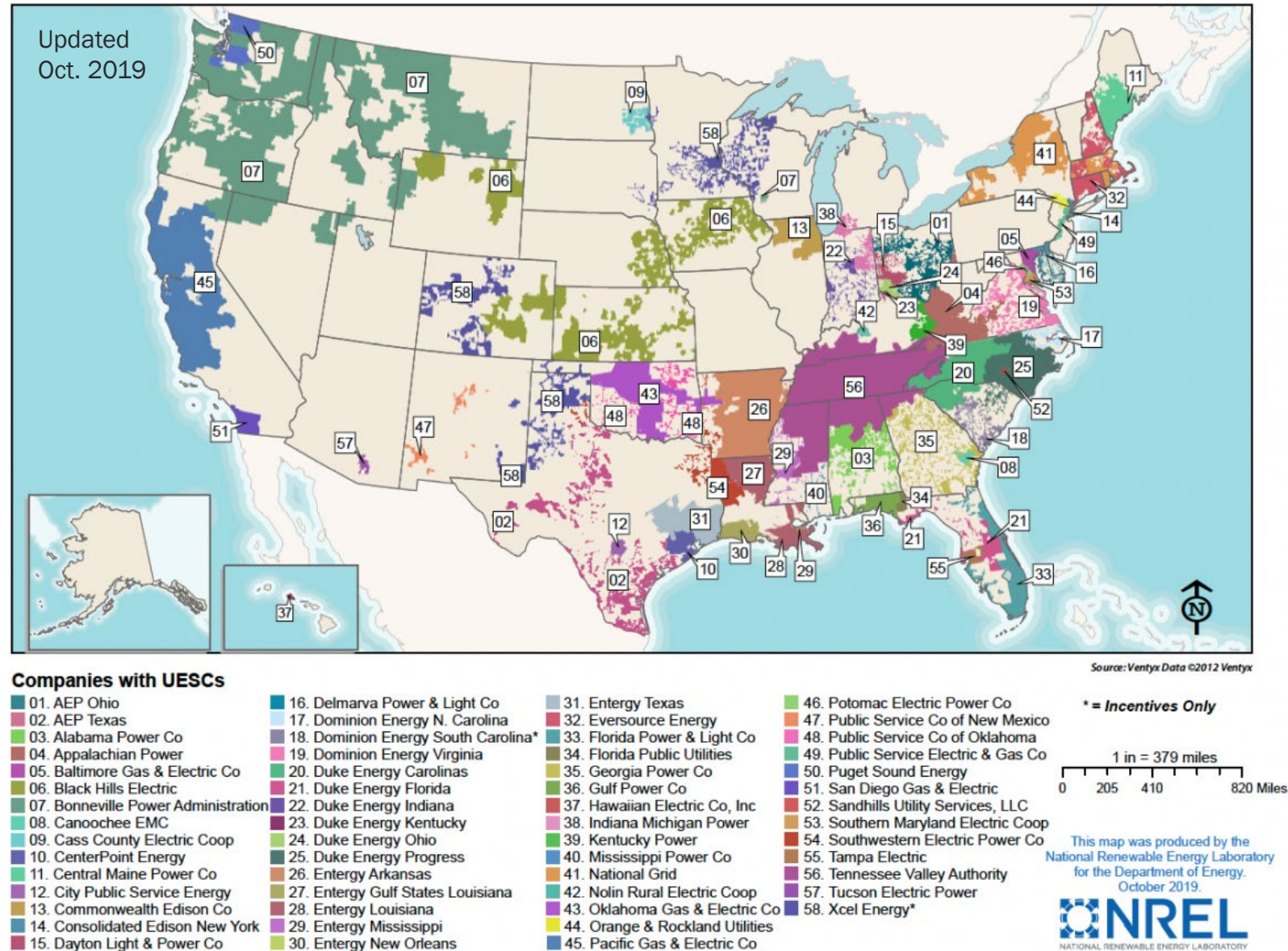
From FY 2016 to FY 2019, the Air Force Civil Engineering Center Energy Directorate for Program Development program team worked to develop and award 25 complex ESPCs and UESCs that together will generate a guaranteed annual savings of \$1.7 billion over the next 22 years.

Project Award

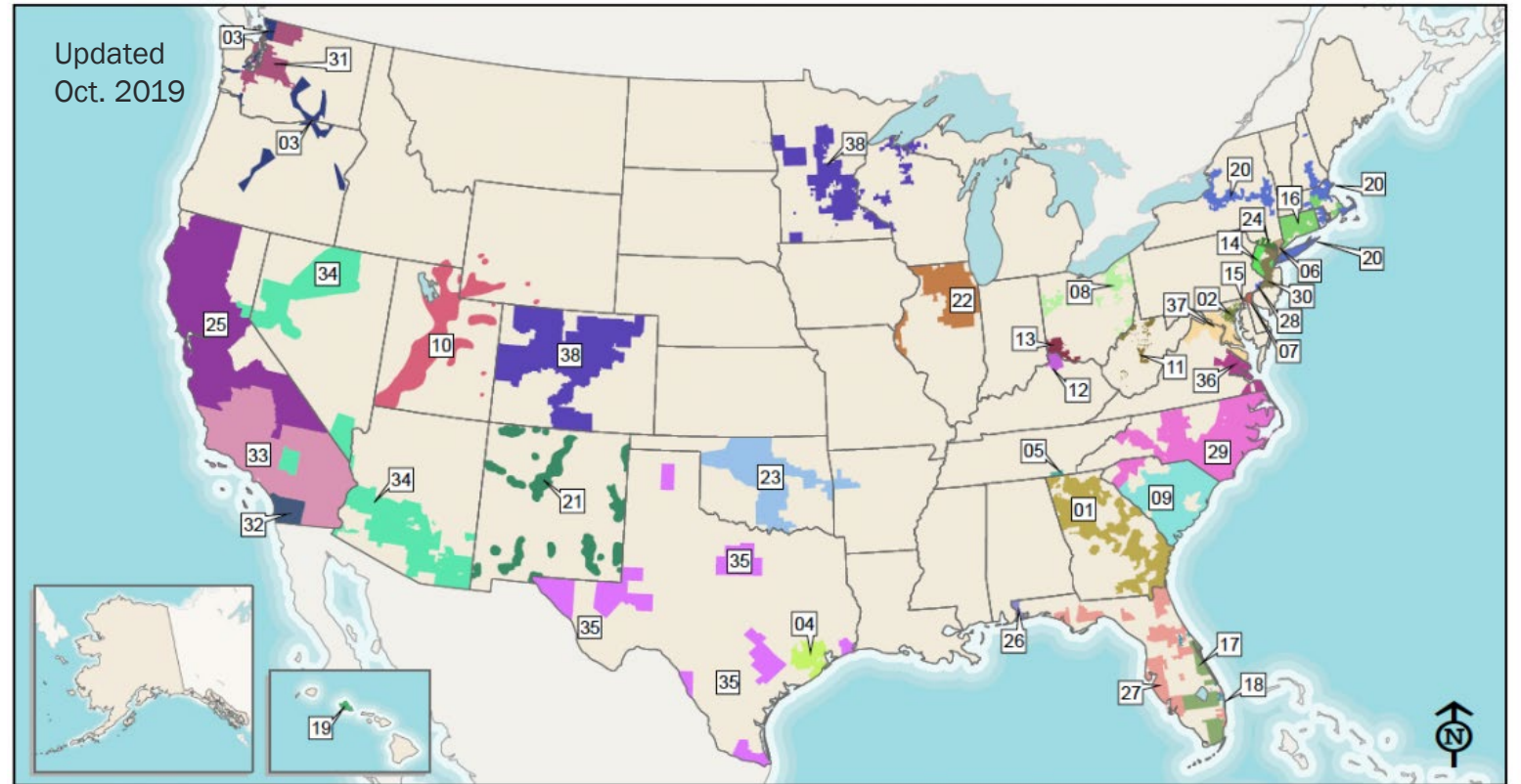
- **U.S. Coast Guard Academy, CT**

The U.S. Coast Guard Academy completed an infrastructure project funded through energy cost savings and the largest UESC ever awarded by the U.S. Coast Guard and the Department of Homeland Security.

Utilities Offering UESCs – Electric



Utilities Offering UESCs – Natural Gas



Companies with UESCs

- | | | | |
|------------------------------------|---------------------------------|--------------------------------------|--------------------------------|
| 01. Atlanta Gas Light | 11. Dominion Energy W. Virginia | 21. New Mexico Gas | 31. Puget Sound Energy |
| 02. Baltimore Gas & Electric Co | 12. Duke Energy Kentucky | 22. Nicor Gas | 32. San Diego Gas & Electric |
| 03. Cascade Natural Gas Corp | 13. Duke Energy Ohio | 23. Oklahoma Gas & Electric Co | 33. Southern California Gas Co |
| 04. CenterPoint Energy | 14. Elizabethtown Gas | 24. Orange & Rockland Utilities | 34. Southwest Gas Corp |
| 05. Chattanooga Gas | 15. Elkton Gas | 25. Pacific Gas & Electric Co | 35. Texas Gas Service |
| 06. Consolidated Edison Inc | 16. Eversource Energy | 26. Pensacola Energy | 36. Virginia Natural Gas |
| 07. Delmarva Power & Light Co | 17. Florida City Gas | 27. Peoples Gas | 37. Washington Gas Light Co |
| 08. Dominion Energy Ohio | 18. Florida Public Utilities | 28. Philadelphia Gas Works | 38. Xcel Energy Inc * |
| 09. Dominion Energy South Carolina | 19. Hawaiian Electric Co | 29. Piedmont Natural Gas Co | |
| 10. Dominion Energy Utah | 20. National Grid | 30. Public Service Electric & Gas Co | |

* = Incentives Only

1 in = 379 miles
0 120 240 480 Miles

This map was produced by the
National Renewable Energy Laboratory
for the Department of Energy.
October, 2019.



Utility Partners Map – Call for Updates!

- Visit the [FEMP website](https://www.eere.energy.gov/femp) for the current list of utilities offering UESCs to their federal customers.
- Contact us via the [FEMP Assistance Request Portal \(www7.eere.energy.gov/femp/assistance\)](https://www7.eere.energy.gov/femp/assistance) to request an update:
 - Add your company to the map and list of utility partners
 - Update your company's name
 - Remove your name from the list if you no longer offer UESCs

Companies with UESCs

01. AEP Ohio	16. Delmarva Power & Light Co	31. Entergy Texas	46. Potomac Electric Power Co
02. AEP Texas	17. Dominion Energy N. Carolina	32. Eversource Energy	47. Public Service Co of New Mexico
03. Alabama Power Co	18. Dominion Energy South Carolina*	33. Florida Power & Light Co	48. Public Service Co of Oklahoma
04. Appalachian Power	19. Dominion Energy Virginia	34. Florida Public Utilities	49. Public Service Electric & Gas Co
05. Baltimore Gas & Electric Co	20. Duke Energy Carolinas	35. Georgia Power Co	50. Puget Sound Energy
06. Black Hills Electric	21. Duke Energy Florida	36. Gulf Power Co	51. San Diego Gas & Electric
07. Bonneville Power Administration	22. Duke Energy Indiana	37. Hawaiian Electric Co, Inc	52. Sandhills Utility Services, LLC
08. Canoochee EMC	23. Duke Energy Kentucky	38. Indiana Michigan Power	53. Southern Maryland Electric Coop
09. Cass County Electric Coop	24. Duke Energy Ohio	39. Kentucky Power	54. Southwestern Electric Power Co
10. CenterPoint Energy	25. Duke Energy Progress	40. Mississippi Power Co	55. Tampa Electric
11. Central Maine Power Co	26. Entergy Arkansas	41. National Grid	56. Tennessee Valley Authority
12. City Public Service Energy	27. Entergy Gulf States Louisiana	42. Nolin Rural Electric Coop	57. Tucson Electric Power
13. Commonwealth Edison Co	28. Entergy Louisiana	43. Oklahoma Gas & Electric Co	58. Xcel Energy*
14. Consolidated Edison New York	29. Entergy Mississippi	44. Orange & Rockland Utilities	
15. Dayton Light & Power Co	30. Entergy New Orleans	45. Pacific Gas & Electric Co	

Companies with UESCs

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05. Chattanooga Gas	15. Elkhon Gas	25. Pacific Gas & Electric Co	35. Texas Gas Service
06. Consolidated Edison Inc	16. Eversource Energy	26. Pensacola Energy	36. Virginia Natural Gas
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Rate Consultations – Available to Federal Agency Sites

FEMP offers utility rate consultations to federal facilities

- **We will:**

- Review your current rate and bills;
- Hold a discussion with the site; and
- Make recommendations about available cost-saving changes.

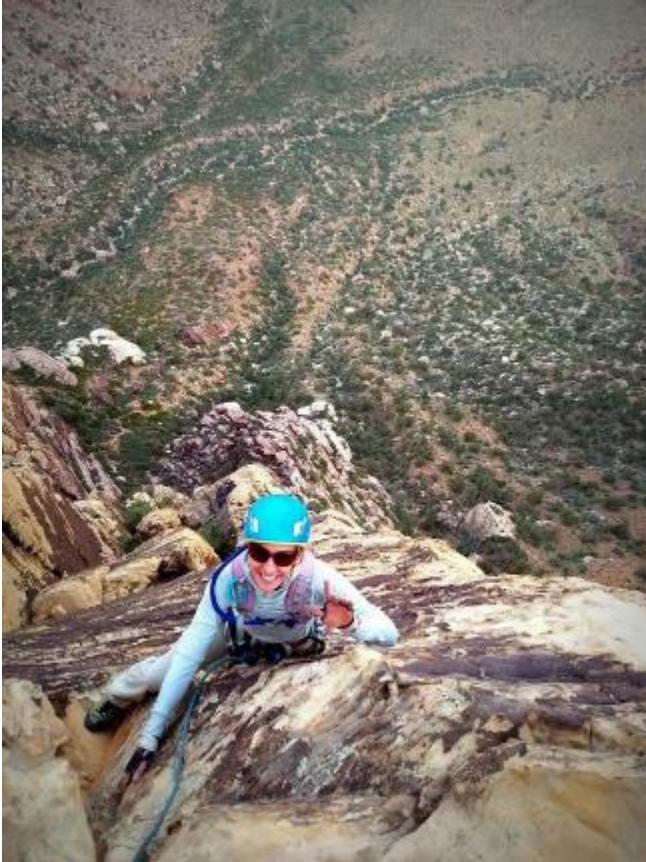
Let us help you optimize your rate to identify cost savings!

Reach out through the FEMP Assistance Portal

<https://www7.eere.energy.gov/femp/assistance/>

Select Utility Program and include “Rate Consult” in message.

Thank You



Red Rock Canyon National Conservation Area

Questions?

Please visit the FEMP Assistance Request Portal:

www7.eere.energy.gov/femp/assistance

In the “Service Area” scroll down to “Utility Program and UESCs.” Type your question in the message box. We will respond as soon as possible

VIRTUAL FEDERAL UTILITY PARTNERSHIP WORKING GROUP SEMINAR

May 5-6, 2021

Welcome and Update
Leslie Nicholls
FEMP Director

Hosted by:



FEMP Tracks and Facilitates Federal Agency Progress

Federal investment drives energy use reduction

\$25.8 billion in efficiency investments from 2007-2019 avoided use of 28% more energy in 2019, and will yield an estimated \$55 billion return by 2030

210k

Jobs supported through federal investment over 12 years

\$1.2 Billion Investment in FY 2019, results in:

2.4 trillion Btu/yr
Annual Energy Savings

\$65 million/yr
Annual Energy Cost Savings

\$224 million
Direct funding investment

\$901 million
Energy Savings Performance Contract (ESPC)

\$83 million
Utility Energy Service Contract (UESC)

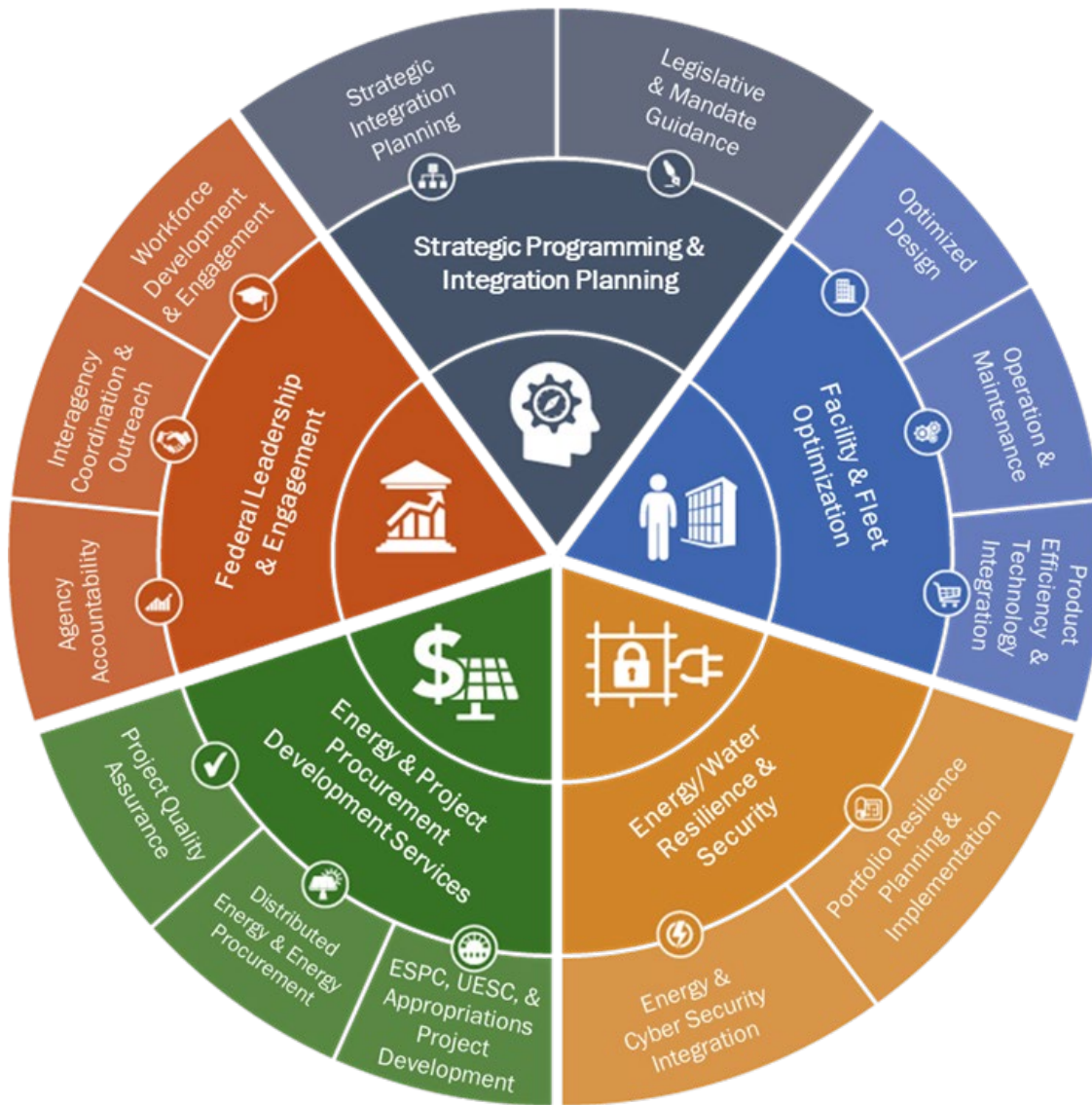
25.6% Facility energy intensity
reduction vs 2003 (Goal: 30%)

27.5% Potable water intensity
reduction vs 2007 (Goal: 20%)

8.6% Renewable electricity
use (Goal: 7.5%)

27.9% Scope 1&2 greenhouse
gas emissions reduction from
standard operations vs 2008

Federal Energy Management Program



The Federal Energy Management Program was codified by the Energy Act 2020 ***to facilitate the implementation by the Federal Government of cost-effective energy and water management and energy-related investment practices to:***

(A) coordinate and strengthen Federal energy and water resilience; and

(B) promote environmental stewardship.

Energy Act of 2020 Sec. 543(i)(1) (42 U.S.C § 8253(i))

Federal Energy Management Program Priorities

*Priorities & Objectives *Living Document**

FEMP facilitates Federal cost-effective energy and water management and investment

Top Priorities



Meet Administration Goals and Objectives



Workforce Development and Technology Adoption for Energy Sector



Leverage Performance Contracting for Energy and Water Infrastructure Improvements



Climate Change: Adaptation Planning, Actions, and Resources

KEY OBJECTIVES

- Contribute to **Federal Agency Performance** goal development, implementation guidance, tracking, and reporting of Executive Orders and actions
- Support **large-scale electrification** of the Federal Fleet
- Leverage FEMP tools and resources to showcase the opportunity for electrification and decarbonization in support of climate adaptation, resilience planning and cybersecurity
- Support development of a federal future-focused facilities workforce (F³W)
- Utilize the federal building stock as a platform for adoption and use of smart building technologies and practices
- Utilize **AFFECT** to enable new technology implementation or comprehensive projects relating to climate adaptation and mitigation, resilience, active energy, and cybersecurity
- Accelerate the deployment of energy storage to optimize agency renewable energy technology performance in support of **efficient, resilient and secure infrastructure**

Success of UESC Program—And Its Impact

- **FY20 was a record year in UESC investment!**
- **Agencies reported approx. \$280M in project awards that should result in:**
 - Energy savings of ~636,500 MMBtu annually
 - \$575M in total energy-related cost savings over the contract term
 - Reduced annual emissions by ~54,000 metric tons of CO₂ equivalent
 - 2,234 job-years for project implementation

UESCs and AFFECT

On April 27th, DOE announced a \$13M Federal Agency Call to support federal projects that:

- Leverage UESCs and ESPCs for decarbonization, electrification, and climate resilience;
 - Include a diverse workforce in their implementation; and
 - Support American manufacturing, clean energy jobs, and economic stimulus
-
- Agencies have successfully used UESCs to leverage past AFFECT grants
 - 6 of 16 grants awarded in FY 2020 were made to UESC-related projects

AFFECT, UESCs and New Technology

- AFFECT supported several UESC projects in 2020 and 2019 for relatively new technology applications:
 - High Efficiency Dehumidification Systems (HEDs), which was a focus of DoD's ESTCP program
 - A WindWall application, for renewable energy generation
- **We hope to see more innovation** from federal and utility partners using UESCs—and perhaps a competitive AFFECT grant—in future.
 - We understand these projects can be challenging to put together (let us know if FEMP can help with TA!)
 - The experience gained and the performance data generated could have a major impact on enabling further adoption of these technologies
 - So, thanks for your hard work and creativity in making these projects work!

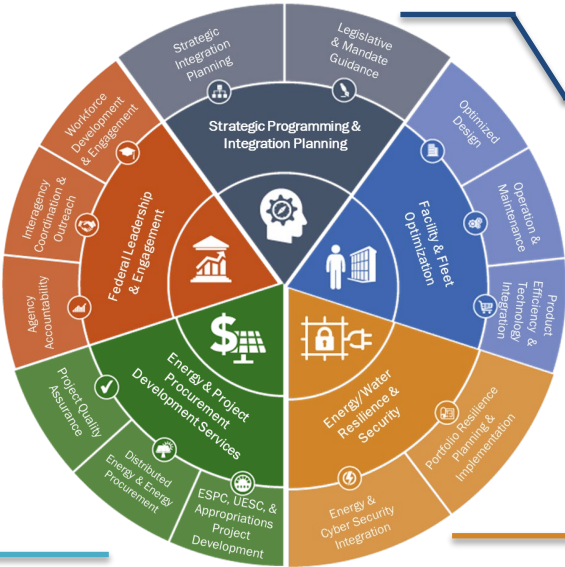
Federal Energy Management Program

Addressing Government Needs & Priorities

- ❑ Government Accountability
- ❑ Workforce development
- ✓ *Deliver training and dissemination of best practices and resources*

- ❑ Infrastructure Improvements
- ❑ Leveraging Private/Public Partnerships
- ❑ Technology Integration

✓ *Provide technical assistance*



- ❑ Interagency Coordination
- ❑ Executive Order Implementation

✓ *Support CEQ & OMB through technical resources & guidance*

- ❑ Waste Reduction & Cost Savings
- ❑ Sustainable Healthy Buildings
- ✓ *Disseminate tools, resources, & solution sets for efficient facilities & operations*

- ❑ Physical & Cyber Resilience + Security
- ✓ *Develop a Comprehensive Approach to Resilience & Security Planning including baselining and assessment tools*



69

Case Studies



100

Tools



126

Online Trainings



290

Guidance Resources

Procurement Solutions

- Fleet electrification
 - Recognize need for support for procurement solutions
 - FEMP is developing information and resources to help agencies make decisions about investing in fleet electrification
- FEMP's New Utility Toolkit
 - Developed to help new utilities set up UESC programs
 - Will be published in FY21



U.S. DEPARTMENT OF ENERGY **ENERGY EXCHANGE 2021**



Registration is open! Early bird registration ends June 11.



- LEADERSHIP PANEL SESSIONS AND TECHNICAL TRAININGS (EARN CEUS)
- ASK-AN-EXPERT/FEMP HUB
- NETWORKING OPPORTUNITIES
- TECHNOLOGY PAVILION

For more information and to register:

[Energy-Exchange.com](https://www.energy-exchange.com)



CONNECTING THE FUTURE

August 2-6

FEDERAL UTILITY PARTNERSHIP WORKING GROUP VIRTUAL SEMINAR

May 5-6, 2021

Washington Update

Andrew Mayock

Federal Chief Sustainability Officer

White House Council on Environmental Quality



Overview of Statutory Requirements/ Reporting Changes

Chris Tremper | Program Analyst, Federal Energy Management Program



Energy Act of 2020: Summary

- Energy Performance Requirement (Btu/Gross Square Foot reduction goal) unchanged; 30% reduction vs. 2003 in 2015
- Updated Energy and Water Management Requirement: Install all life cycle cost-effective energy and water conservation measures in owned buildings
 - to the maximum extent practicable, as soon as practicable after October 1, 2022
 - Report non-compliance to Congress every two years, beginning January 1, 2022

(1) IN GENERAL.—Each agency shall—

(A) not later than October 1, 2022, to the maximum extent practicable, **begin installing in Federal buildings owned by the United States all energy and water conservation measures** determined by the Secretary to be life cycle cost-effective (as defined in subsection (f)(1)); and

(B) complete the installation described in subparagraph (A) as soon as practicable after the date referred to in that subparagraph.

(2) EXPLANATION OF NONCOMPLIANCE.—

(A) IN GENERAL.—If an agency fails to comply with paragraph (1), the agency shall submit to the Secretary, using guidelines developed by the Secretary, an explanation of the reasons for the failure.

(B) REPORT TO CONGRESS.—Not later than January 1, 2022, and every 2 years thereafter, the Secretary shall submit to Congress a report that describes any noncompliance by an agency with the requirements of paragraph (1).

Energy Act of 2020: Summary (cont'd)

- Insertion of “and water” or “or water” after “energy” throughout existing code:
 - Metering requirements and covered facility requirements
 - Exclusion criteria for Energy Performance Requirement (Btu/GSF reduction goal); this is peculiar since there is no water performance requirement. 180 days to update guidance:

(A) ~~An agency~~ The head of each agency may exclude, from the energy or water performance requirement for a fiscal year established under subsection (a) and the energy or water management requirement established under subsection (b), any Federal building or collection of Federal buildings, if the head of the agency finds that—

- (i) compliance with those requirements would be impracticable;
- (ii) the agency has completed and submitted all federally required energy and water management reports,
- (iii) the agency has achieved compliance with the energy and water efficiency requirements of this chapter, the Energy Policy Act of 1992, Executive orders, and other Federal law; and
- (iv) the agency has implemented all practicable, life cycle cost-effective projects with respect to the Federal building or collection of Federal buildings to be excluded.

(B) A finding of impracticability under subparagraph (A)(i) shall be based on—

- (i) the energy or water intensiveness of activities carried out in the Federal building or collection of Federal buildings; or
- (ii) the fact that the Federal building or collection of Federal buildings is used in the performance of a national security function.

EA 2020 language:

(3) in subsection (c)(1)—

(A) in subparagraph (A)—

(i) in the matter preceding clause (i),

by striking “An agency” and inserting

“The head of each agency”;

and

(ii) by inserting “or water” after “energy” each place it appears; and

(B) in subparagraph (B)(i), by inserting “or water” after “energy”;

- Benchmarking language is unchanged (“and/or water” not inserted)

Energy Act of 2020: Summary (cont'd)

- OMB-Developed Strategy/Goals for Energy-Saving Information Technology
- Codifies the Federal Energy Management Program in statute
 - Submit to each agency a report that will facilitate the energy and water management, energy-related investment practices, and environmental stewardship (PRT, Scorecard, agency performance graphics)
- **Requires annual reporting on the status of ESPCs and UESCs including investment values, energy quantity, forecast and comparison to previous forecasts, divergence**
 - Potential roles for both eProject Builder and EISA Compliance Tracking System as tools to comply with detailed reporting requirements
- Recognition of O&M savings and allowance of sale of rebates and RECs in ESPCs
- Data Center Energy Efficiency including evaluations every 4 years
- Establishes Federal Smart Building Program
- Accounting changes to Federal Renewable Electricity Goal pertaining to geothermal use
 - Allows avoided energy consumption from geothermal energy to count (marginal efficiency of geothermal heat pump vs. air-to-air)
 - Although on-site, does not account for a Btu reduction for energy performance requirement (Btu/GSF) while other on-site renewable sources continue to count as energy conservation

Energy Act of 2020: Annual Reporting

§8258. Reports

(b) Reports to the President and Congress

The [Secretary](#) shall report, not later than April 2 of each year, with respect to each fiscal year beginning after November 5, 1988, to the President and Congress—

- (1) on all activities carried out under this part and on the progress made toward achievement of the objectives of this part, including—
 - (A) a copy of the list of the exclusions made under sections [8253\(a\)\(2\)](#) and [8253\(c\)\(3\)](#) of this title;
 - (B) the information required under [section 8253\(b\)\(2\) of this title](#); and
 - (C) a statement detailing the amount of funds awarded to each [agency](#) under [section 8256\(b\) of this title](#), the energy and water conservation measures installed with such funds, the projected energy and water savings to be realized from installed measures, and, for each installed measure for which the projected energy and water savings reported in the previous year were not realized, the percentage of such projected savings that was not realized, the reasons such savings were not realized, and proposals for, and projected costs of, achieving such projected savings in the future;
- (2) the number of contracts entered into by all agencies under subchapter VII of this chapter, the difficulties (if any) encountered in attempting to enter into such contracts, and proposed solutions to those difficulties;
- (3) the extent and nature of interagency exchange of information concerning the conservation and efficient utilization of energy; and
- (4) the information required under [section 8262g\(d\) of this title](#), and
- (5)
 - (A) the status of the energy savings performance contracts and utility energy service contracts of each agency, to the extent that the information is not duplicative of information provided to the Secretary under a separate authority;
 - (B) the quantity and investment value of the contracts for the previous year;
 - (C) the guaranteed energy savings, or for contracts without a guarantee, the estimated energy savings, for the previous year, as compared to the measured energy savings for the previous year;
 - (D) a forecast of the estimated quantity and investment value of contracts anticipated in the following year for each agency; and
 - (E)
 - (i) a comparison of the information described in subparagraph (B) and the forecast described in subparagraph (D) in the report of the previous year; and
 - (ii) if applicable, the reasons for any differences in the data compared under clause (i).

Energy Act of 2020: Summary (cont'd); Covered Facilities

- Adds definition of the term ‘ongoing commissioning’ meaning “an ongoing process of commissioning using monitored data, the primary goal of which is to ensure continuous optimum performance of a facility”
- Covered facility designations must constitute at least 75 percent of facility energy or water use at each agency and responsibilities of covered facility energy managers
 - Agencies already report annual water consumption for their covered facilities, see prototype CTS report (next slide) to show covered facilities percentage of total water consumption
 - Agencies can meet covered facility requirement threshold with 75% of either energy or water use
- Adds responsibility for Facility Energy Managers to consider use of “Energy Management System” and ISO Standard 50001 certification
- Revised requirements for Energy and Water Evaluations of Covered Facilities
 - Resets timeframe for completing evaluations with problematic language (180 days after enactment for previous calendar year); not less frequently than once every 4 years
 - Provides exceptions for completing evaluations if complicated criteria are met
- **Implementation of Identified ECMs in Covered Facilities**
 - Two years after the date of completion of each evaluation, each energy manager shall implement all life-cycle cost effective ECMs (individually or bundled)
 - Each Federal agency shall use performance contracting to address at least 50 percent of the measures identified (Guidance to determine criteria)

Tracking Compliance of 2-Year Project Implementation Requirements in CTS: Considerations for discussion

§8253(f)(4) IMPLEMENTATION OF IDENTIFIED ENERGY AND WATER EFFICIENCY MEASURES.—

(A) IN GENERAL.—Not later than 2 years after the date of completion of each evaluation under paragraph (3), each energy manager shall implement any energy or water-saving measure that—

(i) the Federal agency identified in the evaluation; and

(ii) is life cycle cost-effective, as determined by evaluating an individual measure or a bundle of measures with varying paybacks.

(B) PERFORMANCE CONTRACTING.—Each Federal agency shall use performance contracting to address at least 50 percent of the measures identified under subparagraph (A)(i).

Issues for clarification in update to EISA *Consolidated Guidance for Management of Energy and Water Efficiency in Federal Covered Facilities* (per 42 U.S.C. 8253(f)):

- Define project implementation date (proposing contract award date or Project Initiation as defined in CTS)
- How to measure compliance? —in terms of implementation cost and number of measures? (if by measure, stricter criteria for counting potential and implemented ECMs will need to be promulgated)
- Agency-wide performance metric: Number of covered facilities (percentage of total) in compliance with 2-Year Project Implementation requirement
- Compliance report data table will also include all projects implemented after last evaluation completed
- How to deal with performance contracts with direct funding contributions
- Resetting the 2-year implementation deadline: When the next evaluation is completed and reported in CTS the facility is reset as “in compliance” (for two years) from the evaluation completion date

THANK YOU!

FEDERAL UTILITY PARTNERSHIP WORKING GROUP VIRTUAL SEMINAR

May 5-6, 2021

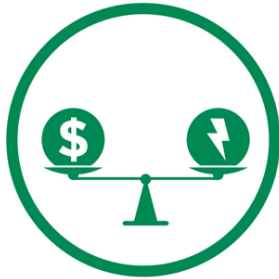
Utility Industry Perspectives, Priorities, and Other Updates

- Lauren Khair, National Rural Electric Cooperative Association
- Steve Kiesner, Edison Electric Institute
- Rick Murphy, American Gas Association



Cooperatives Engagement with Federal Agencies

Electric Cooperatives: Who We Are



**At-cost
electric service**



**Locally
governed**



**Return excess
revenue**



**Community
builders**

Electric cooperatives are community-focused organizations that work to efficiently deliver affordable and reliable electricity to consumer-members of the co-op. They operate for the benefit of people, not investors.

@NRECAnews

Electric Cooperatives: Who We Are



Nearly
900 electric co-ops
serve 1 in 8 U.S. residents
in rural and exurban communities alike

@NRECAnews

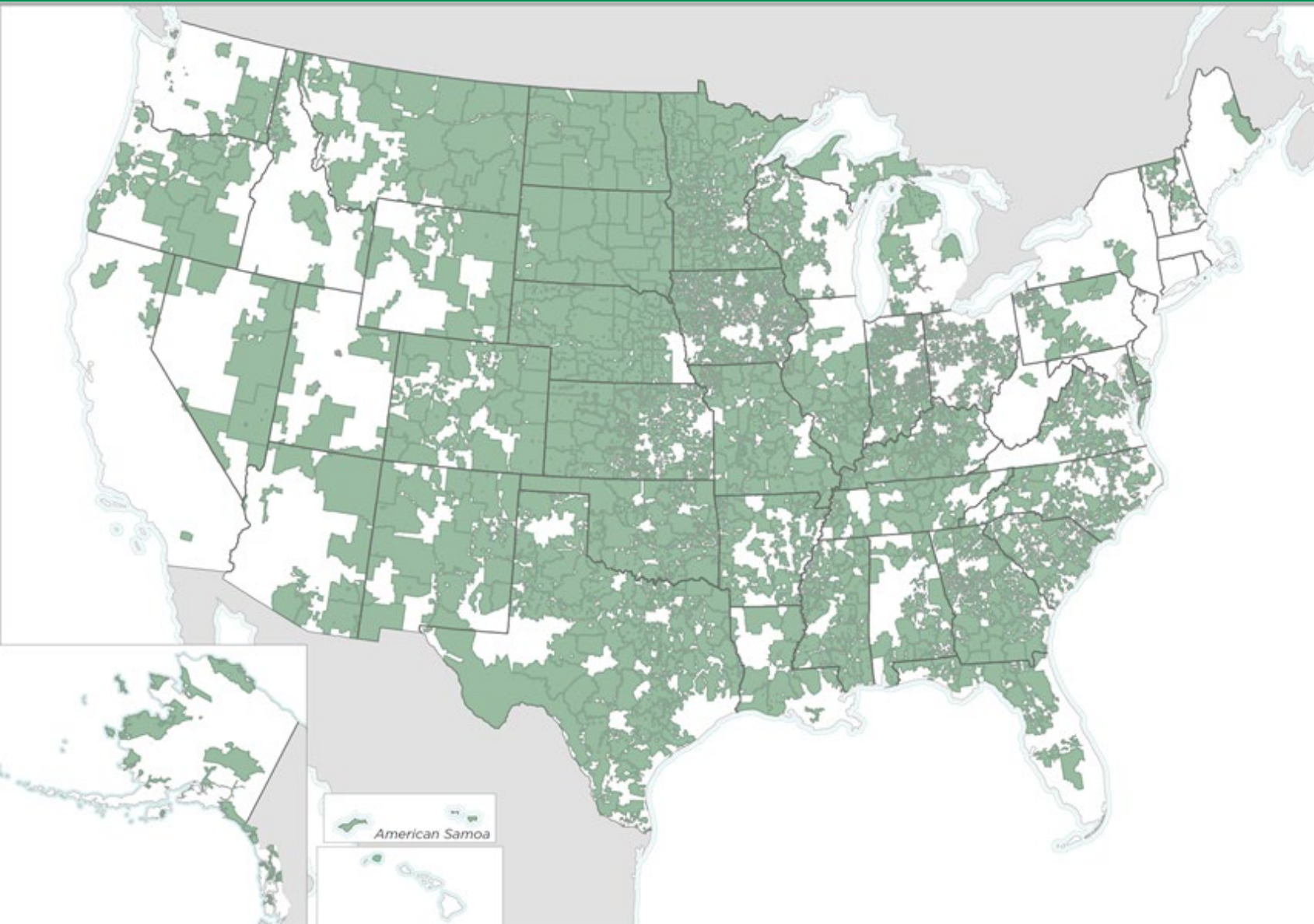
Electric Cooperatives: Who We Are



Electric cooperatives serve
**92% of America's
persistent poverty counties**

@NRECANews

Cooperative Service Territory



- There are 63 Generation & Transmission (G&T) co-ops and 834 distribution co-ops
- Co-ops generate nearly 5 percent of the total electricity produced in the U.S. each year and deliver 12% of electricity consumed
- Co-ops serve 20 million businesses, homes, schools, and more, in 2,500 of 3,141 counties in the U.S.
- Co-ops own assets worth \$192 billion (distribution and G&T co-ops combined) and employ 71,000 people in the U.S.

Cooperative Difference: Capital Credits

- Capital credits (sometimes referred to as patronage capital) refers to each co-op member's allocated share of income remaining after the co-op pays its expenses.
- Paying or 'retiring' capital credits in cash or bill credit is a practice unique to cooperatives whereby that allocation is gradually paid back to each member over time.
- In 2019, electric distribution co-ops retired over **\$1.3 billion** in capital credits to their consumer-members.
- These retired credits **could be** used on military installations for resiliency projects.

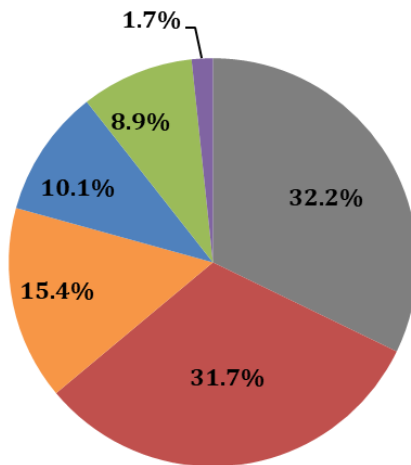


Photo Credit Chockawhatchee Electric Cooperative

2019 Cooperative Retail Fuel Mix & Emissions

2019 National Cooperative Retail Electric Fuel Mix (MWh)

468 million MWh



Renewable numbers include owned and directly purchased generation, plus generation in the mix from wholesale purchases and do not reflect renewable credits.

Source: NRECA Research

■ Coal ■ Natural Gas ■ Nuclear ■ Hydro ■ Non-Hydro Renewables ■ Oil, Other, or Unknown

Cleaner air

Cooperatives are meeting member expectations by reducing emissions through a combination of emission-reduction measures at power plants and fuel switching to natural gas and renewables.

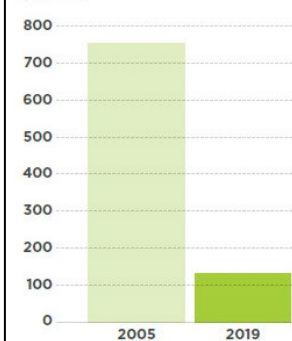
Co-ops have:

Source: EPA and EIA

Reduced **sulphur dioxide** emissions 83% from 2005-2019.

TOTAL SO₂ EMISSIONS

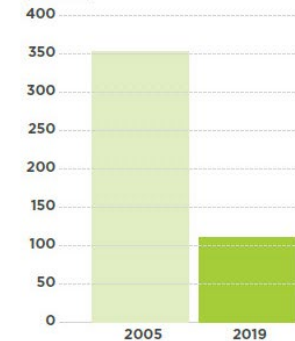
Thousands (short tons)



Reduced **nitrogen oxide** emissions 69% from 2005-2019.

TOTAL NO_x EMISSIONS

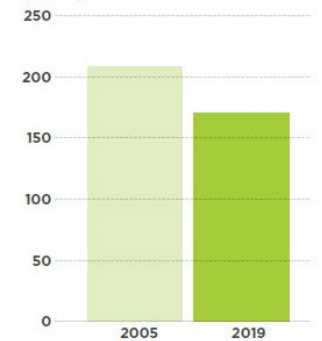
Thousands (short tons)



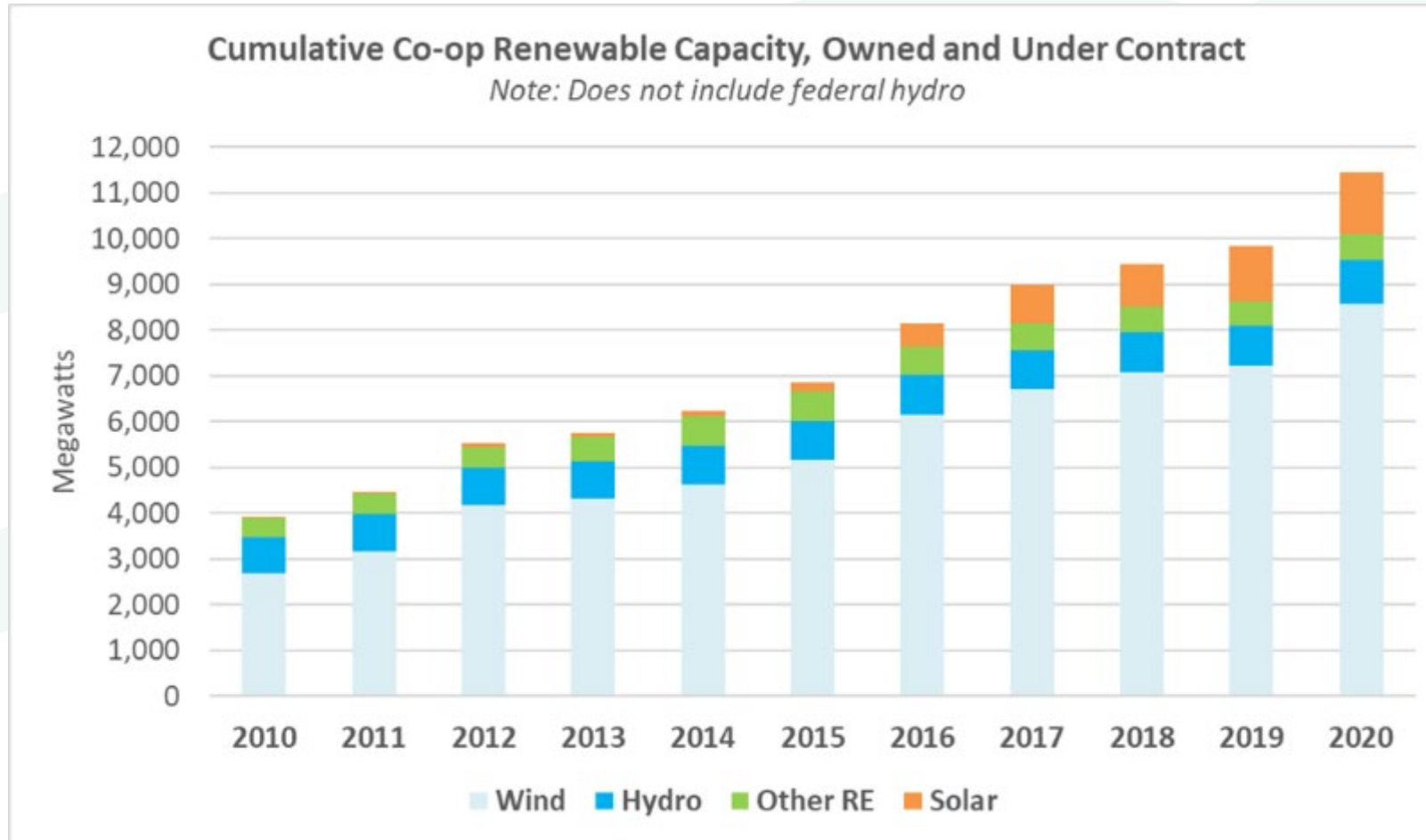
Reduced **carbon dioxide** emissions 18% from 2005-2019.

TOTAL CO₂ EMISSIONS

Millions (short tons)



Cooperative Renewables



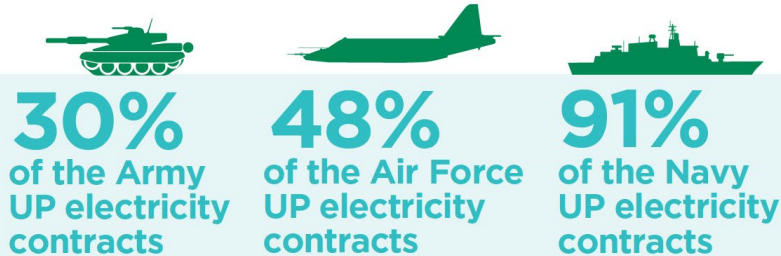
Cooperative Engagement with the Military

COOPERATIVE ENGAGEMENT WITH THE MILITARY

America's electric cooperatives serve their military members
and promote national security interests.



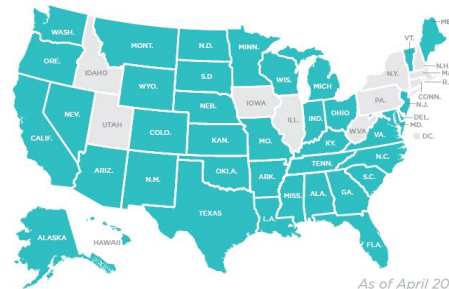
Electric cooperatives own, operate, and maintain the electric distribution grid at 33 military installations through utility privatization (UP) contracts under the 10 U.S. Code § 2688.



Electric cooperatives
serve military facilities in
39 states.

For more information contact:

Lauren Khair - Director, Business
Transformation NRECA
Lauren.Khair@nreca.coop



NRECA's Military Energy Research Projects

- Microgrid Planning Utilizing an Open Modeling Framework for Resilient Installations Leveraging Their Utility Privatization (MICROGRID UP)
 - This project will create a scalable microgrid planning framework to address known software and planning problems that limit the widespread, cost-effective utilization of microgrids on military bases.
- Energy Resilience for Mission Assurance (ERMA)
 - This project seeks to answer the question: what is the degree to which resilience of the power grid impacts national security, and what are realistic opportunities to improve that resilience both inside and outside of Department of Defense owned facilities?
- Rural Energy Storage Deployment Program (RESDP)
 - The goal is to successfully deploy battery energy storage systems at rural critical infrastructure served by rural electric cooperatives for resiliency and to collect best practices and lessons learned from these deployments with electric cooperatives across the country. This is a DOE-funded project.

Contact for Questions

Lauren Khair
Director, Business Transformation
Lauren.Khair@nreca.coop



EEI Member Company Priorities

FUPWG Spring 2021

Steve Kiesner
Sr. Director, National Customer Solutions





2021 Industry Priorities



COVID-19 Response
& Recovery



Clean
Energy



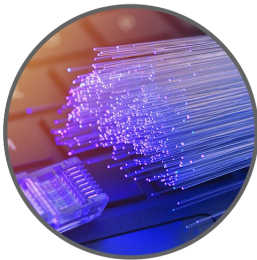
Smarter Energy
Infrastructure



Grid Security
& Resilience



Storm Response
& Wildfire Mitigation



Middle-Mile
Broadband



ESG & Natural Gas
Sustainability



Electric
Transportation



Innovative
Customer Solutions



Diversity, Equity,
& Inclusion

Leading on Clean Energy



Leading on Clean Energy



Changing U.S. Energy Mix

40%
CARBON-FREE



>1/2

Over the Past 10 Years,
More Than Half of New Electricity
Generation Capacity Was
WIND AND SOLAR



Providing
67%
of the
SOLAR ENERGY
in the Country

↓ CO₂

Carbon Emissions from
Power Sector at
**LOWEST LEVEL IN 40+ YEARS
AND CONTINUE TO FALL**



Investing Nearly
\$3 Billion
to Deploy
**EV CHARGING
INFRASTRUCTURE**



Increasing Investments
\$120 Billion+
Per Year on Average
**TO MAKE THE ENERGY GRID
SMARTER, CLEANER, STRONGER**

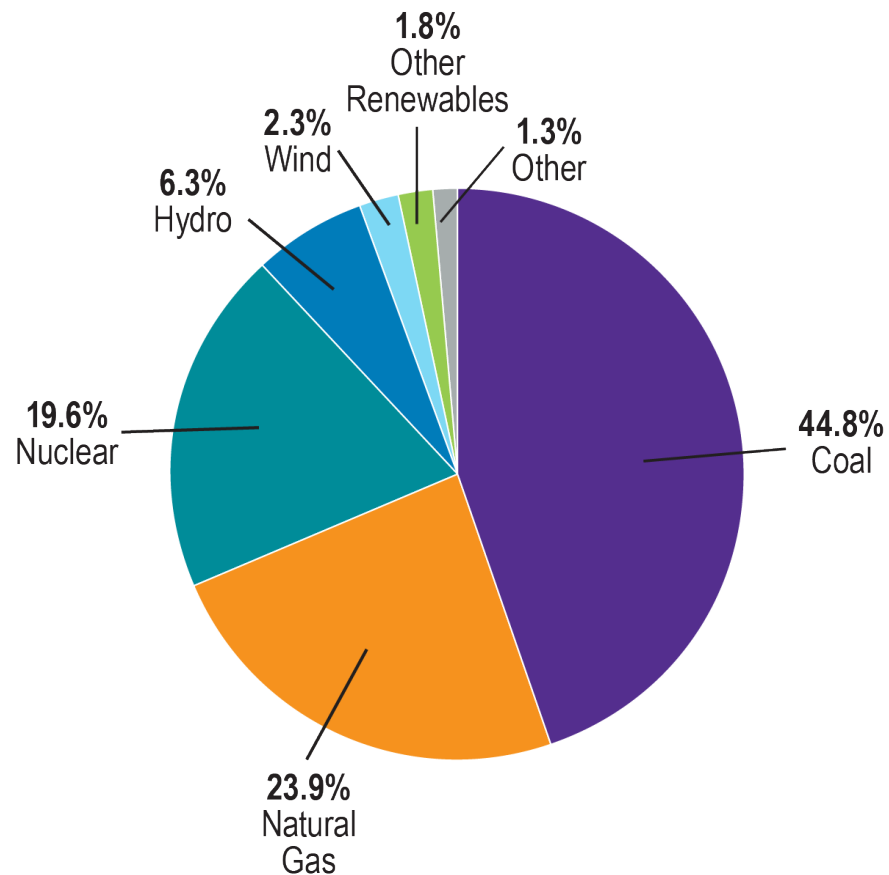


Using
90%+
of all
U.S. ENERGY STORAGE

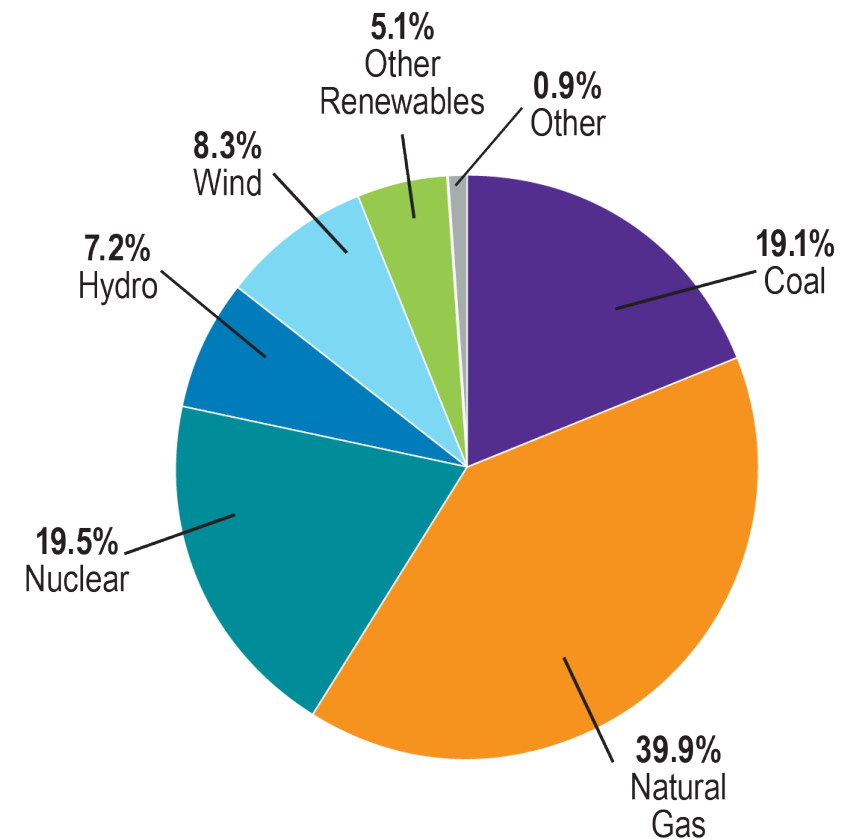


Transforming the Energy Mix

2010 National Energy Resource Mix



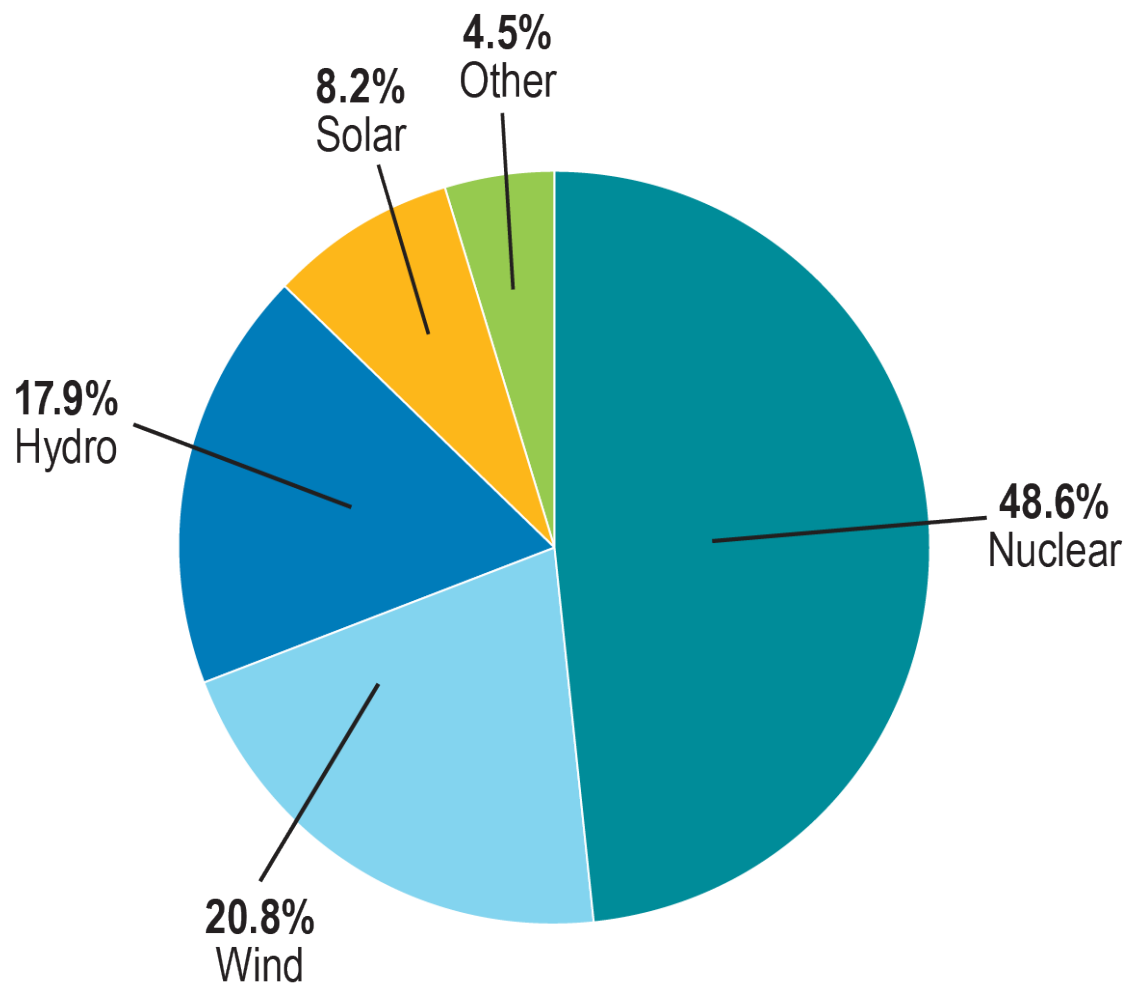
2020 National Energy Resource Mix



Source: U.S. Department of Energy, Energy Information Administration.



Carbon-Free Electricity Generated 2020



Nuclear energy remains the largest source of carbon-free electricity.

Currently, 94 reactors in 28 states produce nearly 20 percent of our nation's electricity and nearly 50 percent of our carbon-free electricity.

"Other" includes biomass, geothermal, and landfill gas.

Source: U.S. Department of Energy, Energy Information Administration.



Clean Energy Priorities: Work with Customers on 100% Clean Energy Solutions

- The movement by many corporations to set 100% renewable energy (RE) goals has dramatically accelerated investments in renewable generation.
- Now, corporations *and federal government customers* have an opportunity to go even further by seeking to use 100% carbon-free energy across their operations while electrifying a greater portion of their total energy use.
- **100% carbon-free energy goals build-on and complement 100% RE procurement.**
 - Achieving these goals will require continued investments in RE as we develop and use a broader portfolio of other zero-carbon resources and flexible supply technologies such as energy storage.
- **100% carbon-free energy is the next step.** To successfully address the challenge of climate change, we need to reduce carbon emissions as much as we can as fast as we can.
 - By using a zero-carbon free energy mix, we can meet customer demand for carbon free energy 24/7 and reliably manage the energy grid 24/7/365
 - Corporate customers like Google, Microsoft and others developing 24/7 clean energy strategies



How do we reach a 100% Carbon-Free Energy Goal?

Energy Procurement

- **A renewable energy PLUS strategy:** Increased RE generation and advances in storage.
- **Complements RE and energy storage with clean capacity from zero-carbon resources** – such as hydro, nuclear, natural gas with CCS, and hydrogen – to eliminate emissions while ensuring reliability and affordability.
- **Matches emissions-free generation to the time and location** of a customer's energy use matters.



How do we reach a 100% Carbon-Free Energy Goal? Policies

To meet long-term clean energy and climate goals, we need policies that:

- **Promote** carbon-free technologies through appropriations, authorizations, and tax policy.
- **Recognize** industry's clean energy leadership in reducing carbon emissions and support rapid investment in clean energy resources and the infrastructure needed to integrate it.
- **Support** investments in the electric transmission system to integrate more renewables, more clean energy, and new technologies into the energy grid affordably and reliably.
- **Promote** electric transportation and facilitate build-out of EV infrastructure.

Accelerating the Transition to a Cleaner Economy

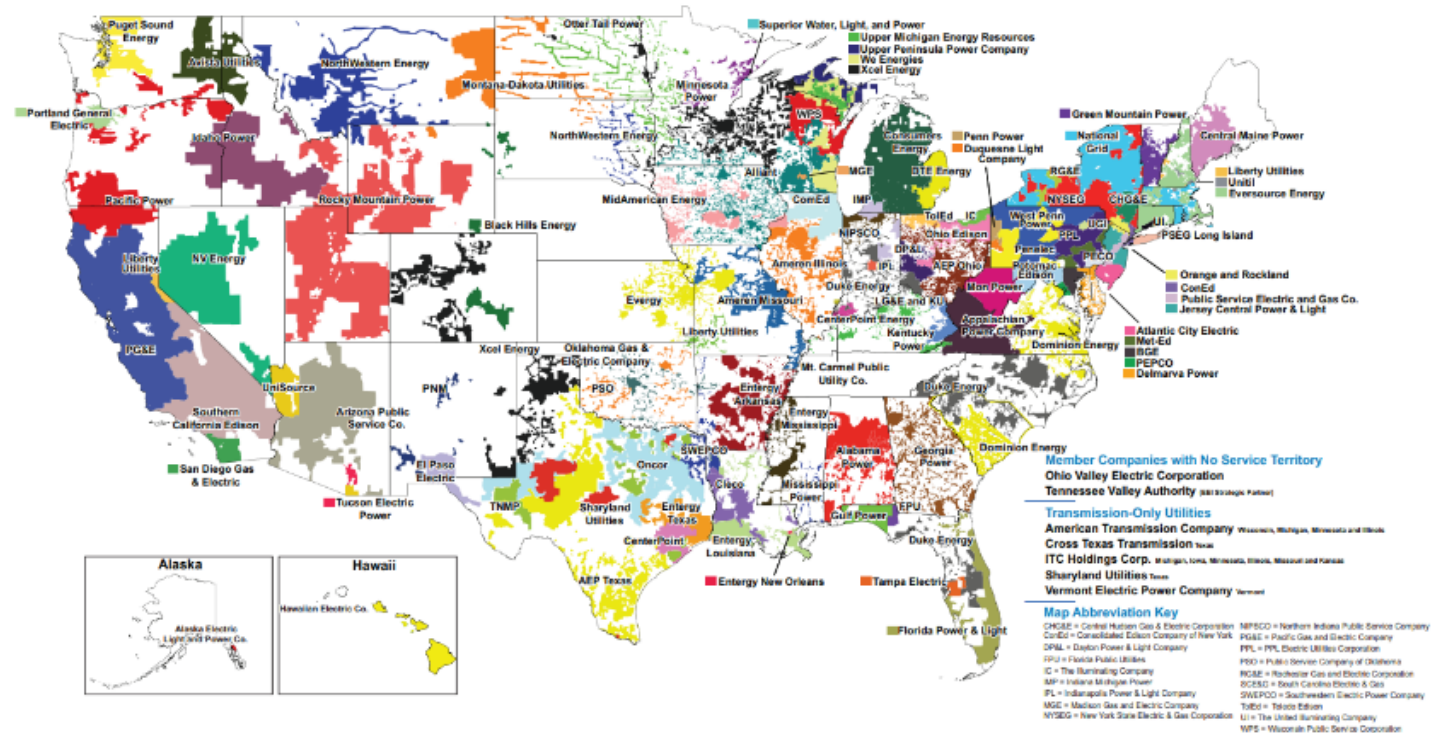
Electric transportation:

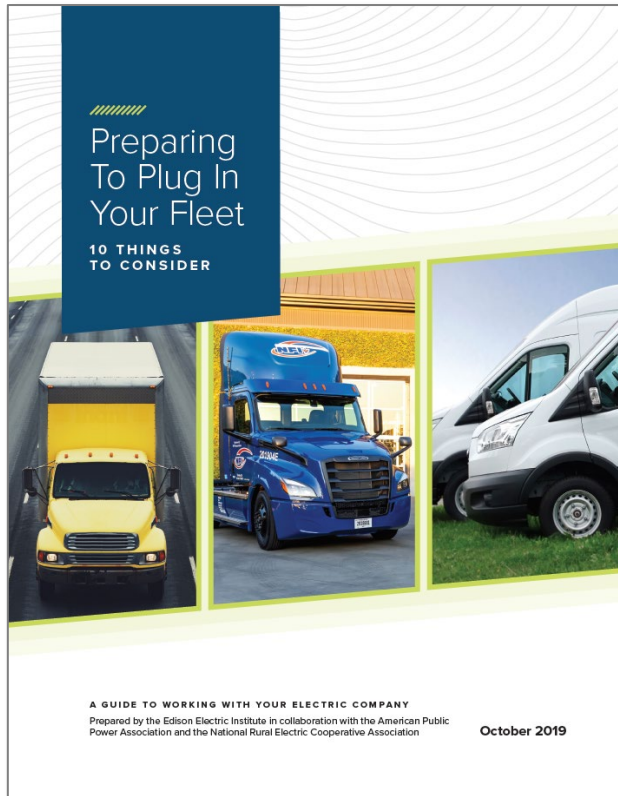
- Benefits communities, businesses, and customers
- Reduces CO₂ emissions and brings immediate improvements to air quality
- Leverages the ongoing reductions in power sector emissions



Federal/DoD Fleets Electric Company Engagement

- EEI Fleet Electrification Working Group
- Why engage with electric companies early
- Establish points of contact
- Build internal expertise and capabilities
- Drive toward common practices





Preparing to Plug In Your Fleet: 10 Things to Consider

Charging Information
Charging equipment. If you know the type of charging equipment that will be used at this location, please specify the type of equipment on 4.

Vehicle and Operating Profile Information
Operating profiles of vehicles planned to charge at this location. Please complete a row for each of the unique daily operating profiles for the vehicles that will charge at this location.

	Vehicle Make and Model	Battery capacity (kWh)	Quantity	Est. Driving Start and End Time(s) (e.g., 9 a.m. to 5 p.m.)	Est. Parking Start and End Time(s) (e.g., 5 p.m. to 9 a.m.)	Est. Charge Duration (hrs.)	Est. Daily Mileage (mi.)
1							
2							
3							
4							
Total vehicles charging at this location							

Procurement plan. For each of the vehicles that will charge at this location, please specify the anticipated timing of delivery.

Vehicle Make and Model	Quantity	Order placed? (YES or NO)	Anticipated delivery date (mm/dd/yyyy)

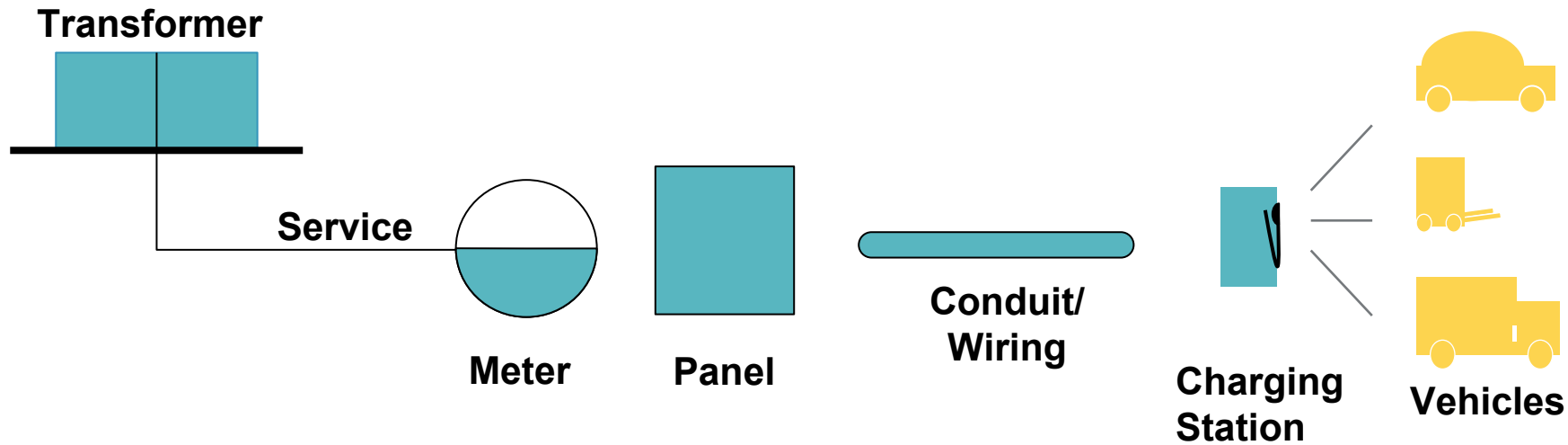
Procurement plans within the next 5 years. If you are planning to procure additional vehicles to charge at this location over the next 5 years, please describe the type, quantity, and anticipated timing for delivery of these vehicles below.

Vehicle Make and Model	Quantity	Estimated timing for delivery (month or year)

Sustainability goals. Does your organization have any longer-term sustainability or environmental goals that may lead to procuring more electric vehicles in the future? If so, please describe below.

Electric Service Evaluation Template for Electric Fleets

EV Charging Infrastructure Programs



Service Connection	Supply Infrastructure	Charging Equipment
Electric company	Customer	Customer
Electric company	Electric company	Customer
Electric company	Electric company	Electric company

Incentive-based

Utility-constructed make-ready

Utility-owned/operated

Possible Fed/DoD Pathways for Financing EV & Charging Infrastructure with Regulated Electric Companies



Leverage Exhibit A in Areawide Contracts (AWC): Long-term gov't-wide contracts with electric cos for the procurement of utilities and for the acquisition of value-added services



Modify AWC exhibits authorities to create EV As-a-Service approaches



Expand the use of Utility Energy Services Contracts (UESCs) including gasoline/diesel savings



Leverage DoD Utility Privatization Contracts to be used for sustainability/resilience projects to include new energy technologies such as EV chargers.



Edison Electric
INSTITUTE

Power by AssociationSM

Federal Utility Partnership Working Group Seminar

Utility Industry Perspectives, Priorities, and Other Updates

May 5, 2021

Rick Murphy
Managing Director – Energy
Markets





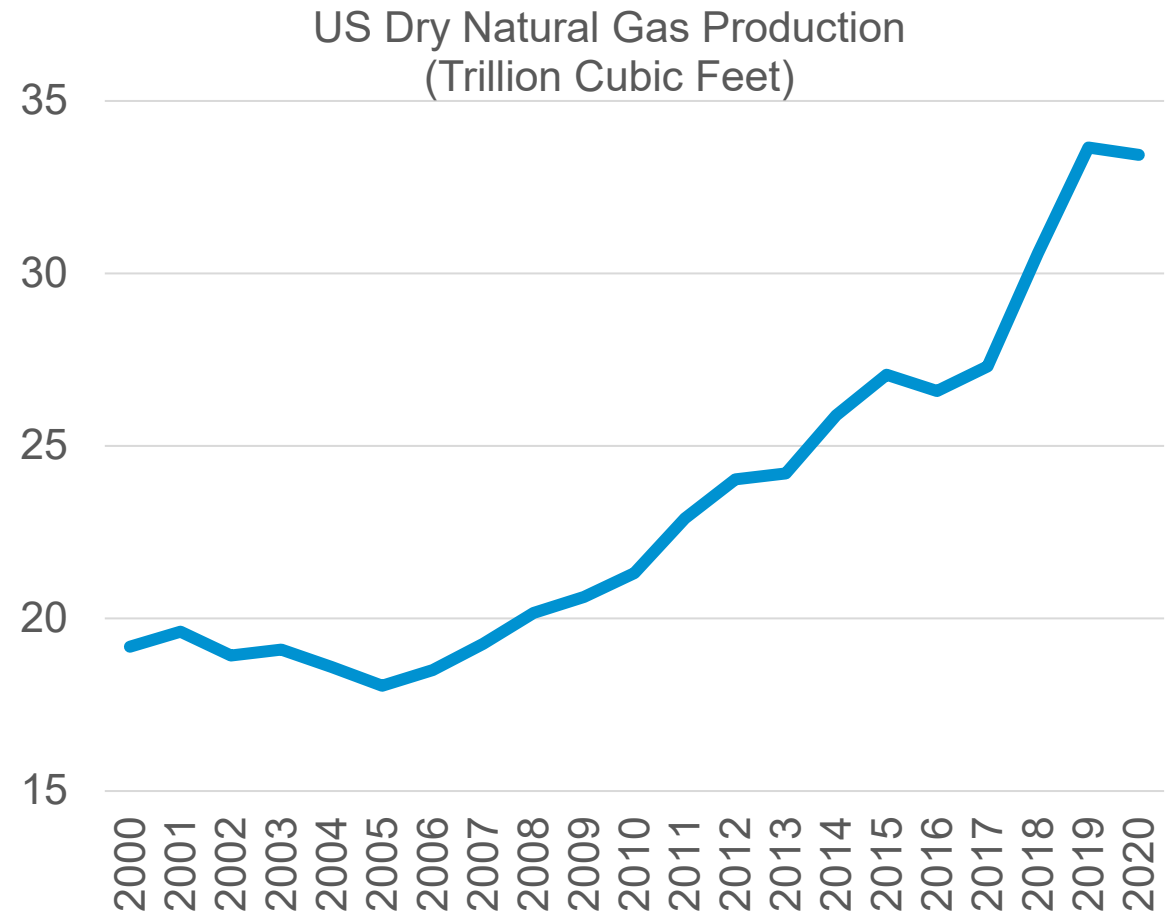
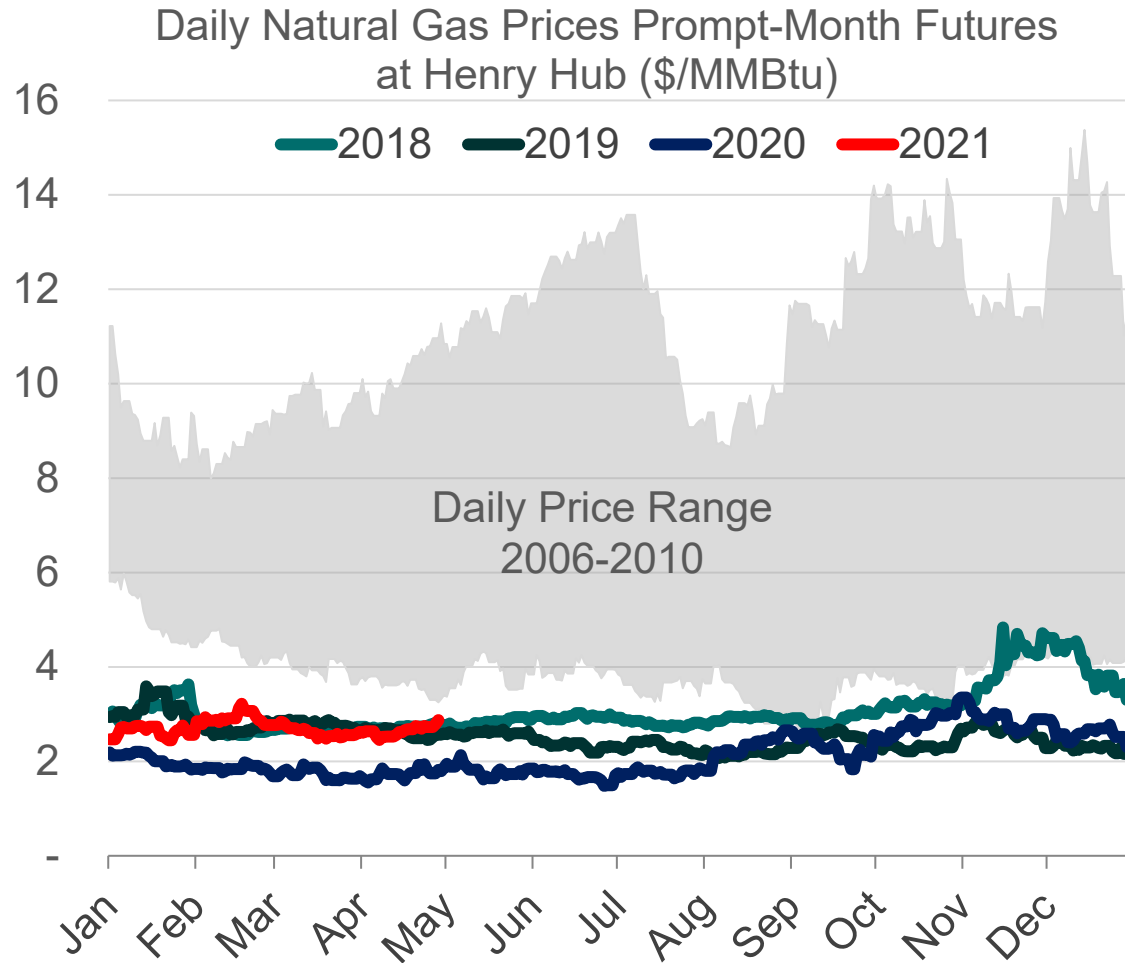
The American Gas Association (AGA) represents companies delivering natural gas safely, reliably, and in an environmentally responsible way to help improve the quality of life for their customers every day. AGA's mission is to provide clear value to its membership and serve as the indispensable, leading voice and facilitator on its behalf in promoting the safe, reliable, and efficient delivery of natural gas to homes and businesses across the nation.

Committed to utilizing America's abundant, domestic, affordable and clean natural gas to help meet the nation's energy and environmental needs.

Climate Change Position Statement

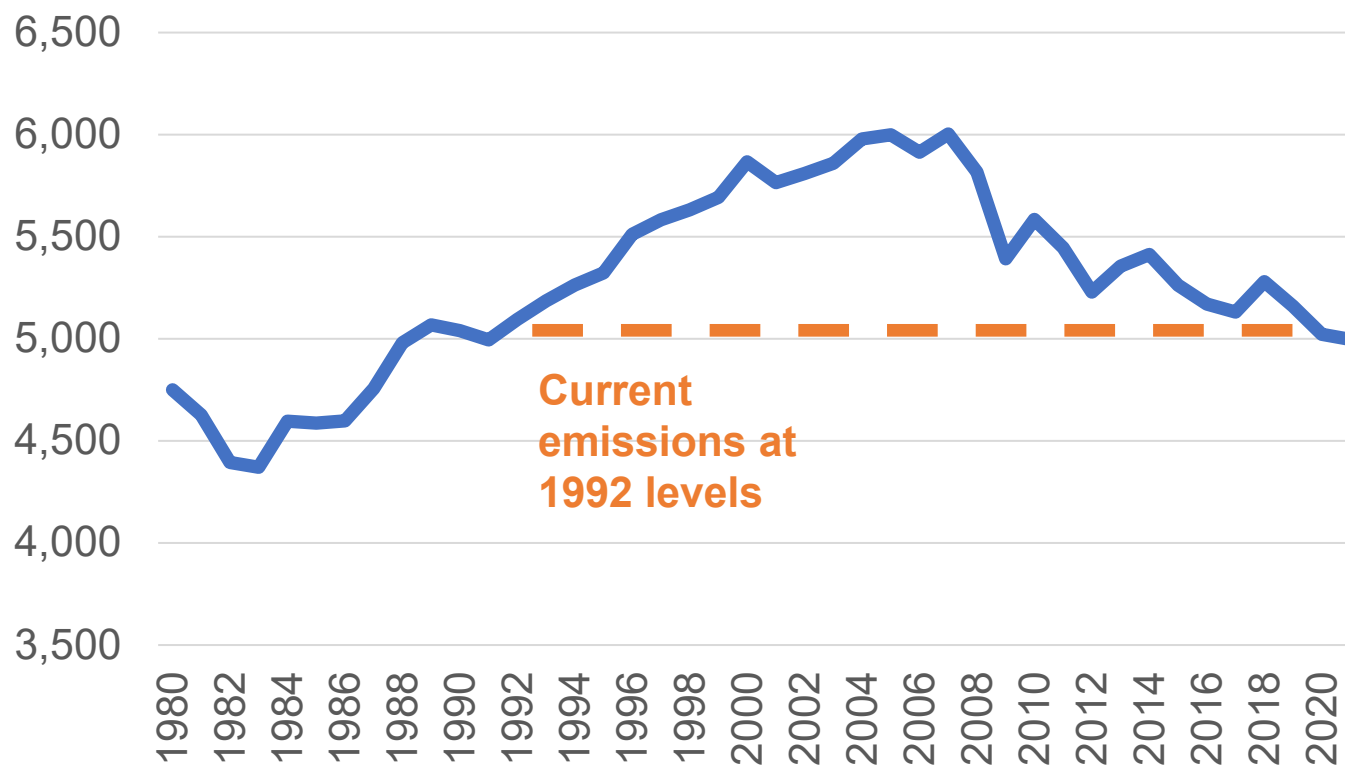
The American Gas Association is committed to reducing greenhouse gas emissions through smart innovation, new and modernized infrastructure, and advanced technologies that maintain reliable, resilient, and affordable energy service choices for consumers.

Abundant natural gas supplies & expanding infrastructure has led to low & stable prices



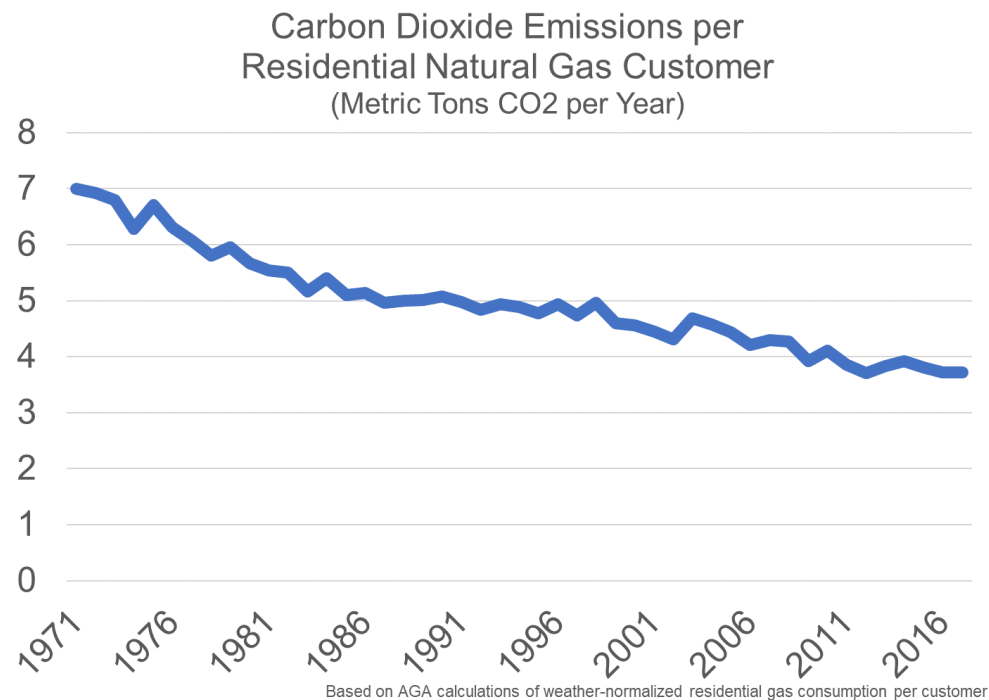
Natural gas has led reductions in US CO₂ emissions to 27-year lows, and is projected to continue to decline

US Carbon Dioxide Emissions from Energy Consumption
(Million Metric Tons CO₂)

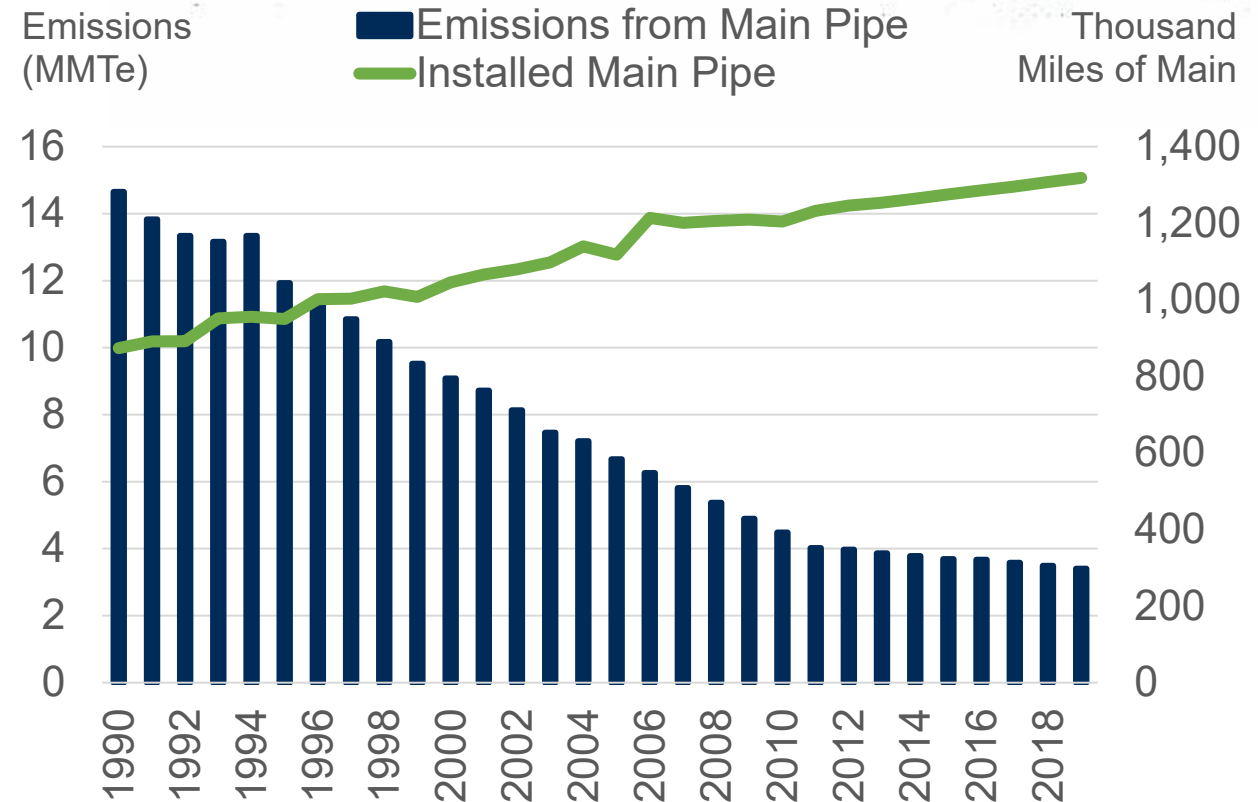


Natural gas utilities and its customers have made significant progress reducing emissions

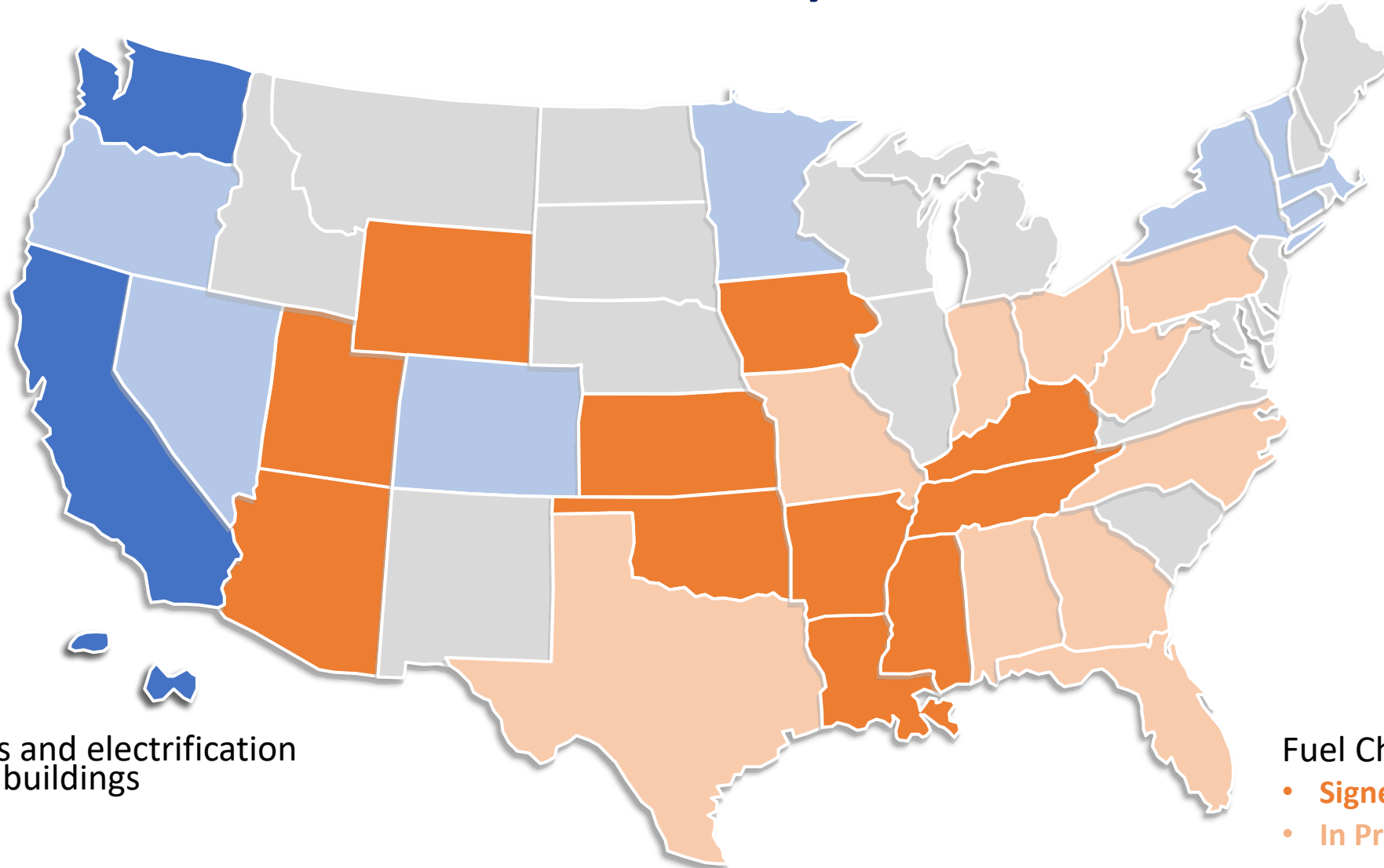
Declining Customer CO₂ Emissions



Reductions of Methane



Natural Gas Sustainability and State Policies

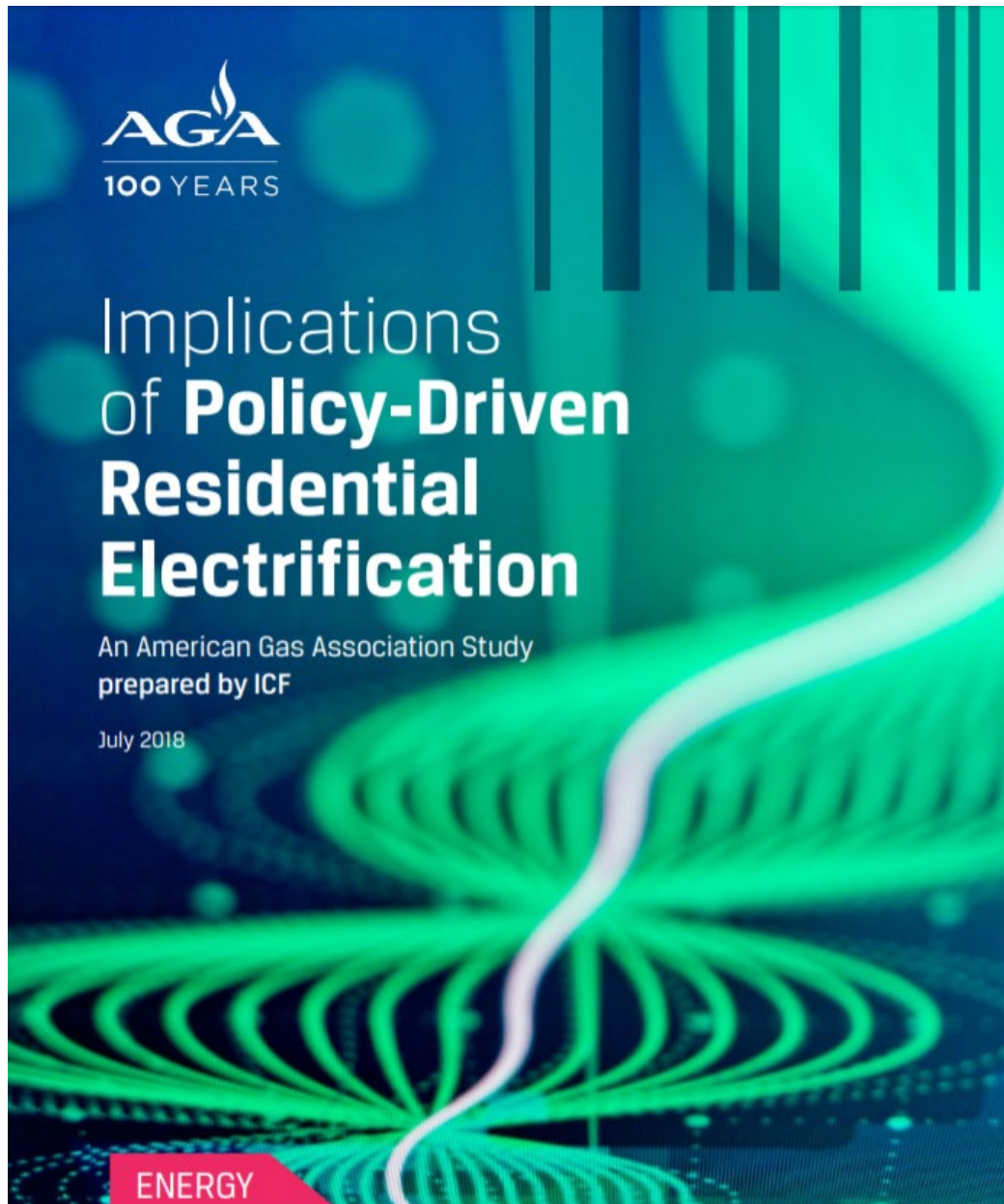


State gas bans and electrification codes in new buildings

- **Adopted**
- **Proposed**

Fuel Choice States

- **Signed into law**
- **In Progress**



Key Findings

- Incremental generation capacity requirements and transmission system upgrade costs
\$155 to \$426 billion
- Overall US GHG emissions reduced by
1% to 1.5%
- Total cost of policy-driven residential electrification
\$1,060 to \$1,420 per year per converted household increase in energy costs
- Cost of carbon dioxide emissions reductions:
\$572 to \$806 per ton

A Thoughtful Pathway

Towards U.S. Emissions Reductions

Natural gas technologies offer pathways to achieve our shared goal of reducing emissions while maintaining affordability, reliability and the quality of life that Americans enjoy.



Actions

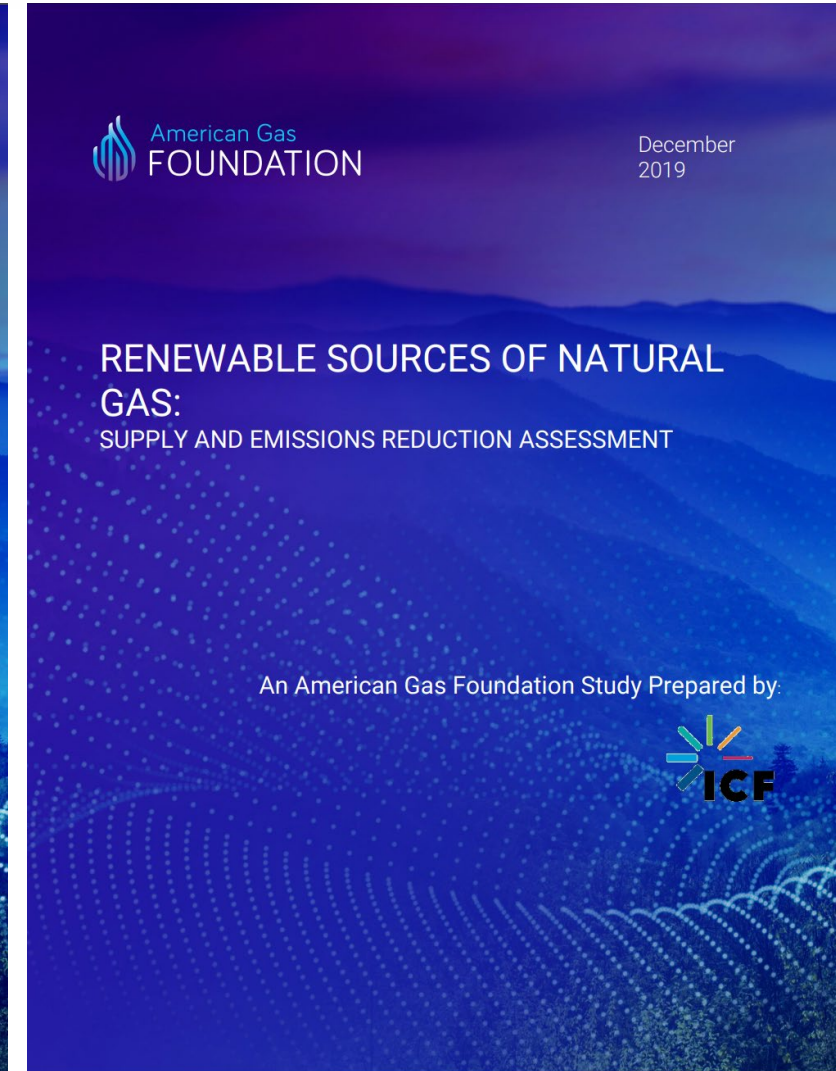
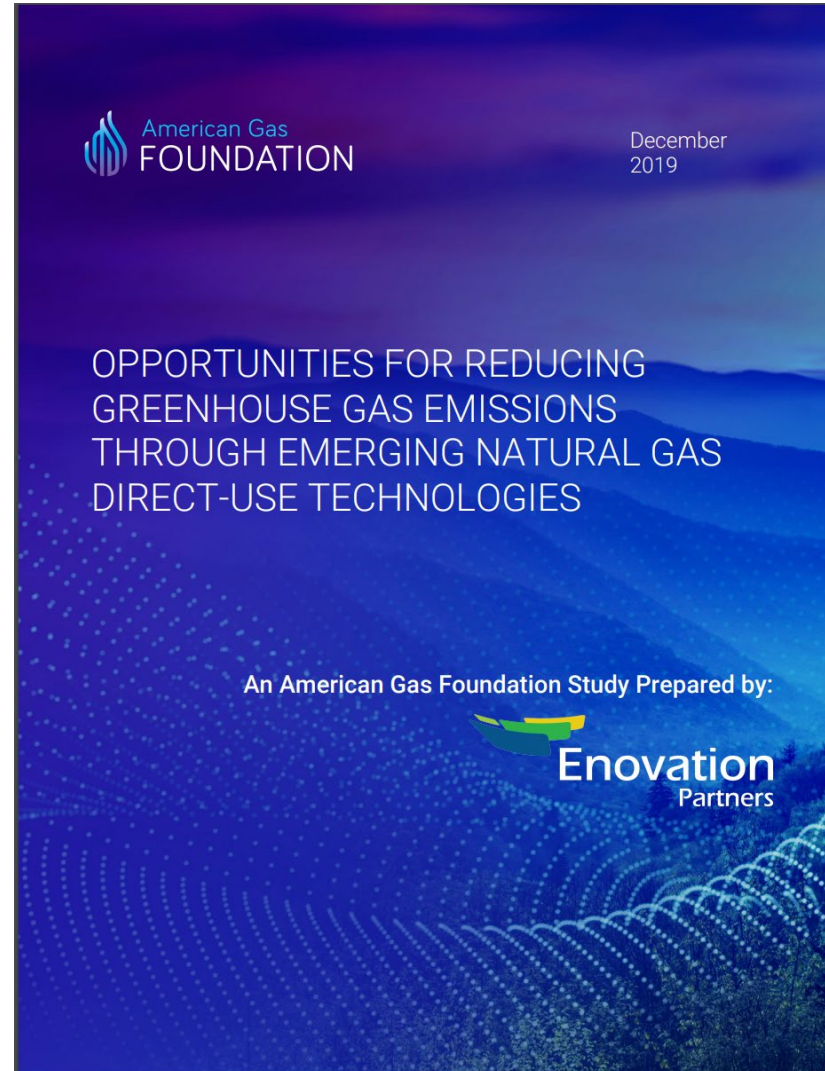
- Continued Commitment to Energy Efficiency
- Advance the deployment of next generation technologies
- Develop renewable sources of supply

Informing Energy and Environmental Public Policy

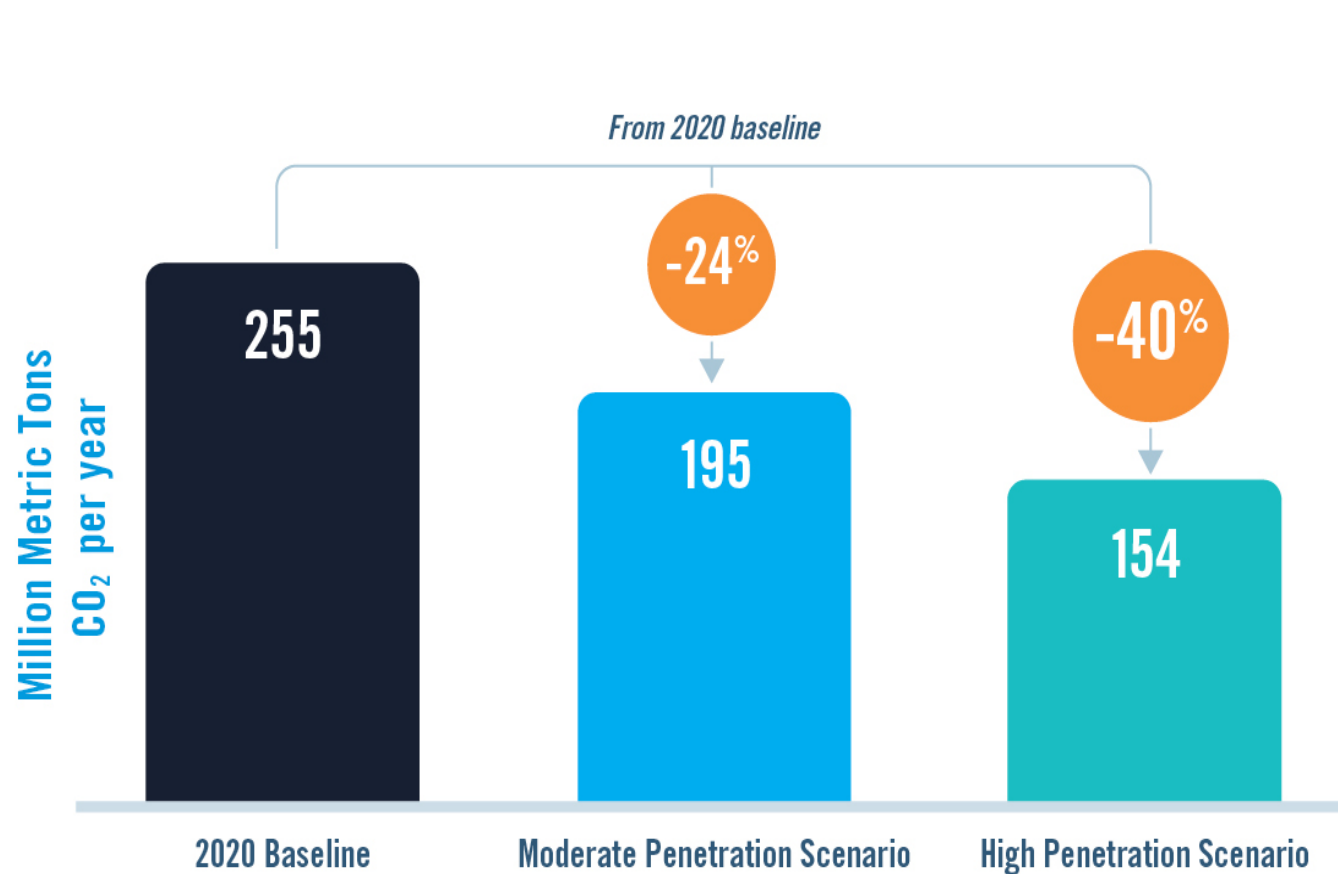
AGF funds independent, critical research that can be used by policy experts, government officials, the media and others to help formulate fact-based energy policies that will serve this country well in the future

The American Gas Foundation published two studies in December 2019.

The studies focused on specific components of the natural gas pathway to emissions reductions



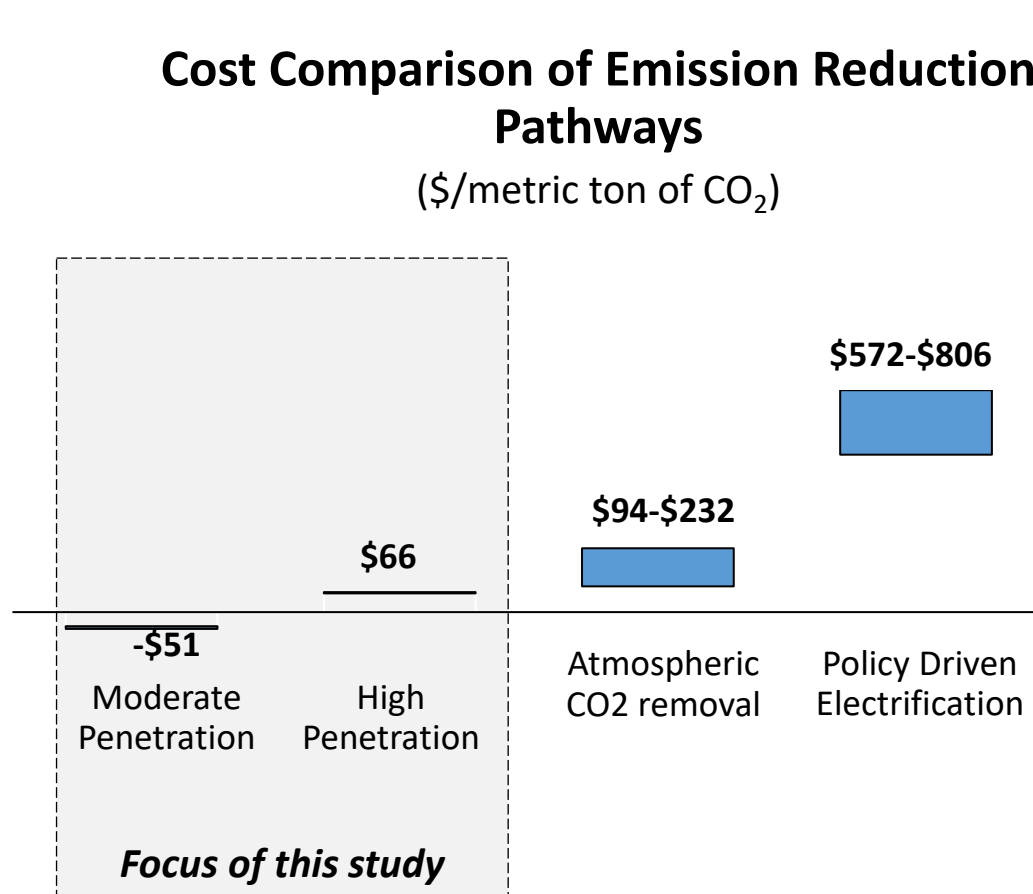
Highly efficient, emerging direct use technologies could reduce natural gas CO₂ emissions by 40% in residential sector by 2050...



Comments

- In the Moderate and High Penetration scenarios, 60 and 101 million metric tons of CO₂ respectively are reduced
- Complementary technologies (e.g. insulation) created 2% efficiency improvement
- Achieve a decrease in emissions in spite of the growth in the number of installed units by ~36%

...in a cost-effective manner compared to other carbon abatement options



Comments

- In the Moderate Penetration scenario reductions are achieved with savings of \$51 per metric ton
- In the High Penetration scenario reductions are achieved at a cost of \$66 per metric ton
- In comparison, atmospheric CO₂ removal is 3x more expensive and policy driven electrification is 11x more expensive to reduce emissions than emerging natural gas technologies

RNG Technologies and Feedstocks

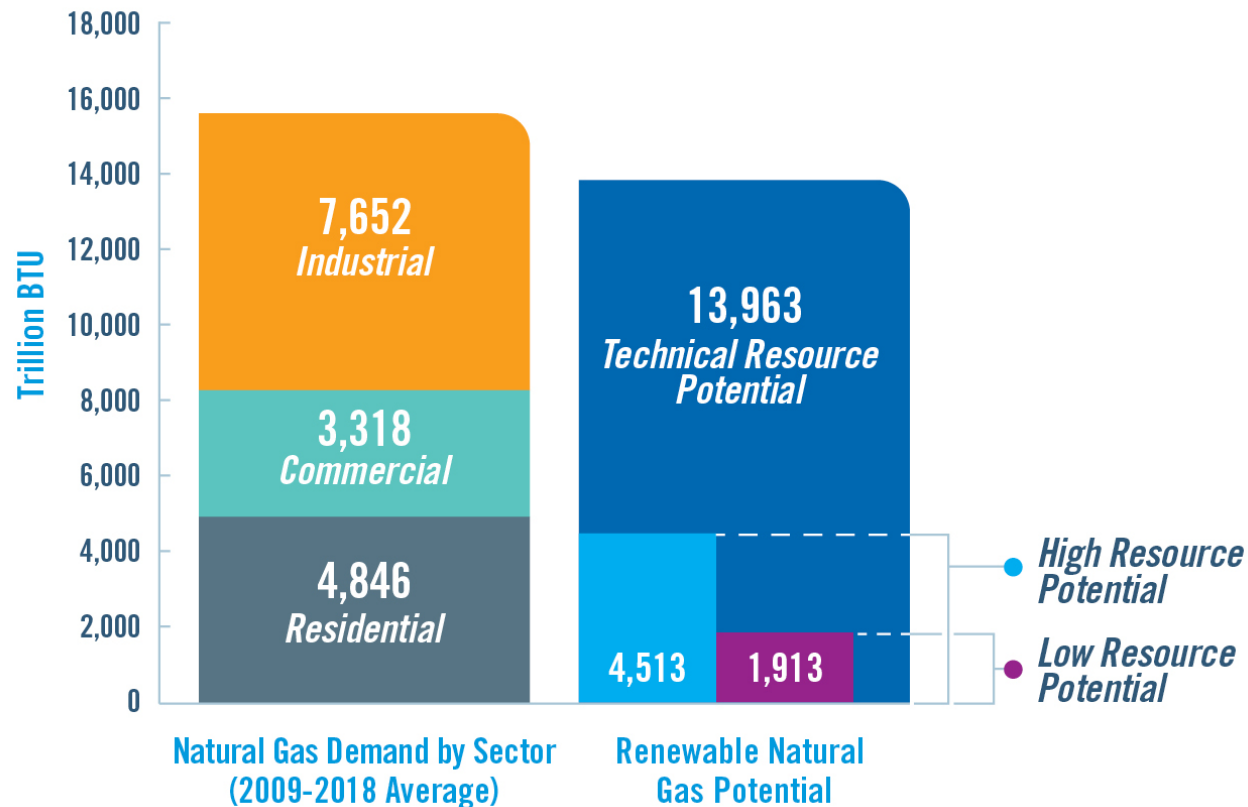
Three Production Technologies



Nine Feedstocks

The scenarios modeled, estimating a low, high and technical resource potential

RNG Resource Potential



Comments

- High resource potential scenario: **4,513 tBtu of RNG by 2040**
- Reference point, residential demand for natural gas: **4,846 tBtu (avg. 2009-2018)**
- Critical factors: utilization of feedstocks, technology adoption rate, and policy levers

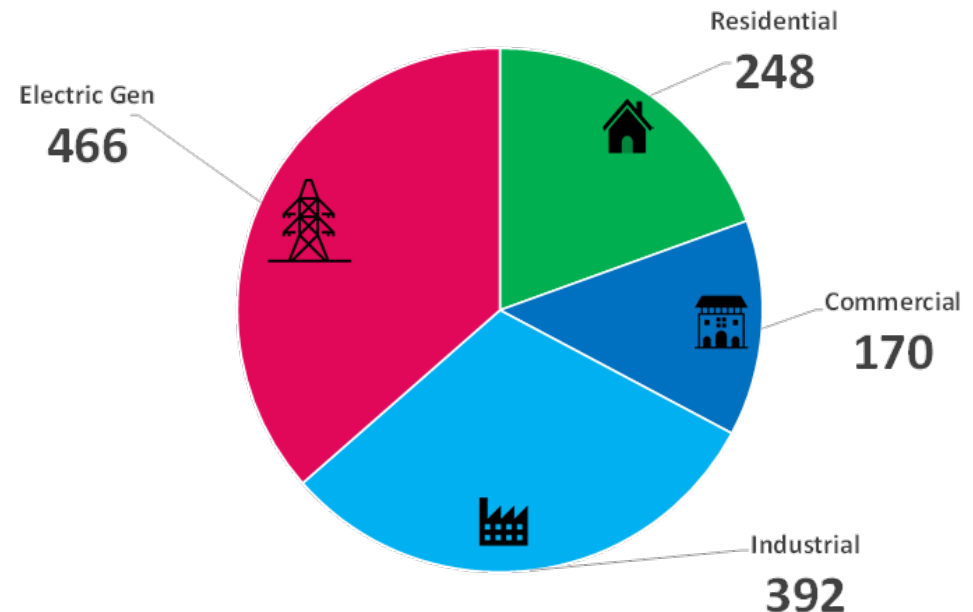
Utilized established methodologies for measuring emissions attributes for renewable sources of natural gas to develop emissions reduction potential

Comments

- RNG deployment could achieve **101 to 235 MMT of GHG emission reductions by 2040**
- Represents up to a 95% reduction in residential GHG emissions from natural gas
- GHG emissions reduction potential conducted using two accounting frameworks

For the sake of reference

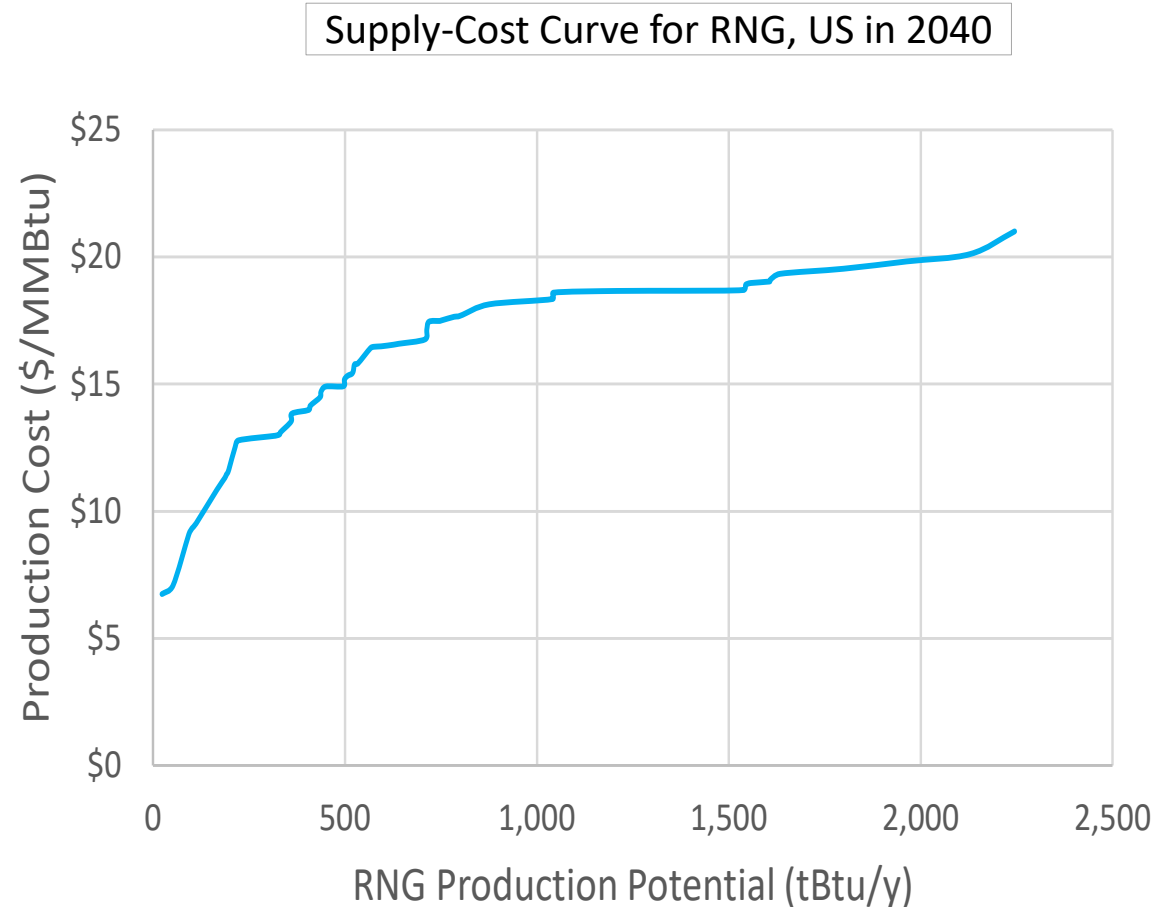
Average Annual Carbon Dioxide Emissions (MMT)
from Natural Gas Consumption in the U.S.
(2009-2018)



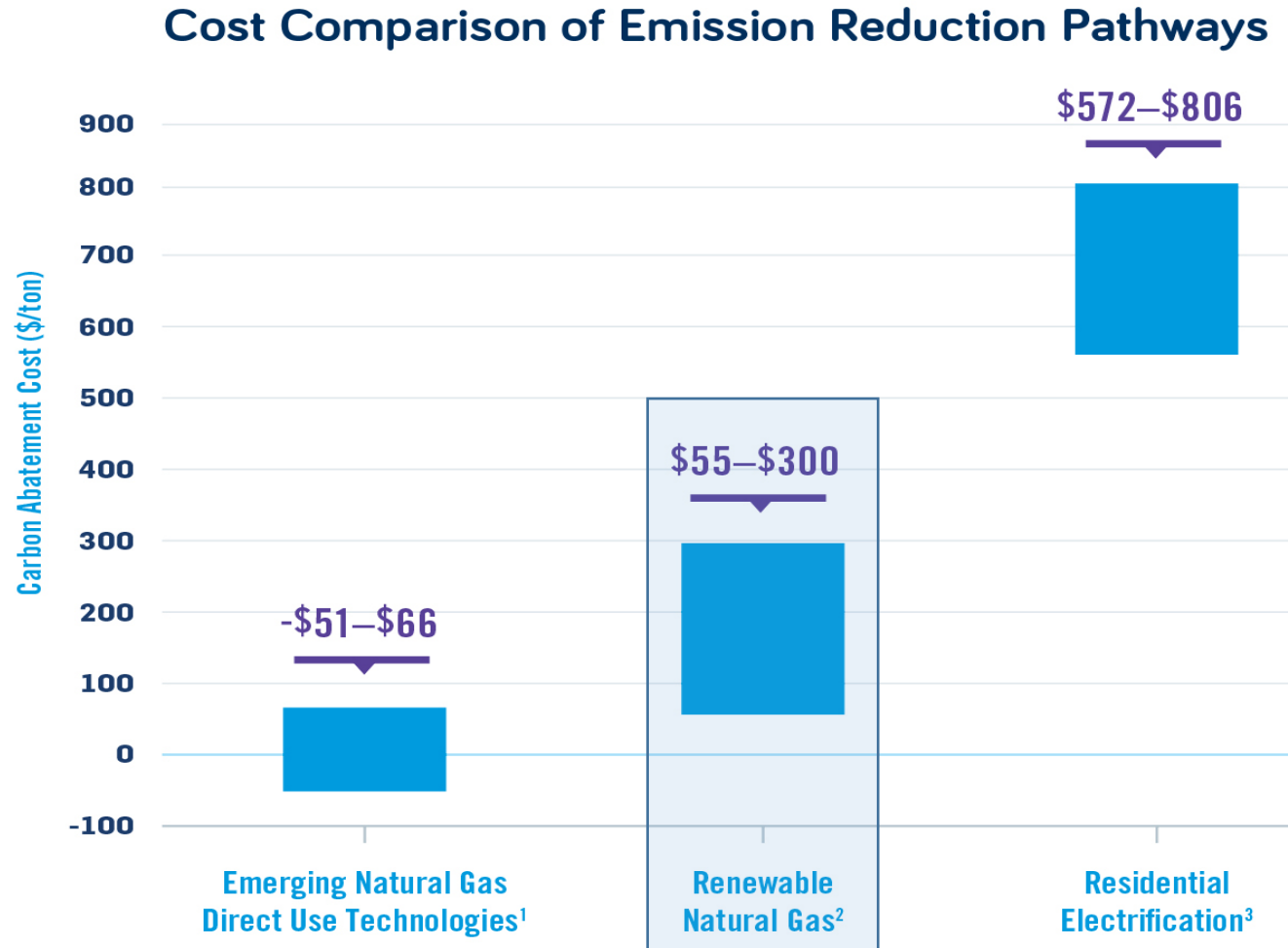
By 2040, a majority of RNG to cost between \$7 and \$20 per MMBtu

Comments

- Broad range of expected costs: **\$7- 45/MMBtu**
- Costs include estimates for: feedstock, biogas conditioning and upgrading, interconnection, and corresponding O&M costs
- There is potential for cost reductions as the RNG for pipeline injection market matures, production volumes increase, and the underlying structure of the market evolves



As an emission reduction strategy, RNG is competitive with other alternatives



¹ Opportunities for Reducing Greenhouse Gas Emissions Through Emerging Natural Gas Direct-Use Technologies, 2019 | ² Renewable Sources of Natural Gas Supply & Emissions Reduction Assessment Study, 2019 | ³ Implications of Policy-Driven Residential Electrification, 2018

Greenhouse Gas Emission Reductions Strategies

Natural gas end-use demand reductions

Energy efficiency, emerging gas technologies, 'targeted' or 'selective' electrification

Low Carbon Gas Supply

RNG, Hydrogen, Synthetic Natural gas

Methane Emission Reductions

Methane emission reductions in distribution

Negative Emissions Tech & Offsets

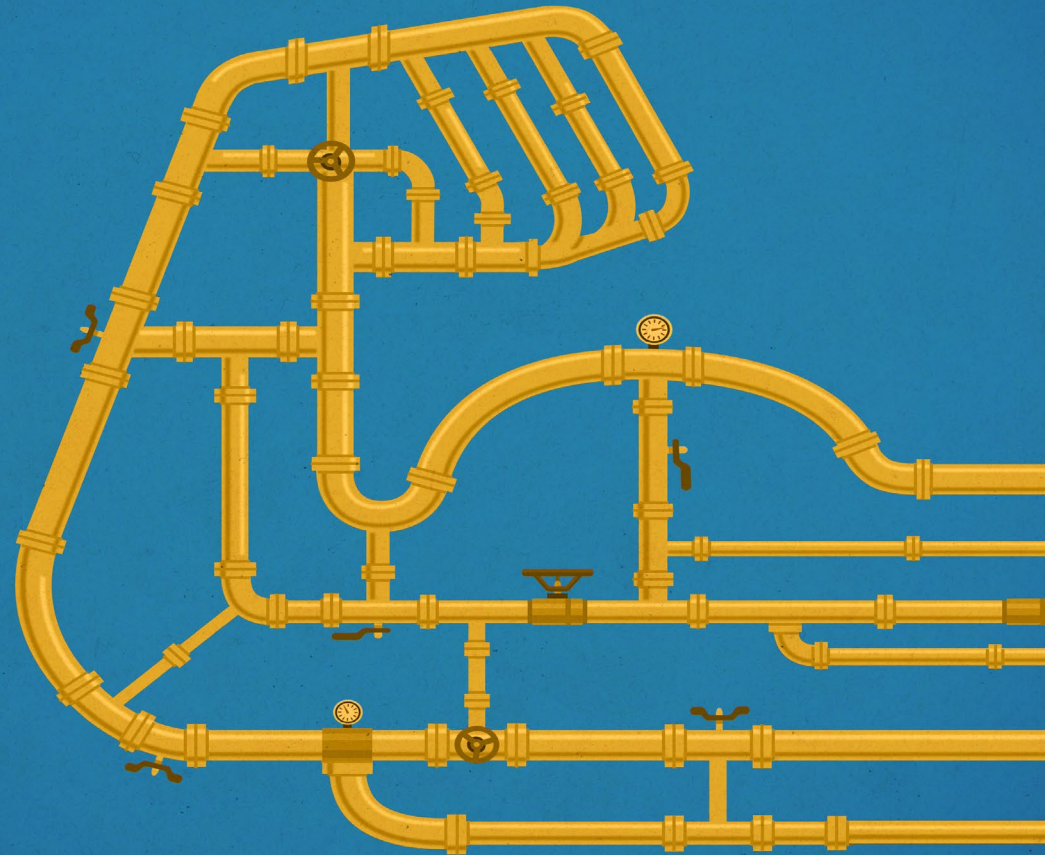
Indirect approach to reaching emissions targets

- | | | | | |
|---|---|--|---|---|
| <ul style="list-style-type: none"> • High efficiency gas furnace • Tankless water heater • Natural gas heat pump • Behavioral programs • Smart thermostats & building controls • New construction: High efficiency homes (~80% improvement) & 'best conventional tech' homes (~40% improvement) • Deep energy retrofit existing buildings & more limited EE envelope improvement (e.g. Energy Star residential retrofits) • Savings from warming temperatures • Industrial energy efficiency • Aerial thermal imaging to prioritize • Combined heat and power (CHP) • Micro-CHP • Hybrid gas-electric heating systems (ASHP with gas back-up) • Air-source heat pumps (ASHPs) | <ul style="list-style-type: none"> • for space and water heating • Geothermal heating systems (gas utility diversification) • District heating • Electric heat pump & resistance water heaters • Electric cooking • Building re-commissioning • High efficiency gas cooking equipment • High efficiency gas space cooling equipment • Energy Star gas dryers • Electric space cooling • Electric dryers • Reduction in commercial gas CHP loads • Replacement of commercial CHP units • Hydrogen boilers for space and water heating • Hydrogen-powered district heating | <ul style="list-style-type: none"> • Renewable natural gas (RNG) – Anaerobic Digestion & landfill gas • RNG – Gasification • Hydrogen <ul style="list-style-type: none"> • (Blue and green) – blending (low volumes) in existing pipelines • Dedicated new pipelines • Synthetic natural gas (methanated hydrogen) • Differentiated (low production-methane) gas | <ul style="list-style-type: none"> • Pipeline integrity management programs • Updates to meter emission factors • Dig-in programs and estimation of actual event emissions • Blowdowns and metering & regulating station measures • Operational practices to optimize gas use at compressor stations • Gas storage methane emissions • Accelerated leak repair programs for non-hazardous "Type 3" leaks | <ul style="list-style-type: none"> • Direct Air Capture • Biomass combustion with CCS • Land-use changes • Industrial CCS (also commercial) • Methane offsets • Carbon offsets • RNG – Dairy and Swine based feedstocks should be specified as carbon negative pathways • LNG for marine fuel |
|---|---|--|---|---|

Building a Resilient Energy Future:

How the Gas System Contributes to US Energy System Resilience

An American Gas Foundation Study Prepared by:

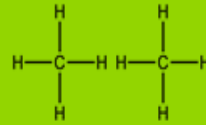


Key Takeaway

The gas system supports the overall resilience of the energy system through its inherent, physical and operational capabilities that enable it to meet the volatile demand profiles resulting from resilience events.

Fundamental Resilience Characteristics of the Gas System

Inherent Resilience of Gas



A molecular form of energy storage; the natural gas molecule is an abundant energy form with long-duration and seasonal storage capabilities.

- Compressibility
 - Storage
 - Linepack
- Abundance and Diversity of Supply

Physical Resilience of System Assets



Most gas system assets are underground and shielded from major disruptions. In most cases, the system is self-reliant, reducing its exposure to disruption.

- Underground infrastructure
- Looped and Parallel T&D Network
- Self-Reliant Gas-Fired Equipment
- Distributed Customer Generation
- System Storage Capacity

Operational Resilience of the Gas System



Operational flexibility is designed into the gas system within a set of system standards that ensure the system's safety and security.

- Robust Management Practices
- Flexible Delivery
- Demand Side Management
- Large Customer Contract Design

Key Takeaway

Recent climate events have revealed the US energy system's potential vulnerabilities. However, the multitude and diversity of resilience assets that already exist as part of the energy system have made the difference — facilitating energy flows to critical services and customers.

North Atlantic Hurricanes have increased in intensity, frequency and duration since the 1980s



Storm surges reach farther inland as they ride on top of sea levels that are higher due to warming.



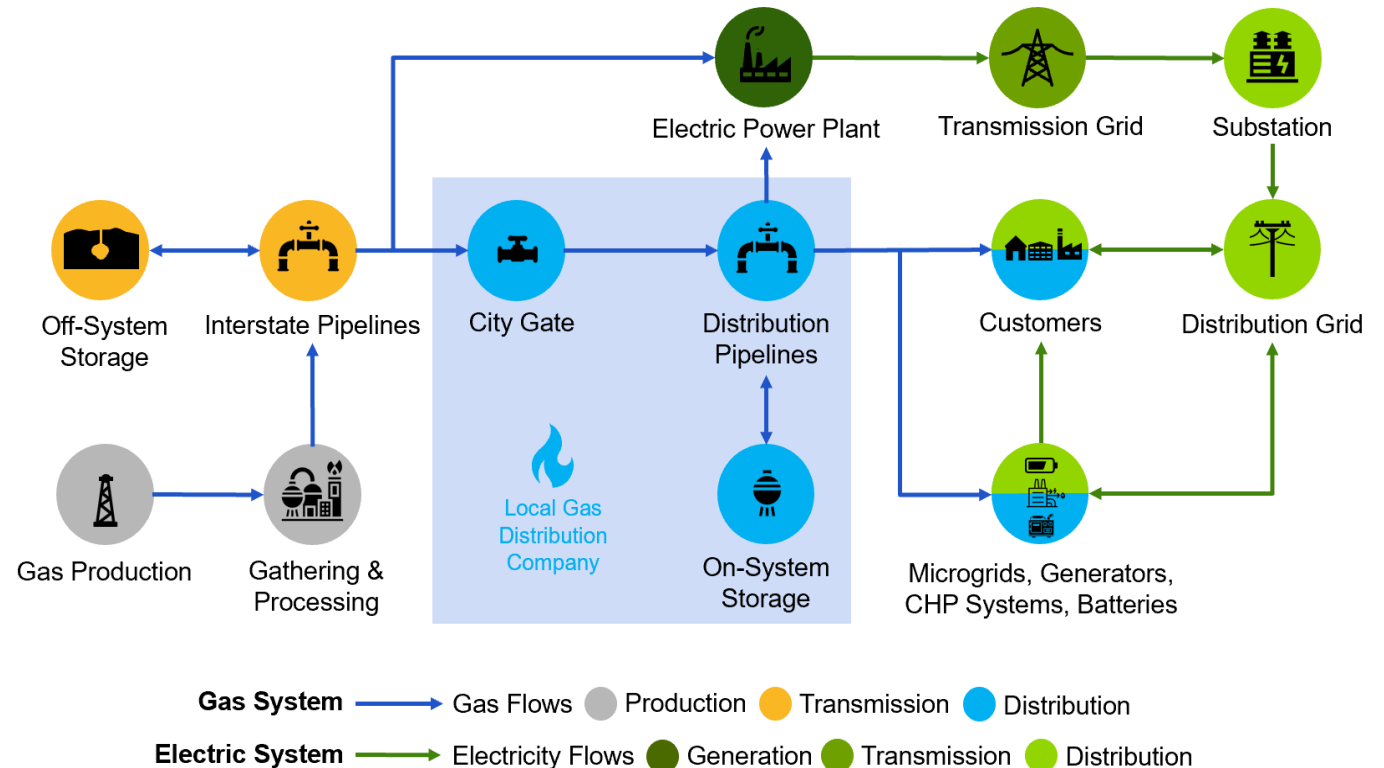
Heavy snow falls during winter storms affect transportation systems and other infrastructure



Key Takeaway

Driven by changes in the cost and availability of new technologies and increasing political and social pressure to decarbonize, our energy system is undergoing a transformation. This transformation exposes an issue of energy system resilience related to the interaction of the gas and electric systems.

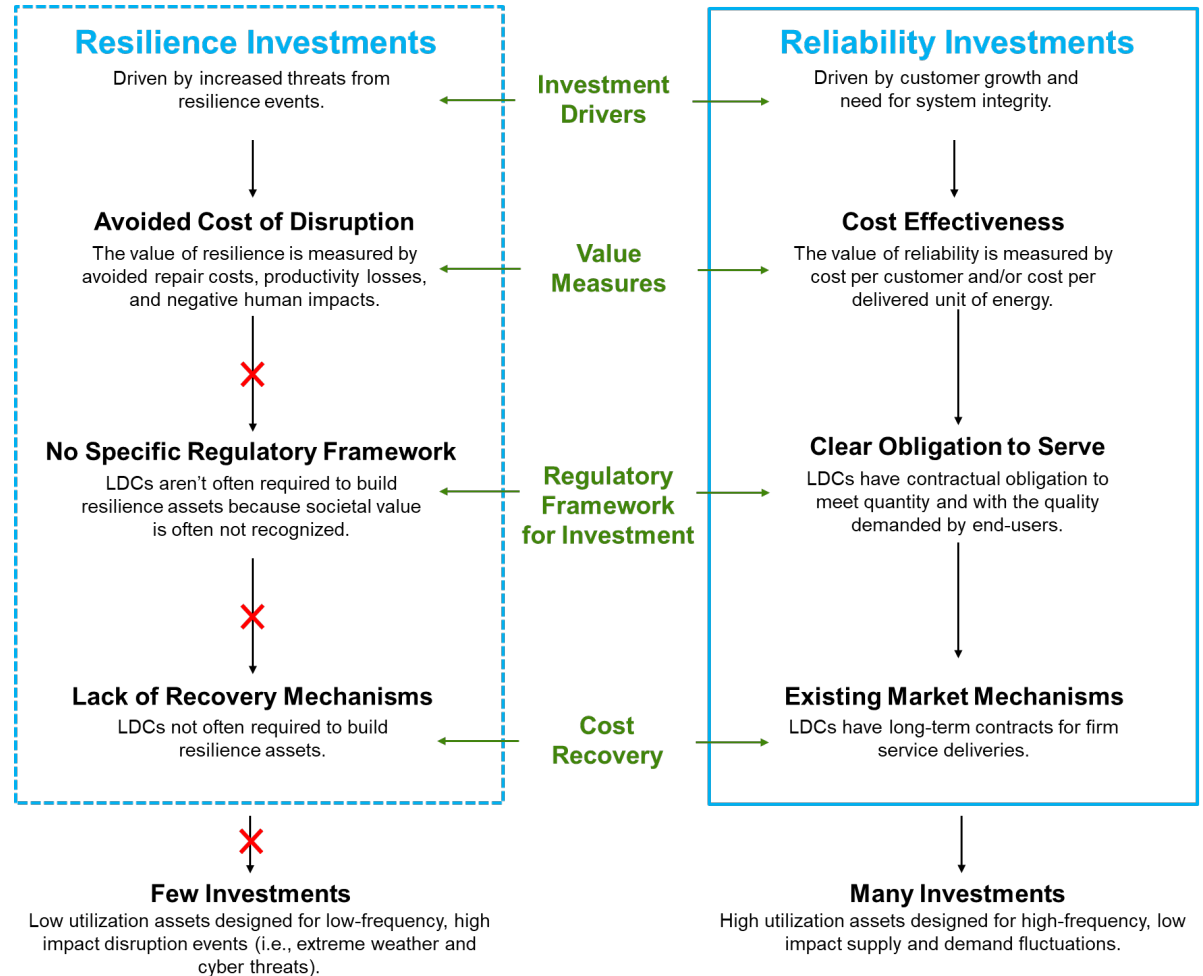
Interdependencies Between the Gas and Electric Systems



Key Takeaway

- The current model for maintaining the resilience of our energy system was built to support a legacy view of how the energy system operates.
- Ensuring future energy system resilience will require careful assessments of all available solutions, maximizing the fundamental benefits of a diversity of assets.
- Resilience needs to be considered as another dimension of energy system planning, like how reliability is considered today
- Utilities, system operators, regulators, and policymakers need new frameworks to consider resilience impacts as part of the energy system transformation.

A New Framework is Needed to Appropriately Consider Resilience within the Regulatory Context



Thank you

Richard Murphy
Managing Director – Energy Markets



We will be in practice mode until the break is over



FEDERAL UTILITY PARTNERSHIP WORKING GROUP VIRTUAL SEMINAR

May 5-6, 2021

General Services Administration Energy Division Introductions, Perspectives, and Priorities

- Denise Funkhouser, GSA Energy Division
- Ebony Atkinson, GSA Energy Division
- Matt Harbeson, GSA Energy Division





U.S. General Services Administration



Federal Utility Partnership Working Group

Utility Services and Procurement Overview

Summary of Topics

- Introductions
- Overview of GSA's energy program
- Major Initiatives
- Areawide Contracts
- Deregulated Electricity and Natural Gas Procurements
- Renewable Energy

GSA's Energy Team and Partners

- Overview of GSA's energy programs
 - Energy Procurement
 - Energy Management
 - Regional Energy Coordinators
- Collaboration
 - Sustainability Program
 - GSA's Proving Ground and DOE National Labs
 - Office of Federal High Performance Green Buildings
 - Offices of Portfolio Management and Customer Engagement, Design and Construction, and Acquisition Management

Major Initiatives

- ESPC/UESC implementation from the Energy Act of 2020
- Emphasis on renewable energy

Utility Procurement Program

- GSA has authority under 40 USC 501 and FAR Part 41 to procure power and enter into utility service contracts for Federal agencies
- DoD and DOE have permanent delegations of 10 year authority
- Veterans Affairs has authority for interconnection charges only
- GSA delegates procurement authority to Federal agencies to enter into Utility Service Contracts

Utility Procurement Program (continued)

- Areawide Contracts
 - GSA establishes long-term (10 year) government-wide contracts with regulated utility companies
 - Can include energy management services (UESC) and interconnection agreements (micro-grids, solar, wind farm)
 - Over 100 active areawide contracts with two in negotiation
- Utility Regulatory Program
 - Represents the consumer interest of Federal Executive Agencies in Public Utility Proceedings before Federal and State regulatory bodies.

Deregulated Energy Procurements

- GSA procures electricity and natural gas through third party energy supply contracts in deregulated, competitive energy markets
 - 112 utility service territories
 - 166 active supply contracts; 1,476 end-use accounts
 - \$336 million in annual third-party spending
 - 56 Federal agencies and non-profit customers
 - 20% renewable* included in electricity contracts on average
(*National Green-e Renewable Energy Certificates (RECs))

Deregulated Energy Procurements (continued)

- GSA competitive supply contracts
 - Auctions reduce price risk and aggregate buying power
 - Assess market conditions and different pricing components
 - Contract term typically 3-5 years
 - Agencies pay utility and energy suppliers directly
 - FY21 procurements include DC/MD, NJ, NY, TX, OK, KY, IL, OH, and New England
 - FY21 buys include 50% renewable pricing group for electric

Renewable Energy

- RECs from competitive supply procurement make up large portion of GSA's renewable energy strategy - 88% RECs; 12% onsite renewables in FY20
- Over 100 onsite PV systems
- Two Power Purchase Agreements (PPAs)
 - 140 MW Wind (IL); 75 MW Solar (MD)
 - Completed in 2018; 10 year contract term

Renewable Energy Strategy

- Renewable Energy Strategy
 - Stakeholder alignment
 - Reducing carbon emissions; carbon free electricity
 - Energy cost savings
 - Technology innovation
- GSA is considering a variety of opportunities for renewable energy to meet the goal and further the Administration's climate priorities.



Utility Partnerships for Fleet Electrification

Panel including discussion on electrification of the Federal fleet, EV technology & research, utility experience in partnering for electrification, & 'fleet as a service' model

Moderator, Dr. Ashley Pennington



Jesse Bennett
Research Engineer
NREL



Ruchi Singhal
Sr. Program
Manager
TVA



Monica DeAngelo
Director, Federal
Partnerships
Southern Co



Ed Sniffen
Deputy Director
State of Hawaii Department of
Transportation



Dr. Ashley
Pennington
AAAS STPF Fellow
FEMP, DOE

Fleet Electrification



New Administration – New Goals

- (1) Federal Fleet Electrification
- (2) Public EVSE Deployment



Update Mission, Engage Stakeholders

- (1) Develop best practices and guidance
- (2) Manage Federal Fleet data
- (3) Provide training and expert advice



Accelerate EV
Adoption/Deployment



Facilitate EV Charging
Infrastructure



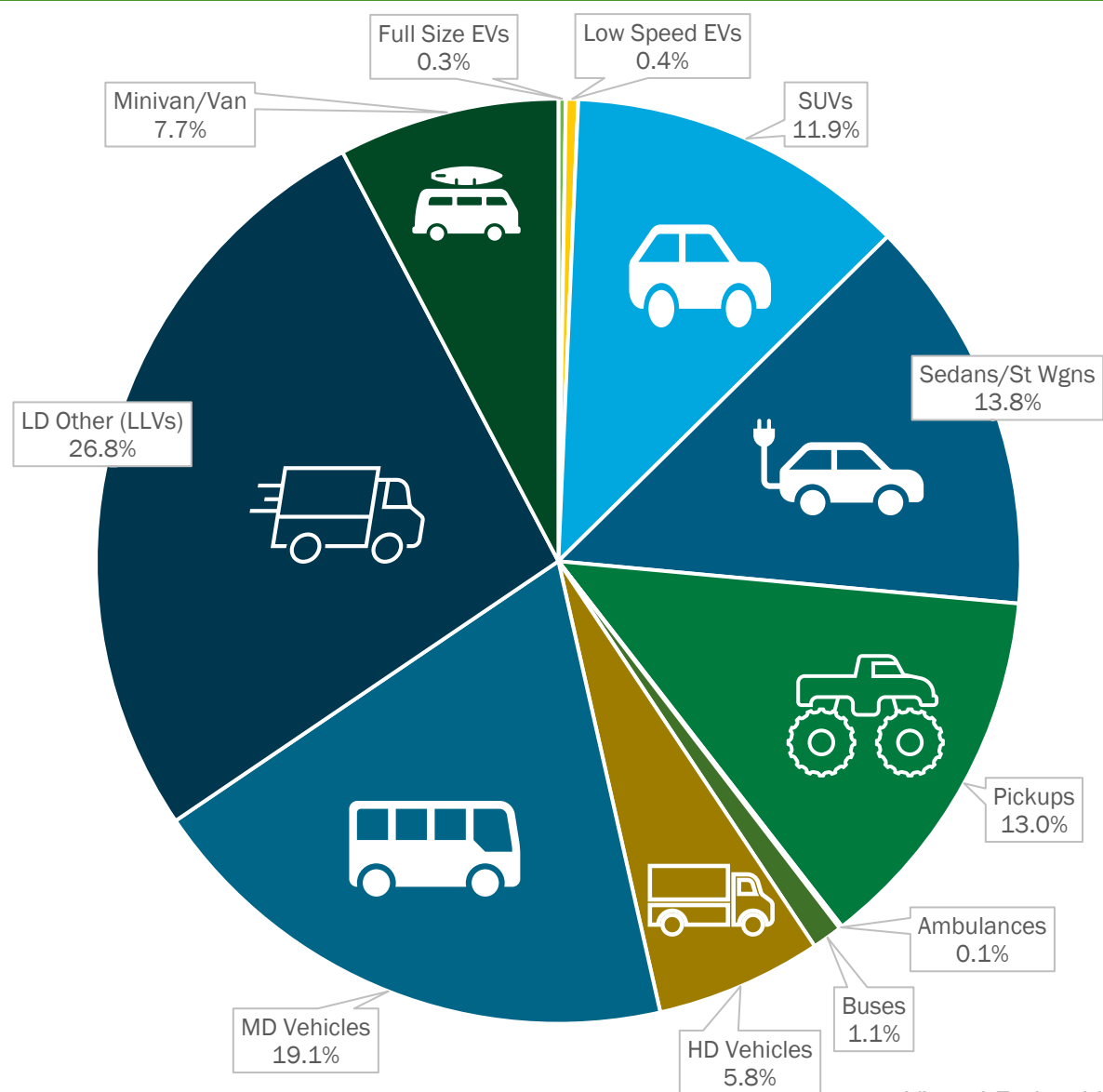
Develop and Share EV
Best Practices



Virtual Federal Utility Partnership Working
Group
May 5-6, 2021



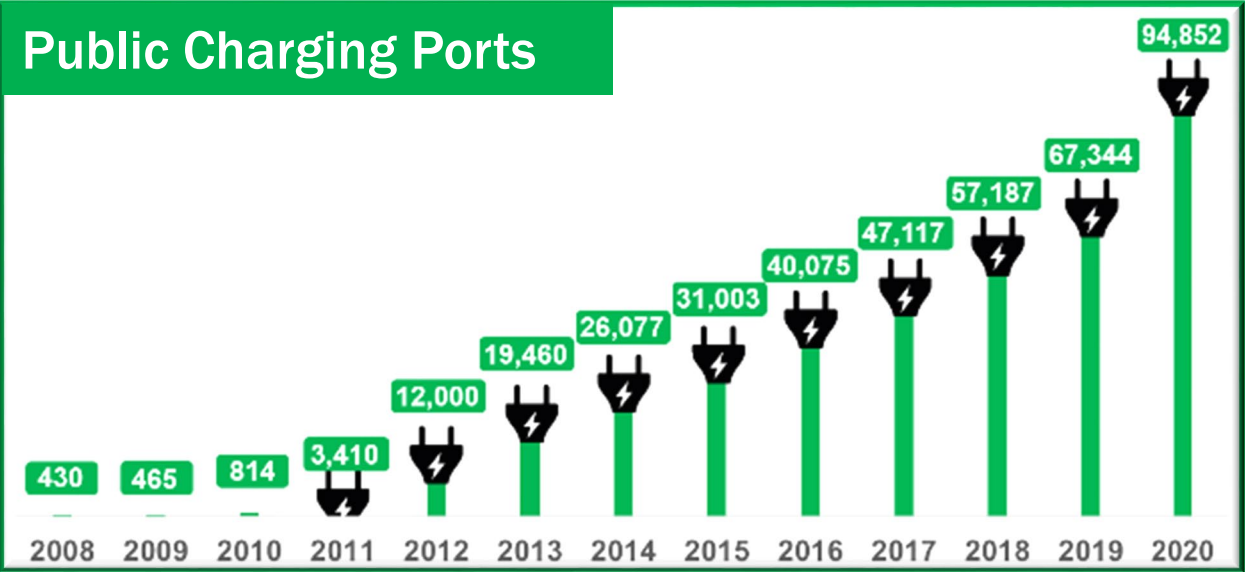
Federal Fleet Overview



Federal fleet adoption of EVs is low (0.3% BEVs and PHEVs, 0.4% low EVs) speed

Long-life vehicles, sedans, SUVs, and pickups represent best opportunities

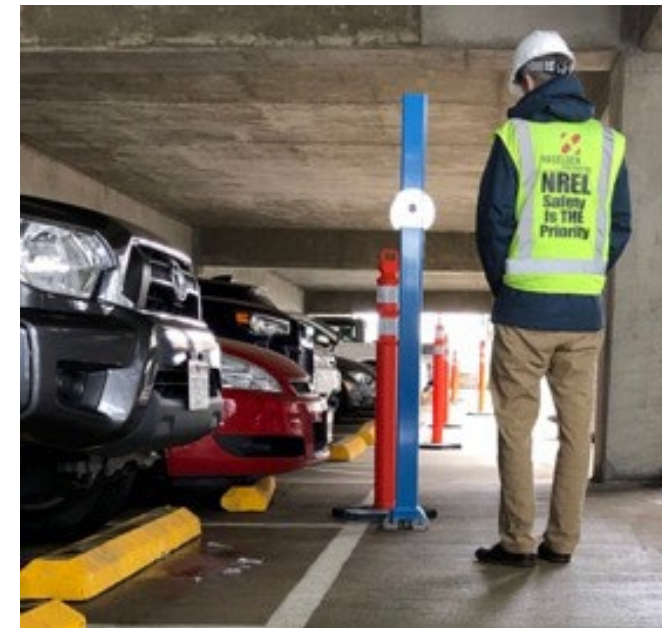
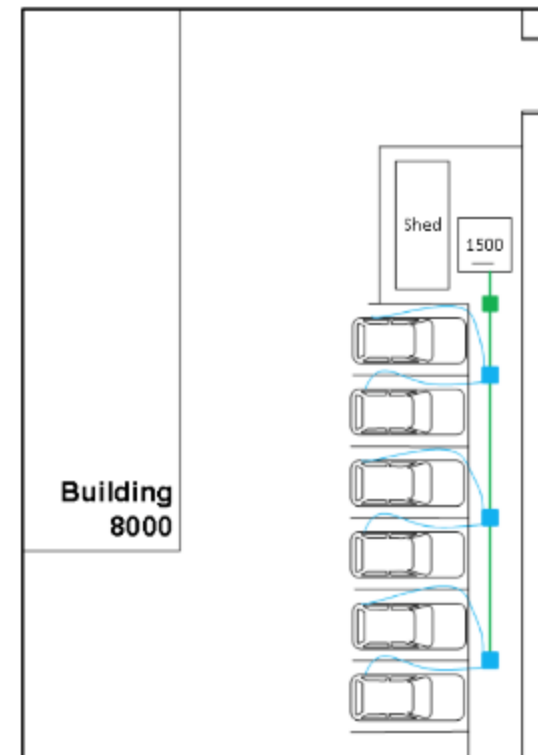
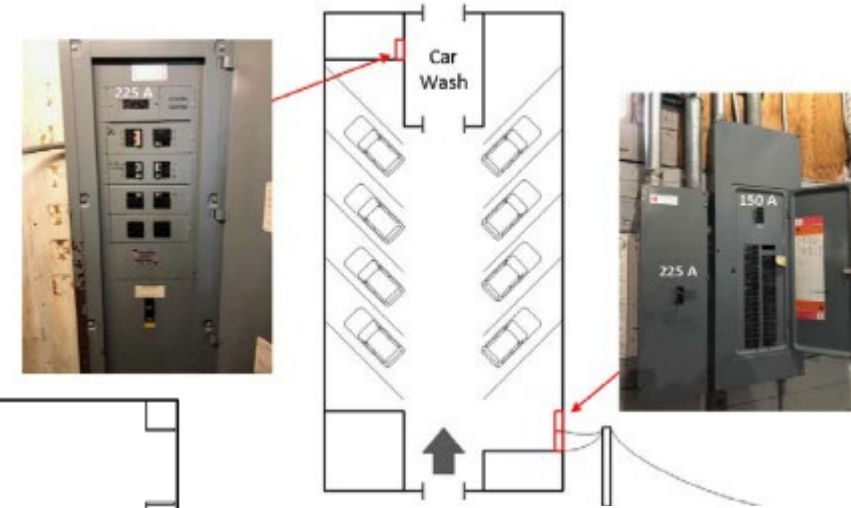
Only 3,000 federal EVSE charging ports, but nearly 100,000 available publicly



FEMP Tiger Teams

EV SMEs perform site assessments for EVSE

- Plan EV acquisitions and EVSE needs
- Assess electrical infrastructure capacity
- Determine necessary upgrades
- Propose installation plans



NREL Managed Workplace Charging

Over 100 workplace charging EVSE

- Parking garage serving growing demand
- Managed charging mitigates demand charges
- Adaptive structure promotes charge flexibility



Managed charging reduces costs

- Power ceiling mitigates upgrade needs
- User inputs support charge scheduling
- Energy shifting reduces net peak demand

FEMP EV Champion Training Curriculum



EV Technology

- ICE, HEV, PHEV, BEV
- L1, L2, DCFC
- FAST VLD Reporting



EV Financials

- EV TCO calculations
- Utility bill analysis
- FAST EVSE reporting



EVSE & Energy

- EVSE charging/install
- Electric service review
- EVSE cybersecurity



Site Design

- Equipment requirements
- Construction planning
- Utility interconnection



Site Operations

- Construction details
- Special considerations
- Managed charging

Training 1

Training 2

Training 3

Training 4

Detailed Fleet Analysis

- Perform telematics analysis to determine optimal paths for fleet electrification.
 - BEV financial and operational feasibility based on daily VMT
 - EVSE:EV infrastructure ratio based on coincident charging needs

BEVs Available by Vehicle Class

Tier 1

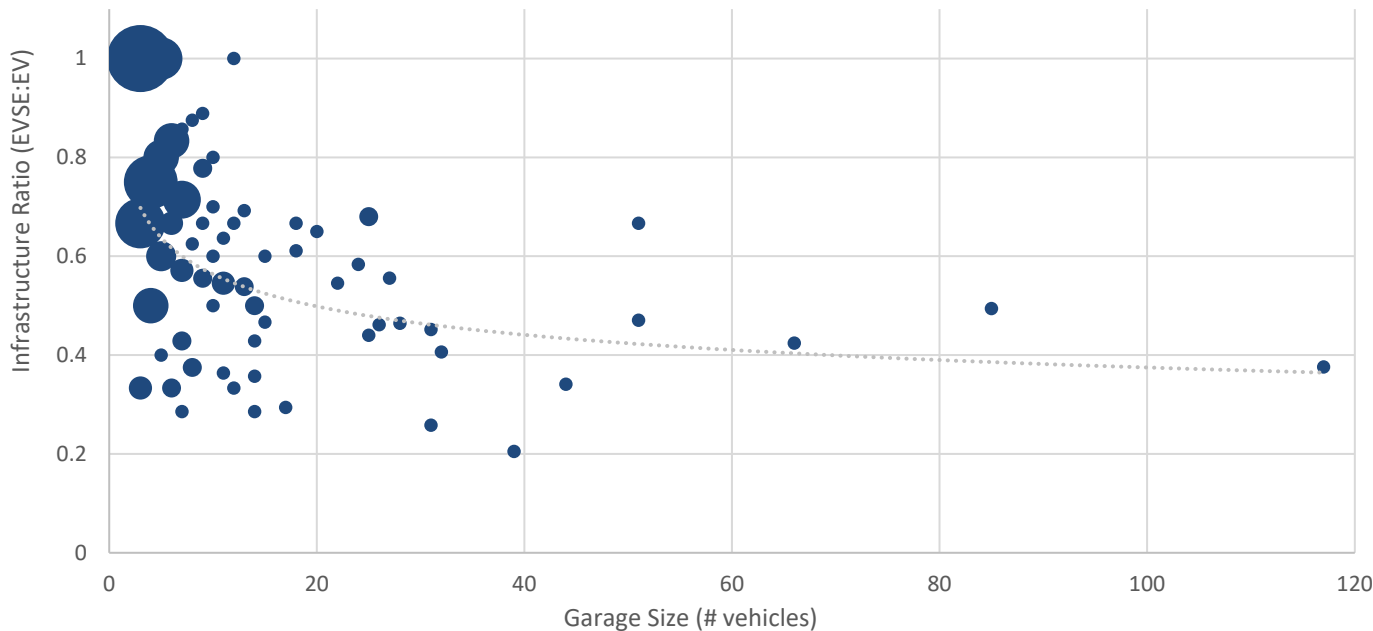
- ✓ 5 or fewer midday charges per year
- ✓ >\$500 annual operating cost savings*

Tier 2

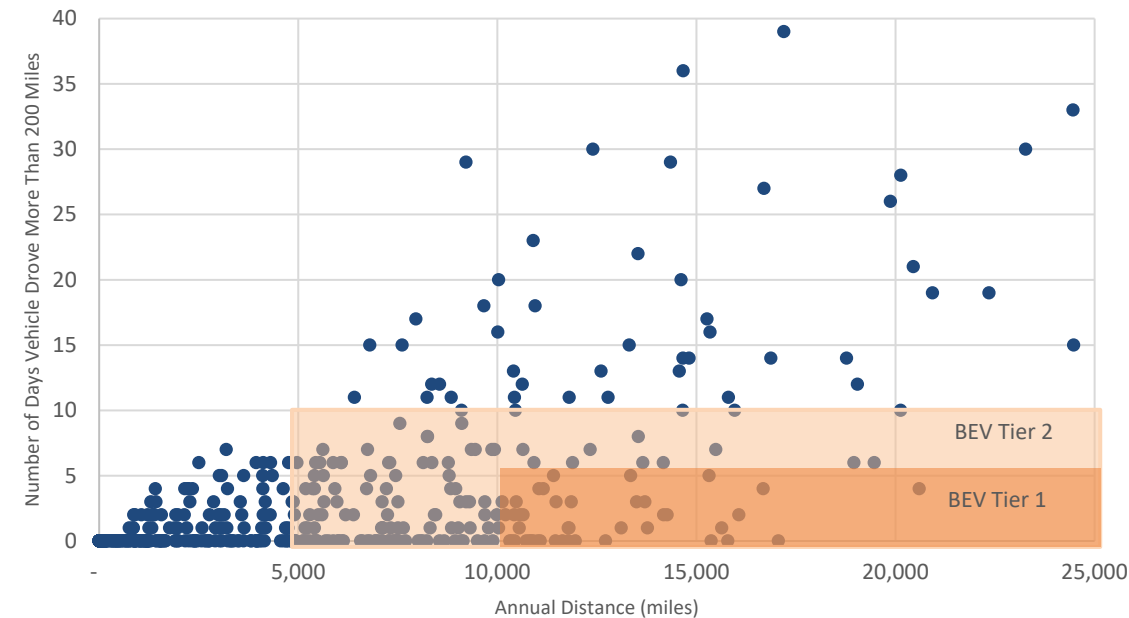
- ✓ 10 or fewer midday charges per year
- ✓ Positive annual operating cost savings*

*costs include monthly and mileage lease rates and electricity costs

Infrastructure Ratio



BEV Tier 1 and Tier 2 Opportunities



Simplified Planning Tools

Fleet DASH

- Full-fleet analysis tool applying reported vehicle-level-data to highlight acquisition opportunities for operational savings and reduced GGEs.

Fiscal Year 2020 Light-Duty Vehicle Data				Estimated Petroleum GGEs Reduced*			
VIN	Tag	Vehicle Segment	Total GGEs	BEV	PHEV	HEV	E85
		Sedan/St Wgn Subcompact	159	159	118	72	N/A
		Sedan/St Wgn Compact	151	151	115	56	N/A
		Sedan/St Wgn Compact	145	145	110	54	N/A
		Sedan/St Wgn Compact	135	135	95	31	N/A
		Sedan/St Wgn Compact	128	128	90	29	N/A
		Sedan/St Wgn Compact	126	126	89	29	N/A
		Sedan/St Wgn Compact	118	118	89	44	N/A
		Sedan/St Wgn Compact	108	108	76	25	N/A
		Sedan/St Wgn Compact	107	107	81	40	N/A
		Sedan/St Wgn Compact	102	102	77	38	N/A

* GGEs reduced compared to a base case where prior year GGE consumption is all petroleum use.

Showing 1 to 10 of 200 entries

Previous 1 2 3 4 5 ... 20 Next

Primary Metrics:

1. Prior year GGEs
2. GGEs reduced
3. Annual operating cost savings

Estimated Annual Operating Cost Savings:

	> \$500
	> \$250
	> \$0 - \$250
	Added costs

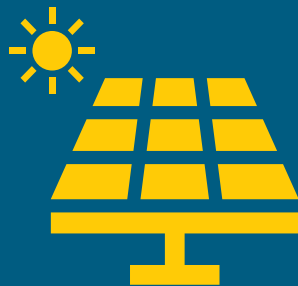
Looking Toward the Future

What benefits could bi-directional charging provide fleets pursuing electrification?

EVs as mobile storage for resiliency? (V2B)



Maximize use of on-site generation? (V2B)



TOU rates and grid services in the future? (V2G)



- Possible financial benefits
 - Dual-use: fleet vehicle and energy storage for outages
 - Increase value of on-site generation by reducing net demand
 - Possible revenue from ancillary services such as frequency regulation



VIRTUAL FEDERAL UTILITY PARTNERSHIP WORKING GROUP SEMINAR

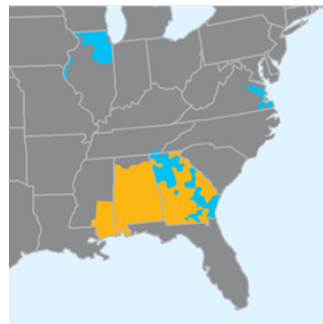
May 5-6, 2021

Utility Partnerships for Fleet Electrification

Monica DeAngelo
Southern Company



Southern Company Provides Solutions Across the US



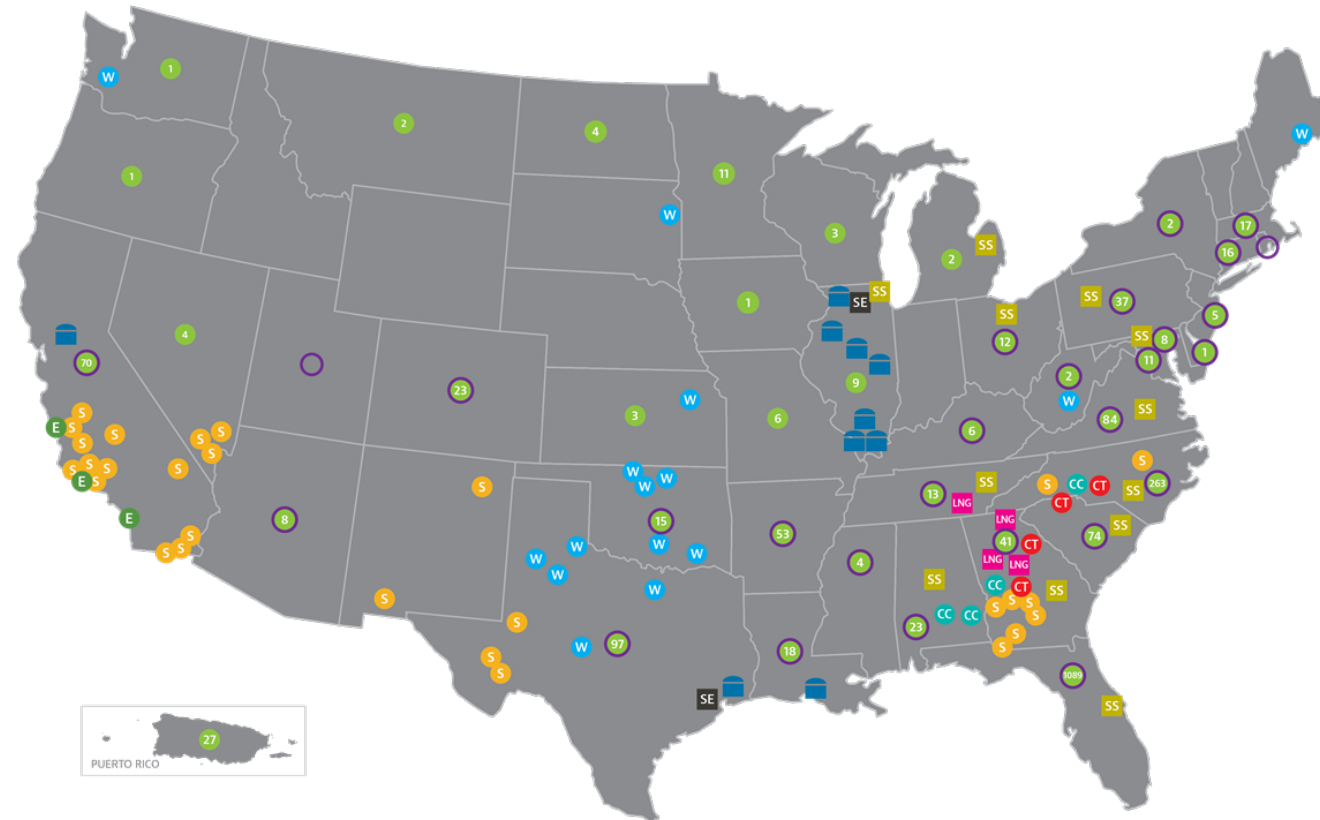
Service territories

- Electric
- Gas



Gas pipelines

- Southern Natural Gas
- Southern Company Gas
- Pipeline projects



Southern Power

- CC Combined-cycle facility
- CT Peaking facility
- S Solar facility
- W Wind facility
- E Energy storage

Southern Company Gas

- LNG LNG facilities
- SE Sequent Energy Management
- SS SouthStar
- Natural gas storage

PowerSecure

- # Owned and/or managed sites per state
- Service coverage network

Capabilities in
50 States

7
Electric & Natural
Gas Utilities

9 Million
Customers

Approximately
28,000
Employees

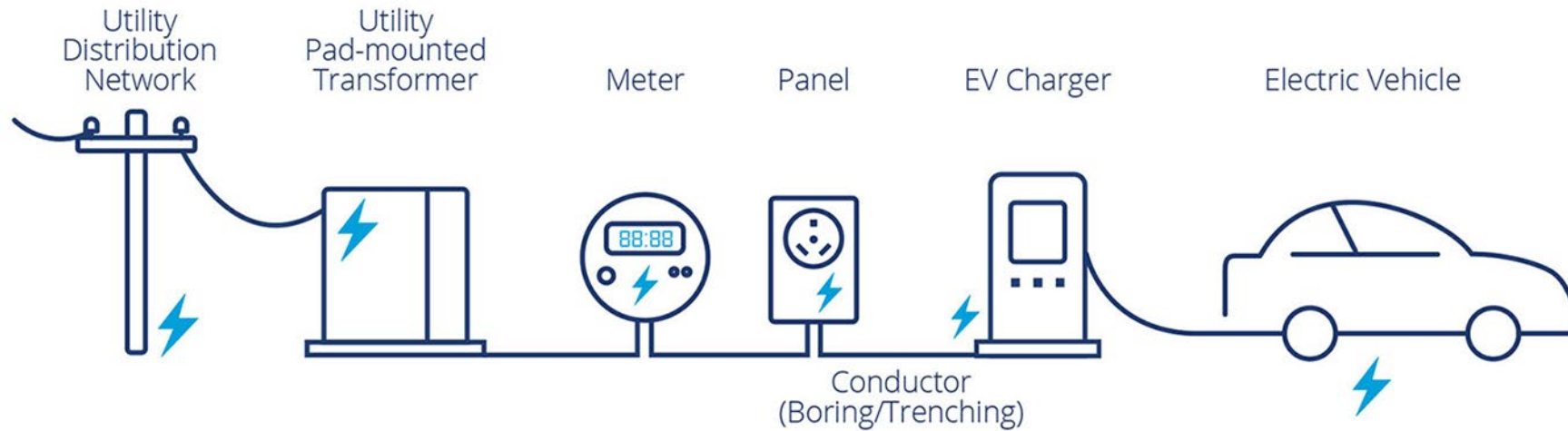
Approximately
42,000 MW
of Generating Capacity

April 20, 2021

Virtual Federal Utility Partnership Working
Group
May 5-6, 2021

Utility Partnership for Electrification Requirements

Turn-key packaged solution provides reliable, resilient and sustainable service



Integrated requirements on both sides of the meter



Subject
Matter
Expertise



Requirements
Analysis



Engineering &
Design



Construction



Financing/
Activation/
Account Mgmt



Utilization/
Maintenance

Virtual Federal Utility Partnership Working Group
May 5-6, 2021



Execution of Electrification Requirements

GSA AreaWide Contracts (AWCs) – Exhibit A

- Authorized under 40 USC 501 for up to 10 year term
- Govt must specify:
 - Ownership requirements and term
 - Required real estate actions
 - Cyber compliance
 - Funding type, payment frequency (one-time upfront, monthly, annually) and mechanism (on-bill, etc.)

Proposed Process (FEEDBACK WELCOME!):

- Govt to generate requirement (in consultation with Utility Service Company (USC))
- Govt to translate requirement into scope of work (SOW)
- Govt to confirm GSA AWC in place and available to execute SOW with USC
- Govt to reach out to USC/utility account manager to confirm execution options under Exhibit A
- Govt to send SOW to USC/utility account manager
- Utility account manager to validate feasibility of SOW, request data and conduct further analysis (load and flow, interconnection, etc.)
- Utility account manager to identify any rebates/incentives/rate-based programs that align to SOW
- USC to provide turn-key proposal to Govt with payment/financing options
- Govt to acknowledge and accept proposal
- Govt contracting officer to issue task order under Exhibit A for agreed upon work

Questions and Feedback

Monica DeAngelo

Director, Federal Partnerships

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(703) 298-0863

VIRTUAL FEDERAL UTILITY PARTNERSHIP WORKING GROUP SEMINAR

May 5-6, 2021

TVA Considerations for EV at Federal Sites

Presented by:
Ruchi Singhal, TVA

Hosted by:



TVA - What We Are

- Provider of affordable, reliable power
- Steward of the Valley's natural resources
- Partner for economic growth



“Power is really a secondary matter.... TVA is primarily intended to change and to improve the standards of living of the people of that valley. Power is, as I said, a secondary consideration. Of course, it is an important one because, if you can get cheap power to those people, you hasten the process of raising the standard of living.”

President Franklin D. Roosevelt

What We Do

- Serve 7 states, 57 directly served customers, 153 local power companies and 80,000 square miles
- Federal customers include 6 large directly served facilities and numerous local power company served facilities
- Manage the Valley's river systems and environmental resources
- No taxpayer funding; rather our revenues come from sales of electricity.
- TVA Board appointed by the President of the United States and confirmed by the U.S. Senate



“Father of TVA,” Senator George Norris

TVA EnergyRight

- Demand Response
 - Provides 1,700 MW of reliable economical capacity while lowering rates through payments to industrial consumers for reducing demand during times of system need
- Electrification
 - Generates efficient load and revenue for LPCs and TVA through promotion of smart energy technologies that lower carbon footprints and boost bottom line for customers
- Energy Efficiency
 - Leverages the public power model to support Valley consumers, especially those in need to reduce energy costs and improve comfort and health



TVA's Federal Energy Services Program (FESP)

- Provides value-added energy services to federal partners to help them meet their mission while achieving energy goals
- Utilizes cost-effective Utility Energy Services Contract (UESC) vehicle to maximize benefit
 - Reduces operations and maintenance costs
 - Improves facilities and infrastructure
- Helps federal customers remain in the Valley and thrive!



How FESP Makes an Impact

FESP executes Utility Energy Services Contracts (UESCs) to help federal customers:

- Meet energy and water goals
- Improve aging infrastructure
- Take advantage of new technologies and innovation

Since 1998, FESP has performed more than 35 UESC projects saving the federal government more than \$150M.

Past & Current Projects:

- NASA Marshall Space Flight Center
- Redstone Arsenal
- Ft. Campbell
- Internal Revenue Service, Memphis, TN (\$12M)
- Naval Support Activity–Midsouth, Millington, TN (\$6M)

We build relationships.

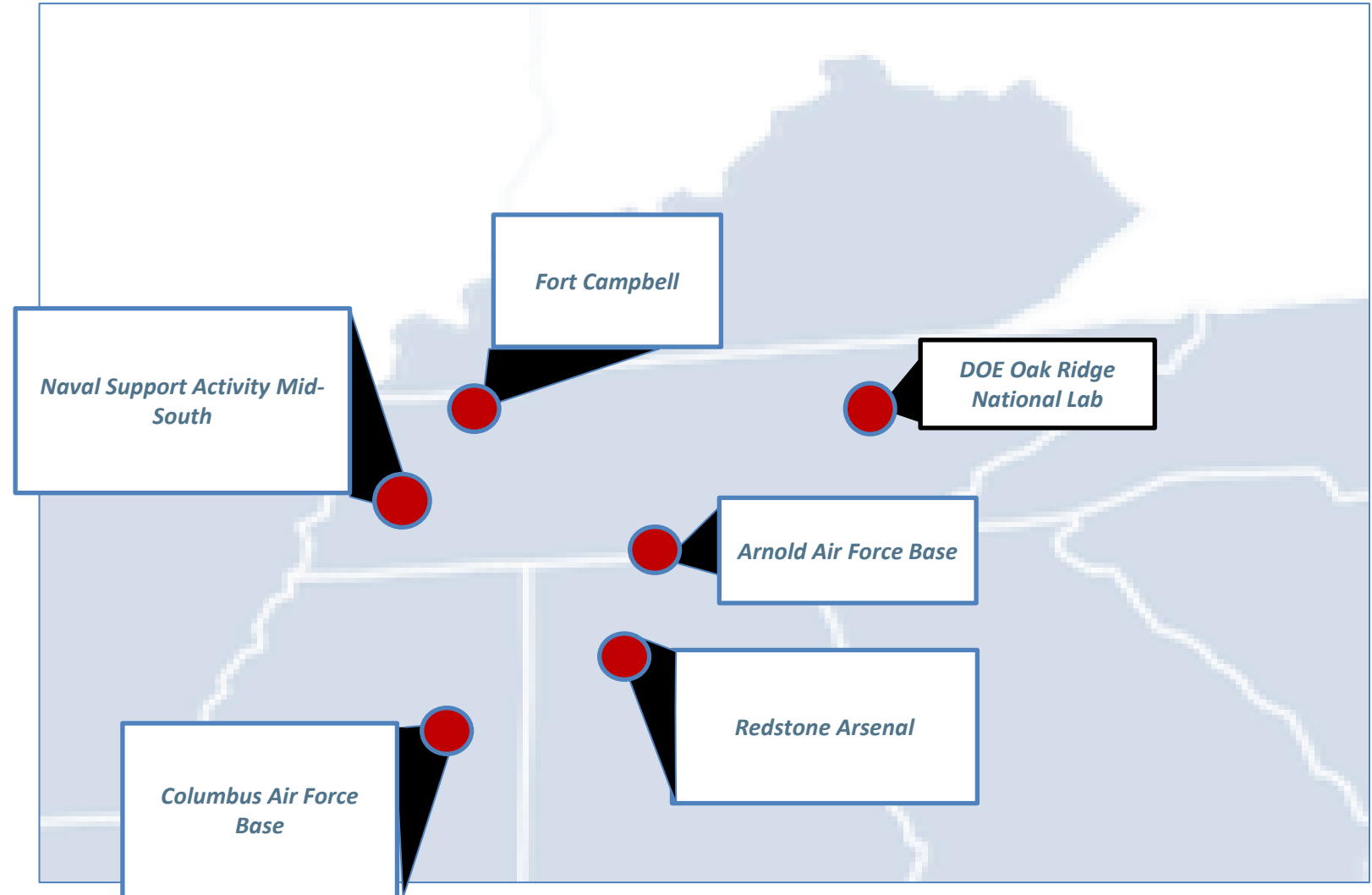
We develop an understanding of our customers' needs and build lasting relationships to help them succeed in the Valley.



U.S. Army Community Partnership Award
Recipients: Redstone Arsenal, TVA, Huntsville Chamber of Commerce

Our Federal direct-serve customers

These six direct serve federal customers deliver a combined \$33 Billion in economic impact and over 210,000 jobs



Federal Fleet Numbers

Tennessee Federal Sites:

- Naval Support Activity – MidSouth
- Ft. Campbell
- Arnold Air Force Base
- Oak Ridge National Laboratory

Our focus will be to interview these sites and learn about their shift to sustainable fleets

	Tennessee Federal Fleets
Ambulances	9
Buses	58
HD	818
LD 4x2	4,500
LD 4x4	1,781
LSEVs	16
MD	1,872
Sedans/St Wgns	1,559
TOTAL	10,613

Pros and Cons of EV



- Pros

- Fuel cost savings
- Reduced Maintenance
- Drivers satisfaction

FOR FEDERAL CUSTOMERS

- Meeting mandates for carbon reduction and EV adoption
- Utilities could provide
 - Advisory Services
 - EV Charging Infrastructure
 - EV Charging Rate

- Cons

- Slow fueling time
- Servicing difficulties
- Reduces Payload

FOR FEDERAL CUSTOMERS

- Fleet purchase delays
- Less than 1% of current Federal fleets are electric

Creating Useful Programs for Customers



Conduct Focus Groups,
Interviews and Surveys



Benchmark Best Practices
and Other Programs



Design Program



Implement Pilot Program



Analyze Data and Refine

TVA Future Plans for Electric Vehicles for Fleets

- Focus on Buses and Low-Duty Fleets (i.e. passenger cars and last mile trucks)
- Thinking of ways to incentivize
 - Rebates
 - Education/training
- TVA is releasing an RFI for third party companies who could provide education OR optimization
- October 2021 is the plan for release



Thank you!

Ruchi Singhal

rgsinghal@tva.gov

256-684-1956

VIRTUAL FEDERAL UTILITY PARTNERSHIP WORKING GROUP SEMINAR

May 5-6, 2021

State of Hawaii

Department of Transportation, Highways Division

ELECTRIC VEHICLES AND CHARGING INFRASTRUCTURE SERVICES

Hosted by:





Statewide, Multi-agency Service Contract

- Objective was fleet electrification statewide to reduce use of petroleum in ground transportation
- RFP was issued in Dec 2019 for electric vehicles and charging infrastructure
- Award was made to Sustainability Partners Feb 2020 and NTP received Dec 2020
- Available for use by State Executive Branches, Counties and other State Government Agencies

Contract Information

- Contract Type
 - This is an Indefinite-Quantity contract based on a service to be provided on an as-required basis with no minimum amount of services required.
 - Each service (electric vehicle and/or charging infrastructure) will be issued a Service Addendum
 - 10-year period
 - Service Addenda can be issued at anytime during the contract period. Usage fee will depend on type of vehicle, charger infrastructure and annual miles driven.
 - Each Service Addendum will require a Notice to Proceed and Notice of Acceptance to ensure it meets the Department/Agencies needs.



Contract Benefits

- Departments/Agencies can convert light duty fleets to EVs without having the capital upfront.
- Take advantage of bulk purchasing and savings, including cost sharing for charging infrastructure between Departments/Agencies.
- Take advantage of tax credits, rebates and other incentive programs.
- Contractor can obtain EVs from multiple vendors – Nissan, Ford, Kia, General Motors, VolksWagen, Lordstown, Tesla, etc.
- Service Addendum can be executed to add new vehicles (trucks) and technology as they become available.

Fleet Electrification – What's Next?

- HDOT Highways Division is committed to converting or right-sizing its light duty fleet as they reach the end of useful service
- Advocate for decarbonization of government fleets by showing the benefits and making the contract details easy to find
<https://hidot.hawaii.gov/highways/electric-vehicles/>
- Continue to work with partners to improve charging infrastructure through initiatives such as alternative fuel ready corridors and by making select HDOT fleet chargers available to the public



Utility Partnerships for Fleet Electrification

Thank You!



Jesse Bennett
Research Engineer
NREL



Ruchi Singhal
*Sr. Program
Manager*
TVA



Monica DeAngelo
*Director, Federal
Partnerships*
Southern Co



Ed Sniffen
Deputy Director
State of Hawaii Department of
Transportation



Dr. Ashley
Pennington
AAAS STPF Fellow
FEMP, DOE

FEDERAL UTILITY PARTNERSHIP WORKING GROUP VIRTUAL SEMINAR

May 5-6, 2021

Civilian Agency Priorities, Policies, Best Practices and Other Updates

- Catherine Johnson, Veterans Affairs
- Marc Wolff, Bureau of Prisons
- Mike Sandler, Drug Enforcement Administration



The background features abstract, overlapping green geometric shapes in various shades of green, creating a modern and dynamic look. The shapes are primarily located on the left and right sides of the slide, framing the central text.

Department Of Veterans Affairs Energy Management Program Service Energy Performance Contracting Program

FUPWG

April 2021

VA Energy Performance Contracting

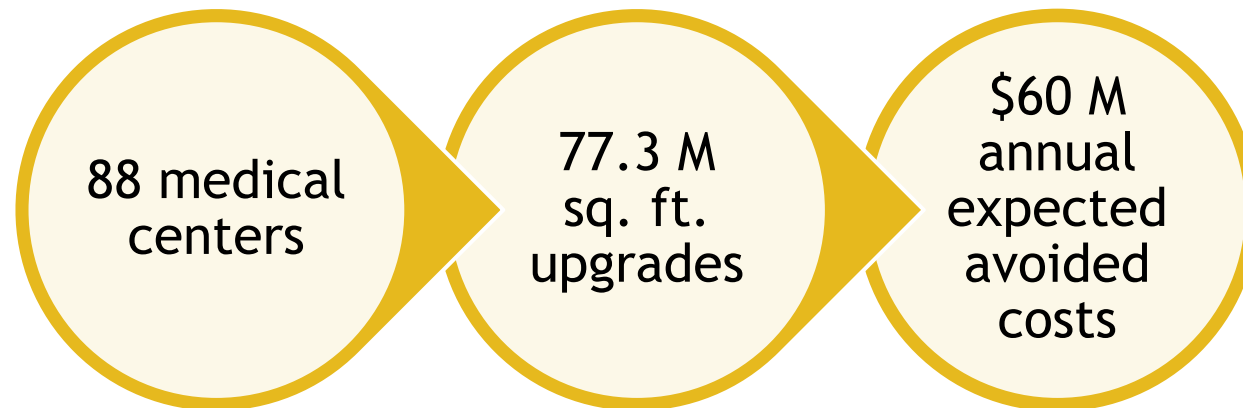
- ▶ Centralized program and contracting offices
 - ▶ Standardization of processes
 - ▶ Consistent contract protections and oversight for VA facilities

VA's SDVOSB IDIQ

- ▶ Developed by PCAC - adapted the DOE IDIQ with VA specifics and SDVOSB requirement
- ▶ Initial awards May 21, 2020 -Currently Awarded to
 - ▶ CTI-OES Joint Venture
 - ▶ TLS-CES Joint Venture
 - ▶ US2
 - ▶ Venergy-Brewer Garret Joint Venture

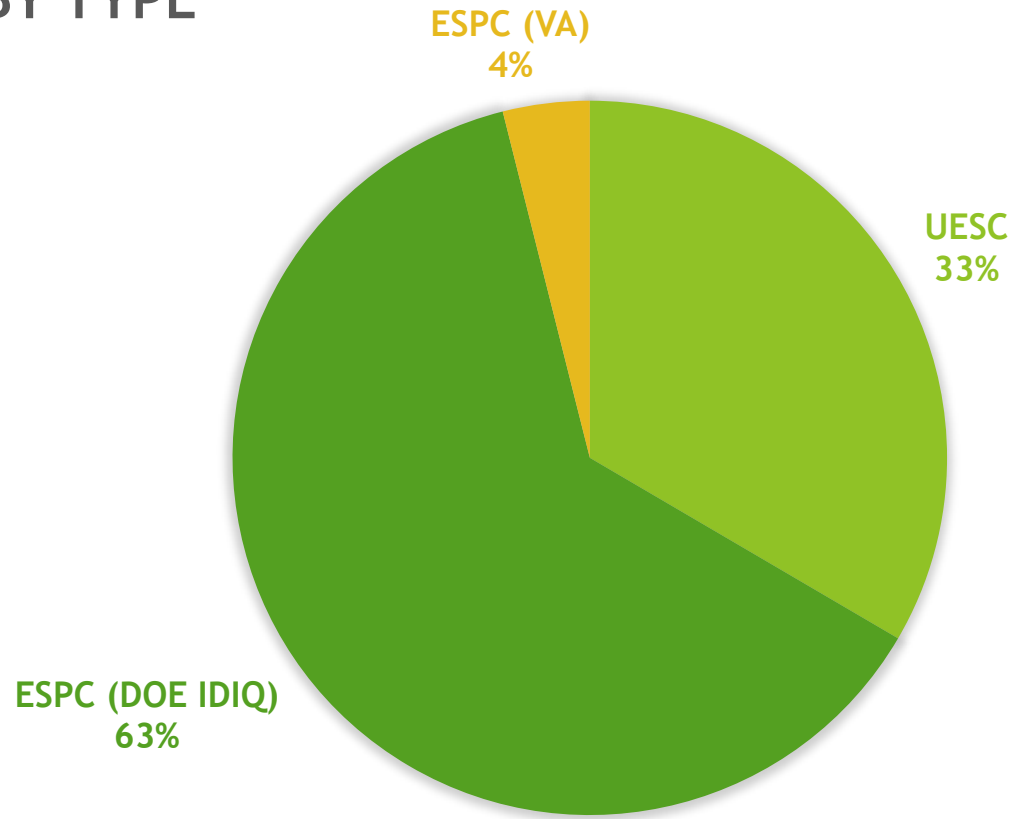
VA Energy Performance Contracting Achievements

\$1.1 B AWARDED TO DATE

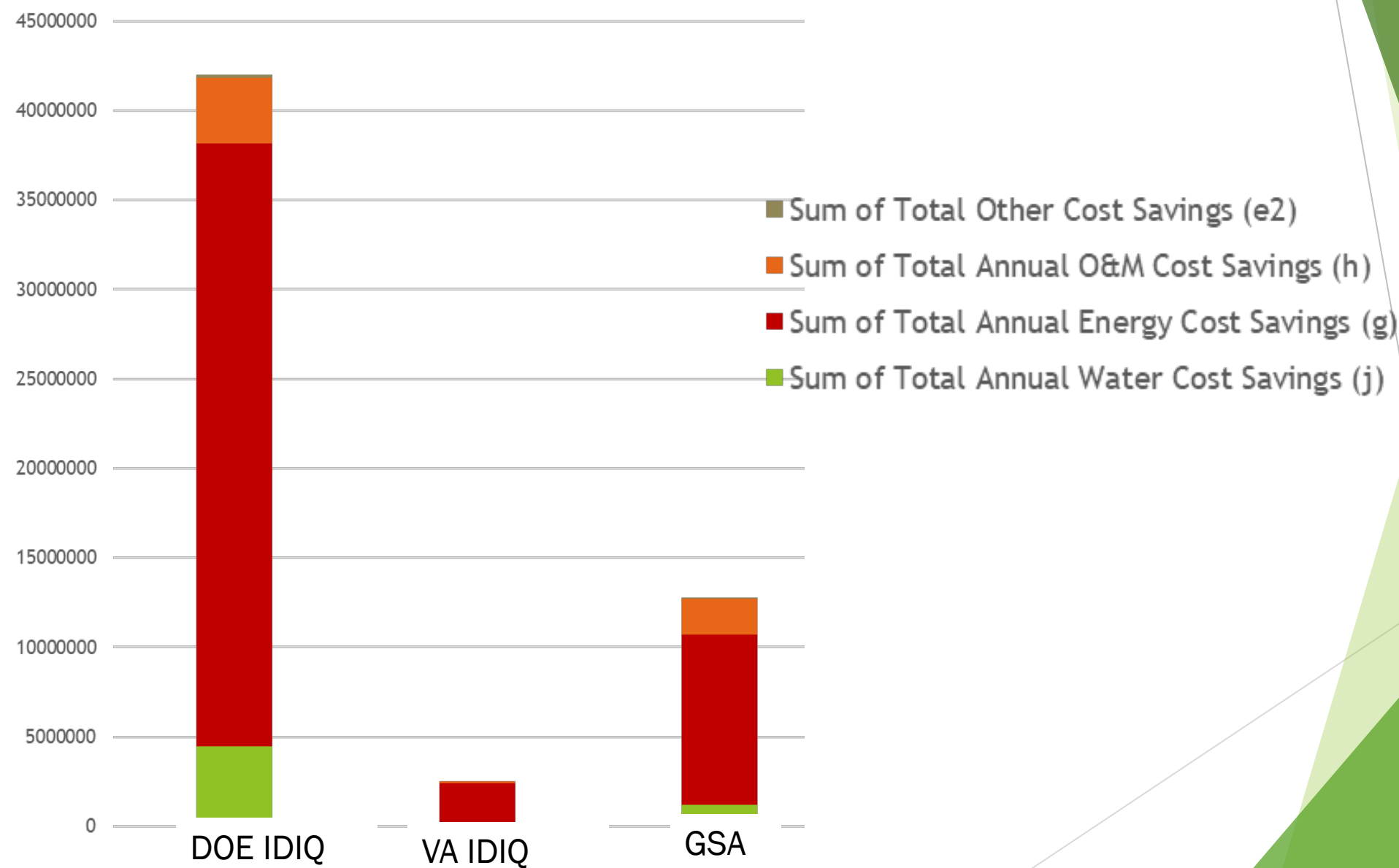


VA Energy Performance Contracting Achievements

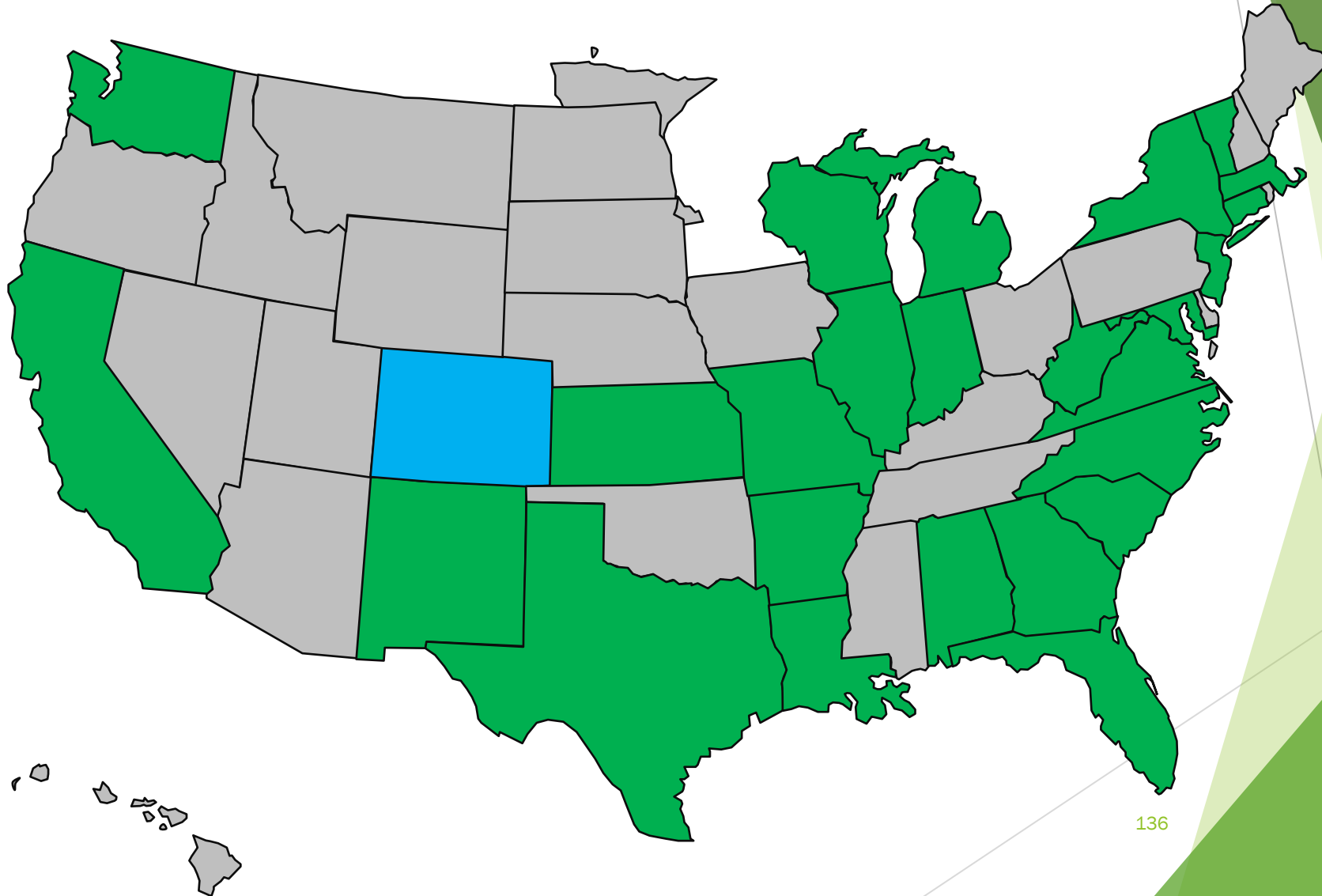
AWARDS BY TYPE



VA Energy Performance Contracting Achievements



States with at least 1 VA Energy Performance Contract



Awarded

Developing

VA Best Practices for UESCs

- ▶ Use eProjectBuilder platform
- ▶ Require a Project Facilitator
- ▶ Require annual M&V
- ▶ Conduct feasibility study at risk
- ▶ Strive for performance guarantee

VA Program Office Contacts

CATHERINE JOHNSON

Energy Performance Contracting Team Lead

POC VISN 7, 8, 9, 12, 16

Catherine.Johnson7@VA.gov

BAYLA GEWIRTZ

POC VISN 1-6, 10, 15, 17-23

Bayla.Gewirtz@VA.gov

FEDERAL UTILITY PARTNERSHIP WORKING GROUP VIRTUAL SEMINAR

May 5-6, 2021

Civilian Agency Priorities, Policies, Best Practices and Other Updates

Marc Wolff
Chief of Facilities Programs
Federal Bureau of Prisons





Update for FUPWG

Drug Enforcement Administration

MIKE SANDLER, ENVIRONMENTAL MANAGEMENT SECTION

MAY 5, 2021

UESC in Net Utilities Leased Building



- ▶ DEA's first UESC at Miami Laboratory
- ▶ GSA had concerns about privately owned building (Net Utilities Leased Building)
 - ▶ Govt/third party paying for the upgrades to a privately owned building
 - ▶ who would own the upgrades if DEA left the building at the end of the lease



Lease Amendment for UESC



- ▶ Upgrades paid for by DEA, and savings recouped by end of lease.
- ▶ The building owner (Lessor) would take ownership, operate, and maintain the installed equipment and systems.
- ▶ Warranties for equipment were not able to transfer to owner, so DEA must act on behalf of the building owner as needed.
- ▶ Outcome: Other agencies can do UESCs at Net Utilities Leased Buildings.



Green Tariffs Update



- ▶ DEA's Western Laboratory signed on to PG&E Solar Choice (>1 million kWh in FY20)
- ▶ Pleasanton, California joining a new Community Choice Aggregator (CCA) called East Bay Community Energy (EBCE)
 - ▶ EBCE provided rate comparison for opt-out
- ▶ DEA also on waitlist for SDG&E Eco Choice and FPL Solar Together

The image displays three screenshots of utility websites related to green energy programs. The top screenshot is the SDG&E EcoChoice website, featuring a header with navigation links (Languages, Outages, NewsCenter, Wireline Safety, Contact) and a main banner with the text "Choose 100% Renewable Energy Now With **ecochoice**®" and a "Español" button. Below this is a comparison table for PG&E SolarChoice titled "Which program is best for your home?". The table compares "Solar Choice" and "Regional Renewable Choice" based on "Program description". The bottom screenshot is the FPL Solar Together website, showing a header with "Solarize", "Enroll", and "Report" buttons, and a main banner with the text "A brighter future we can all share" and a "LEARN MORE" button.

	PG&E SolarChoice	FPL Solar Together
Program description	A simple way to purchase more solar energy through PG&E than we provide in our regular	A simple way to purchase renewable energy through a local renewable energy developer.



Thanks!

Michael.J.Sandler@usdoj.gov

VIRTUAL FEDERAL UTILITY PARTNERSHIP WORKING GROUP SEMINAR

May 5-6, 2021

Demystifying UESC Data: Accessing, Reporting, and Using FEMP Data Resources

Adam Vucelich, ORNL



Agenda

- Publicly available data
 - Where does it come from?
 - What data is relevant for UESC programs?
 - How to access public data
- Streamlined data reporting
 - eProject Builder UESC template
 - CTS Upload
- Using CTS Data for Market Potential
 - Facility level data (example)
 - Service territory data (example)

Publicly Available Data Sources

- EISA 432 requires federal agencies to identify “covered facilities” that constitute at least 75% of their total energy use
- A comprehensive evaluation for each covered facility must be completed at least once every 4 years
- Potential life-cycle cost-effective ECMs and implementation costs are identified during evaluations and reported to the EISA 432 Compliance Tracking System (CTS)
- Publicly Available Data from CTS is accessible:
 - **Agency aggregates**, representing all reported data subject to the EISA 432 requirements
 - **Facility-level detailed data** that excludes information for facilities that have requested exemption from public disclosure for national-security purposes



Key Resource

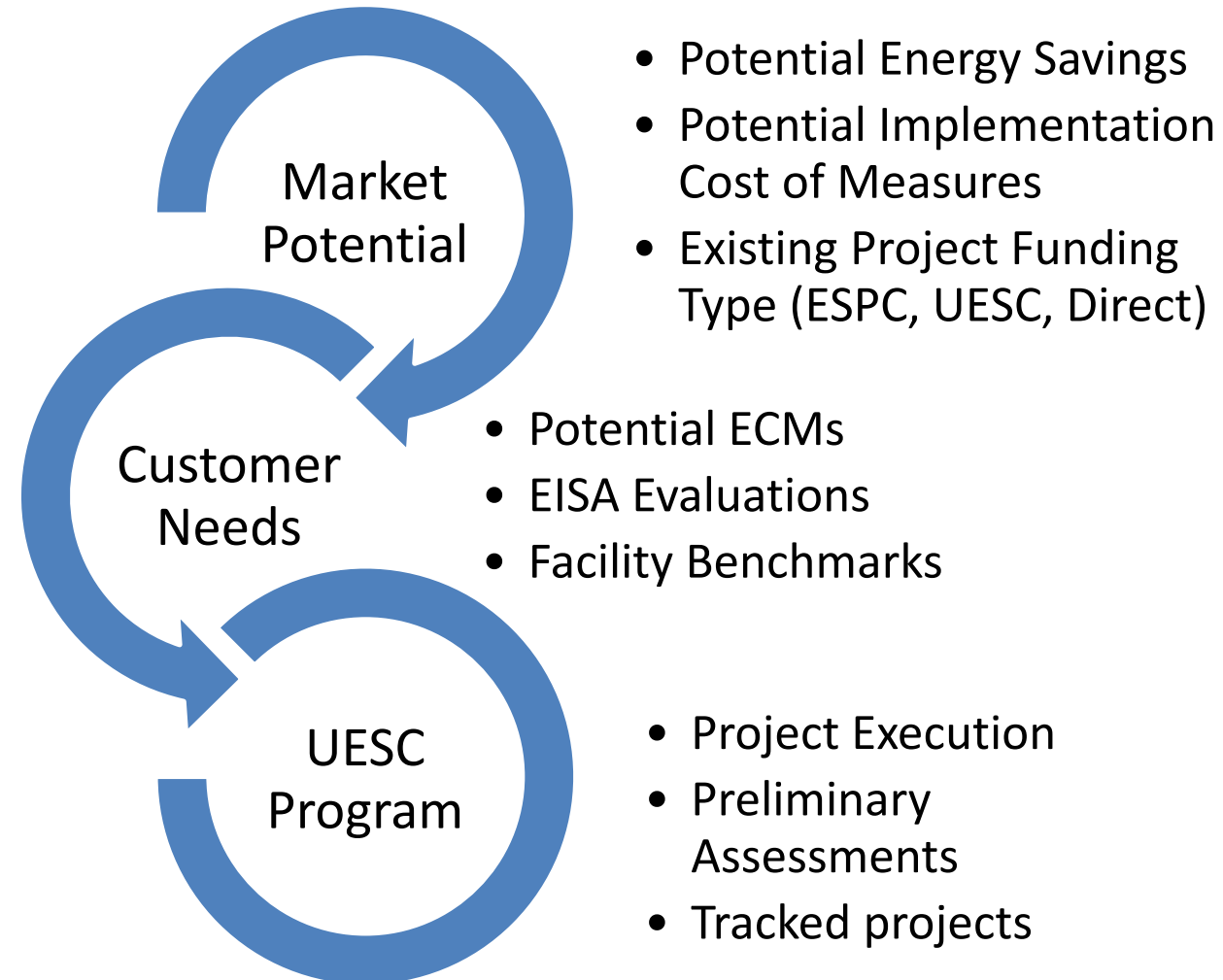
EISA Federal Covered Facility Management and Benchmarking Data

<https://www.energy.gov/eere/femp/eisa-federal-covered-facility-management-and-benchmarking-data>

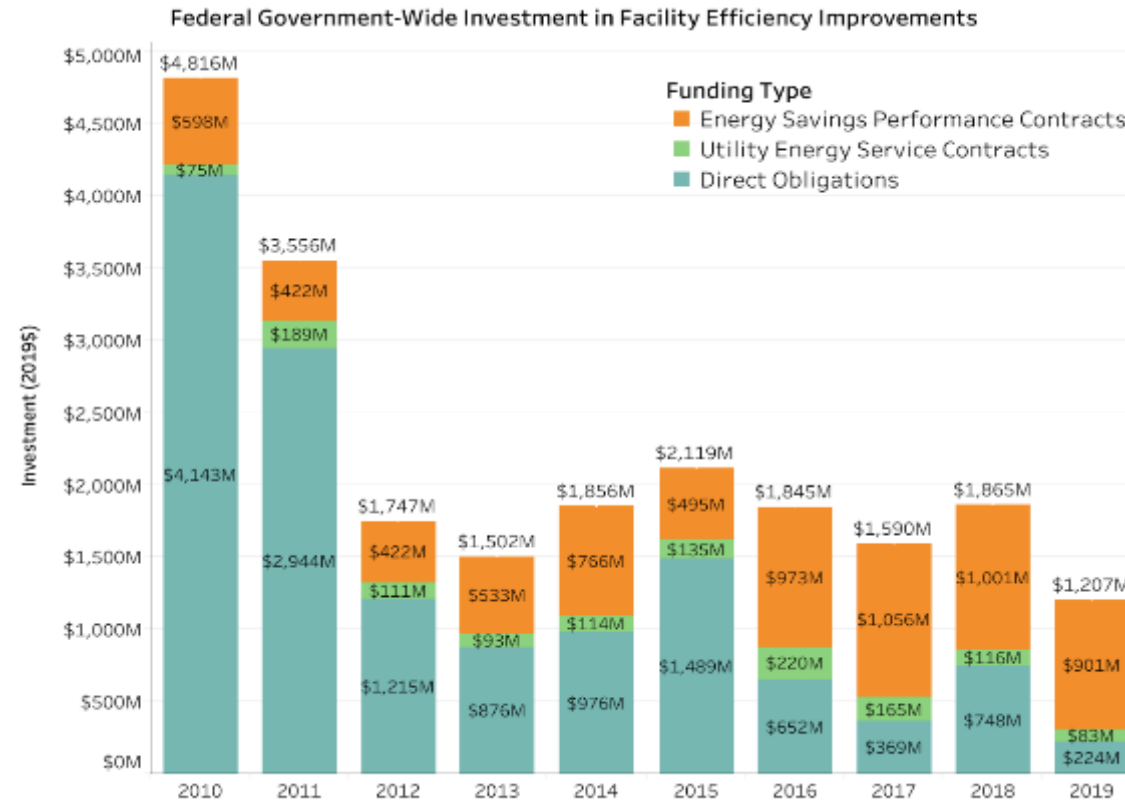
Accessing Publicly Available CTS Data

- Office of Federal Sustainability Website
 - Federal aggregate data
 - https://www.sustainability.gov/government_data.html#investment
- FEMP's Comprehensive Annual Energy Data and Sustainability Performance data site
 - Agency aggregate data
 - <https://ctsedweb.ee.doe.gov/Annual/Report/Report.aspx>
- Compliance Tracking System Data Warehouse
 - Facility level detail
 - <https://ctsedweb.ee.doe.gov/CTSDDataAnalysis/ComplianceOverview.aspx>

Relevant UESC Data in CTS



Federal Aggregate Data



FEMP Resource!

https://www.sustainability.gov/government_data.html#investment

Agency Aggregate Data

Facility Investment, Gross Square Footage, Other Metrics

Read more...

G-1 Investment in Energy Efficiency and Renewable Energy

G-2 Agency Investment in Efficiency and Conservation Projects by Funding Type

G-3 Federal Facility Gross Square Footage (GSF) by End-Use Sector

G-4 Agency Progress Towards Electricity Metering Goals Excel File

G-5 Agency Progress Towards Natural Gas Metering Goals Excel File

G-6 Agency Progress Towards Steam Metering Goals Excel File

G-7 Agency Compliance with New Building Performance Standards Excel File

References

Agency facility efficiency investments are submitted to DOE-FEMP through Annual Energy Data Reports. Details and background data can be found on FEMP's Comprehensive Annual Energy Data and Sustainability Performance data site.

Report Filter/Options

Fiscal Year: 2019

Agency: ---- All Agencies ----

Dollar Adjustment: Unadjusted Dollars

Agency	Funding Mechanism			Total Investment (Thou. \$)
	Direct Obligations (Thou. \$)	ESPC (Thou. \$)	UESC (Thou. \$)	
Veterans Affairs	\$36,714	\$30,418	\$52,434	\$119,567
Energy	\$8,418	\$31,871	\$0	\$40,288
EPA	\$33,449	\$0	\$0	\$33,449
Justice	\$1,559	\$25,418	\$0	\$26,977
NASA	\$7,525	\$13,998	\$4,662	\$26,185
Interior	\$14,116	\$0	\$87	\$14,203
HHS	\$12,374	\$0	\$0	\$12,374
GSA	\$7,915	\$941	\$0	\$8,856
TVA	\$4,908	\$0	\$0	\$4,908
Agriculture	\$4,300	\$0	\$0	\$4,300
USACE	\$4,091	\$0	\$0	\$4,091
SSA	\$3,257	\$0	\$0	\$3,257
Transportation	\$2,788	\$0	\$0	\$2,788
State	\$0	\$0	\$1,700	\$1,700
Labor	\$1,619	\$0	\$0	\$1,619
Treasury	\$120	\$500	\$0	\$620



FEMP Resource!

<https://ctsedweb.ee.doe.gov/Annual/Report/Report.aspx>

Virtual Federal Utility Partnership Working Group

May 5-6, 2021

UESC Data Management & Reporting

- Federal agencies are required to report performance contracting investments such as UESCs
- Utilities can be pro-active in helping your customer report UESC project info by utilizing the eProject Builder (ePB) project templates



FEMP Resource!

[Guidance and Recommendations for Streamlining Reporting for Federal Energy and Water Efficiency Projects](#)

FEMP Recommends eProject Builder (ePB)




- Web based project tracking and archiving system developed and maintained by Lawrence Berkley National Lab (LBNL)
- Satisfies recommended reporting requirements & currently being enhanced to seamlessly upload data into the Compliance Tracking System (CTS)
- ePB is a shared workspace for UESC providers and customers to develop, approve, and track projects during performance period
- Utility (or ESCO partner) may be designated “project builder” to populate project data and submit documentation for approval



ePB User Guide

https://eprojectbuilder.lbl.gov/assets/help/eProject_Builder-UESC_User_Guide.pdf

How to use ePB for UESC Projects

Customer “Project Initiator”	Utility Team “Project Builder”	Other Stakeholder “Project Viewer”
 <ul style="list-style-type: none">• Registers• Initiates project• Reviews project data• Approves submitted project• Unlocks project for revision, if necessary• Invites Project Viewer(s)	 <ul style="list-style-type: none">• Registers• Enters project data• Reviews project data with customer• Submits project for approval• Revises project data, if necessary• Invites Project Viewer(s)	 <ul style="list-style-type: none">• Registers• Views project information, only when invited

(Even if you do not use the ePB system, the excel templates are available for project development and can be used to standardize data submissions)

ePB UESC Project Templates

- DOE IDIQ ESPC generation 3 projects are required to use ePB
- UESC projects are encouraged to use ePB and templates can help UESC proposals be TO-ready
- TO schedules in the ePB UESC template are:
 - ☐ Summary Schedule
 - ☐ Annual Escalation Rates
 - ☐ Sch1 – Ann Cost Sav & Pymts- UESC
 - ☐ Sch2a – Imp Price by ECM
 - ☐ Sch3 – Perf Period Cash Flow
 - ☐ Sch4 – Cost Savings by ECM
 - ☐ Sch5 – Cancellation Ceilings

ePB calculating vs non-calculating templates

- Both templates are available to download in excel
 - **Calculating Template**
 - This version of the data upload template provides automated amortization calculations for financed project, for developing project financial scenarios
 - **Non-Calculating Template**
 - This version of the data upload template provides no calculations. All information must be entered manually



ePB Data Templates

<https://eprojectbuilder.lbl.gov/help>

What UESC Data Should be Reported?

Project Proposal Data

Project proposal fields common to ePB and CTS
Agency Name (cabinet level)
Project Name
Project ID
Date of project contract signing
Total project implementation cost (financing)
Total performance period expenses
Total project cost (exc. financing)
Contract term (years)
Annual estimated energy savings (MMBtu)
Estimated Annual Savings – electricity (kWh)
Estimated Annual Savings – natural gas (MMBtu)
Estimated Annual Savings – water use (kGal)
ECM – technology category

Performance Period Data

M&V Fields common to ePB and CTS
Project acceptance date
Award date
M&V report date
M&V option
M&V report approval date
M&V report reviewed date
Verified annual savings – electricity use (kWh)
Verified annual savings – natural gas (MMBtu)
Verified annual savings – other energy (MMBtu)
Verified annual savings – water use (kGal)

Summary of ePB Reporting (Option 1)

Option 1: Manage your project in eProject Builder

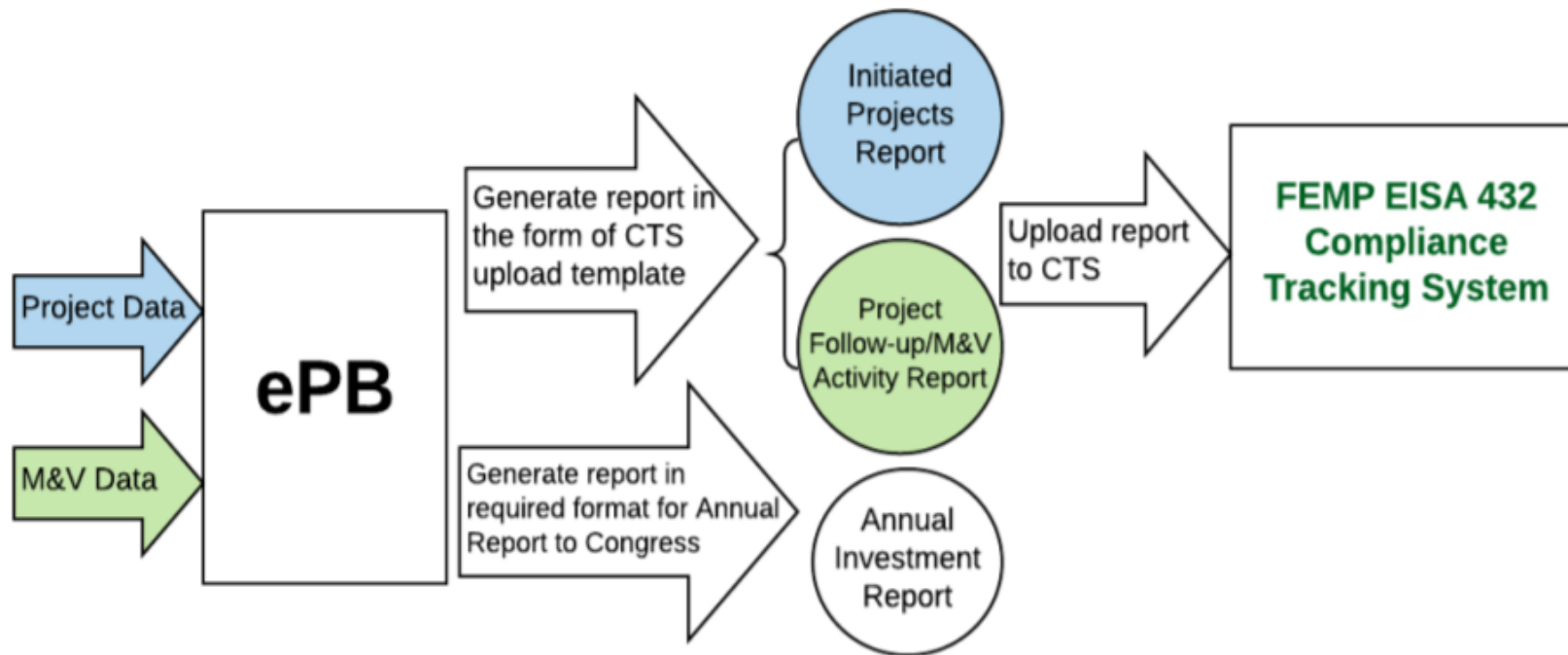


Figure 1. Planned data flow from ePB to CTS.

Summary of Data Reporting (Option 2)

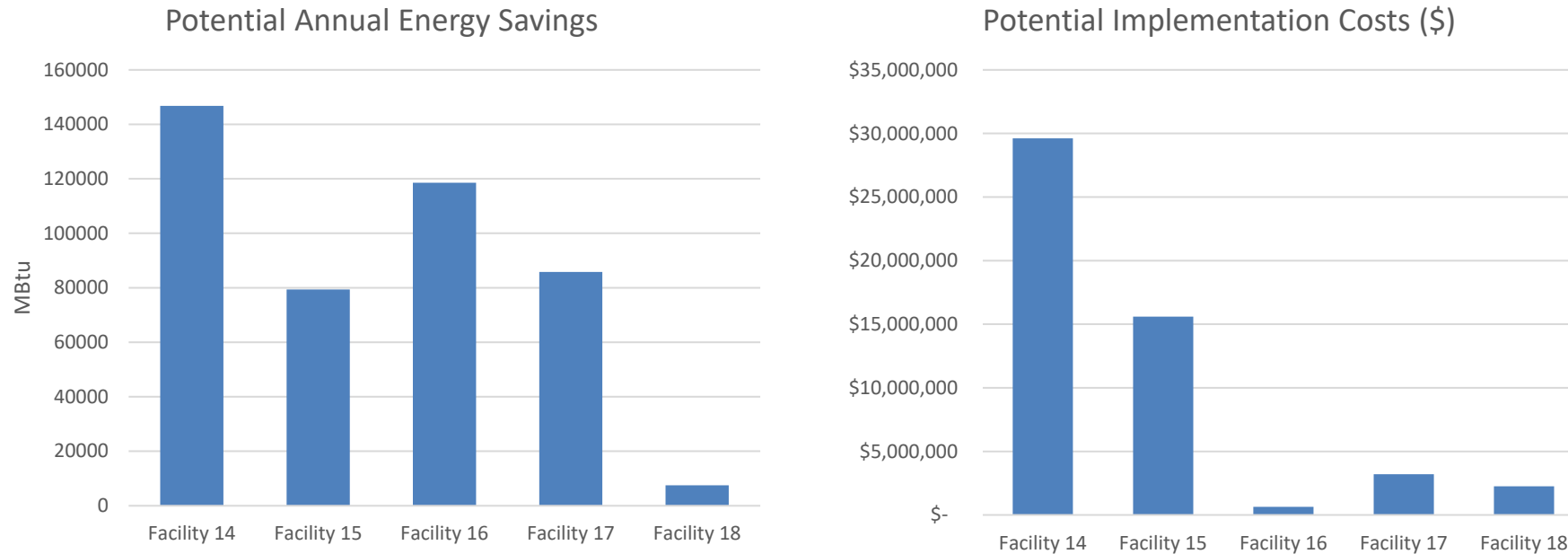
Option 2

- FEMP collects UESC project data using the [CTS Project Template](#), which makes it easy for agencies to upload their data into the [EISA 432 Compliance Tracking System](#).
- To submit UESC project data to FEMP, download the CTS Project Template, and send it to [Christine Walker](#).
- For questions about how to complete the template, contact [Chris Tremper](#) or [Adam Vucelich](#).

Using CTS Data for Market Potential

- CTS data can define larger trends in your service territory, but public disclosure is limited by design
- **EISA Evaluations** provide potential opportunities:
 - Aggregate the impact of all ECM technology categories (energy savings & cost)
 - Provide a count of ECM opportunities by technology category
 - Exempt facilities (e.g., DOD) do not report into CTS at the facility level, however, the agency aggregate is available
 - EISA Evaluations are generally reported once every four years – depending on the renewal cycle, ECM potential may be smaller if the facility has implemented projects

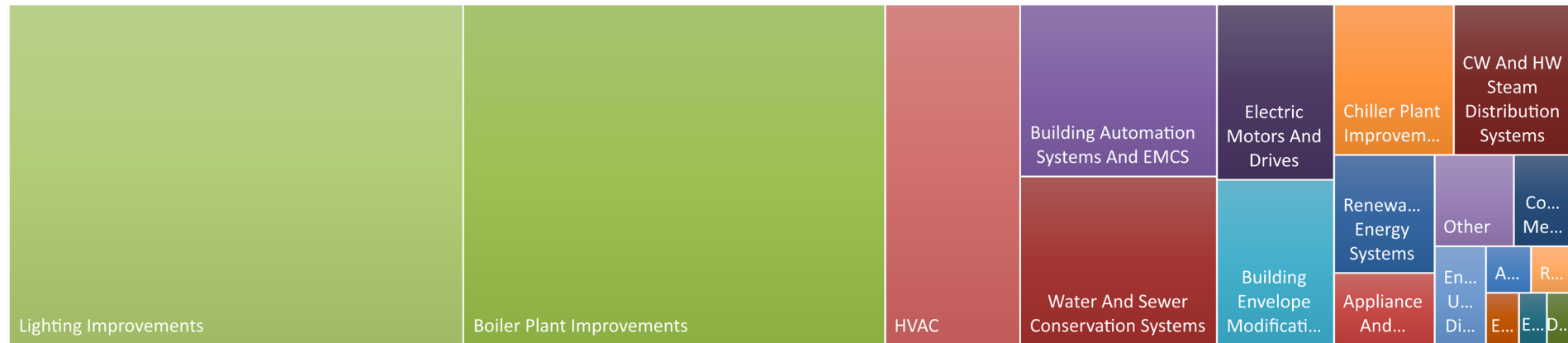
Facility Level CTS Data (example)



- The date of the last evaluation will indicate how current the data is for each facility
- Consider offering your customer a UESC Preliminary Assessment that conforms with EISA Evaluation requirements if they are due for a renewed evaluation

Service Territory CTS Data (example)

Potential ECMs by Territory



- Advanced Metering Systems
- Appliance And Plugload Reductions
- Boiler Plant Improvements
- Building Automation Systems And EMCS
- Building Envelope Modifications
- Chiller Plant Improvements
- Commissioning Measures
- CW And HW Steam Distribution Systems
- Distributed Generation
- Electric Motors And Drives
- Electrical Peak Shaving And Load Shifts
- Energy Related Process Improvements
- Energy Utility Distribution Systems
- HVAC
- Lighting Improvements
- Other
- Rate Adjustments
- Refrigeration
- Renewable Energy Systems
- Water And Sewer Conservation Systems



FEMP Resource!

<https://ctsedweb.ee.doe.gov/CTSDDataAnalysis/ComplianceOverview.aspx>

Final Thoughts

- Publicly available data can be accessed and used to benefit your UESC program
- Utilities can help agencies streamline reporting by using eProject Builder templates when submitting project proposal TO schedules
- UESC projects can be further streamlined if the customer initiates an ePB project to manage the exchange of information & approvals between utilities, ESCOs, and customers

VIRTUAL FEDERAL UTILITY PARTNERSHIP WORKING GROUP SEMINAR

May 5-6, 2021

Thank You!

Adam Vucelich, ORNL



FUPWG Day 1 Closing Remarks

- Thank you for attending!
- Thank you to our presenters!
- Logistics for Day 2:
 - Unique link in 5/6/21 calendar invite – today's link will not work!
 - Please [register for Day 2 on the FEMP Training site](#) if you haven't already done so
 - See you tomorrow at 11:00 AM EDT for Virtual FUPWG Day 2!
- UESC Overview Part 1 training is next!