FEMP 50

50 Years of Federal Energy Management

Tools and Resources to Meet Agency Goals

Chris Tremper, Nael Nmair, Kendall Kam, Kurmit Rockwell,
Jefferey Murrell, Tracy Niro

Learning Objectives

Upon completion of this training, you will be able to:

- Understand FEMP's achievements in federal energy and water savings to date
- Learn about low-cost facility operation improvements in use today
- Become familiar with FEMP's performance contracting and Project Facilitator offerings
- Examine carbon pollution-free electricity procurement avenues for federal agencies
- Understand what resources are available for fleet electrification and how to use them

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Scan this QR code to start

SCAN FOR CEUs

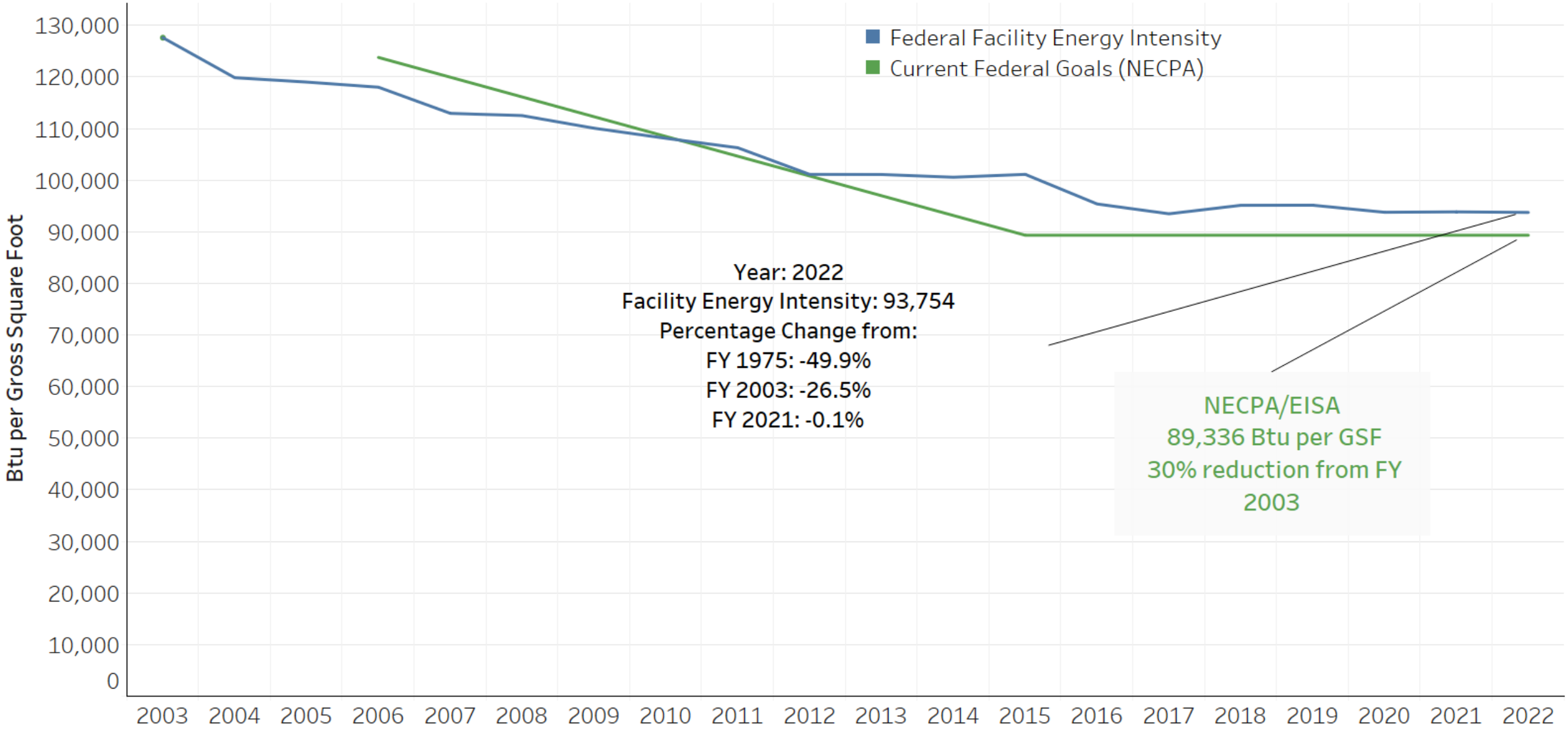
Federal Progress to Date

Chris Tremper

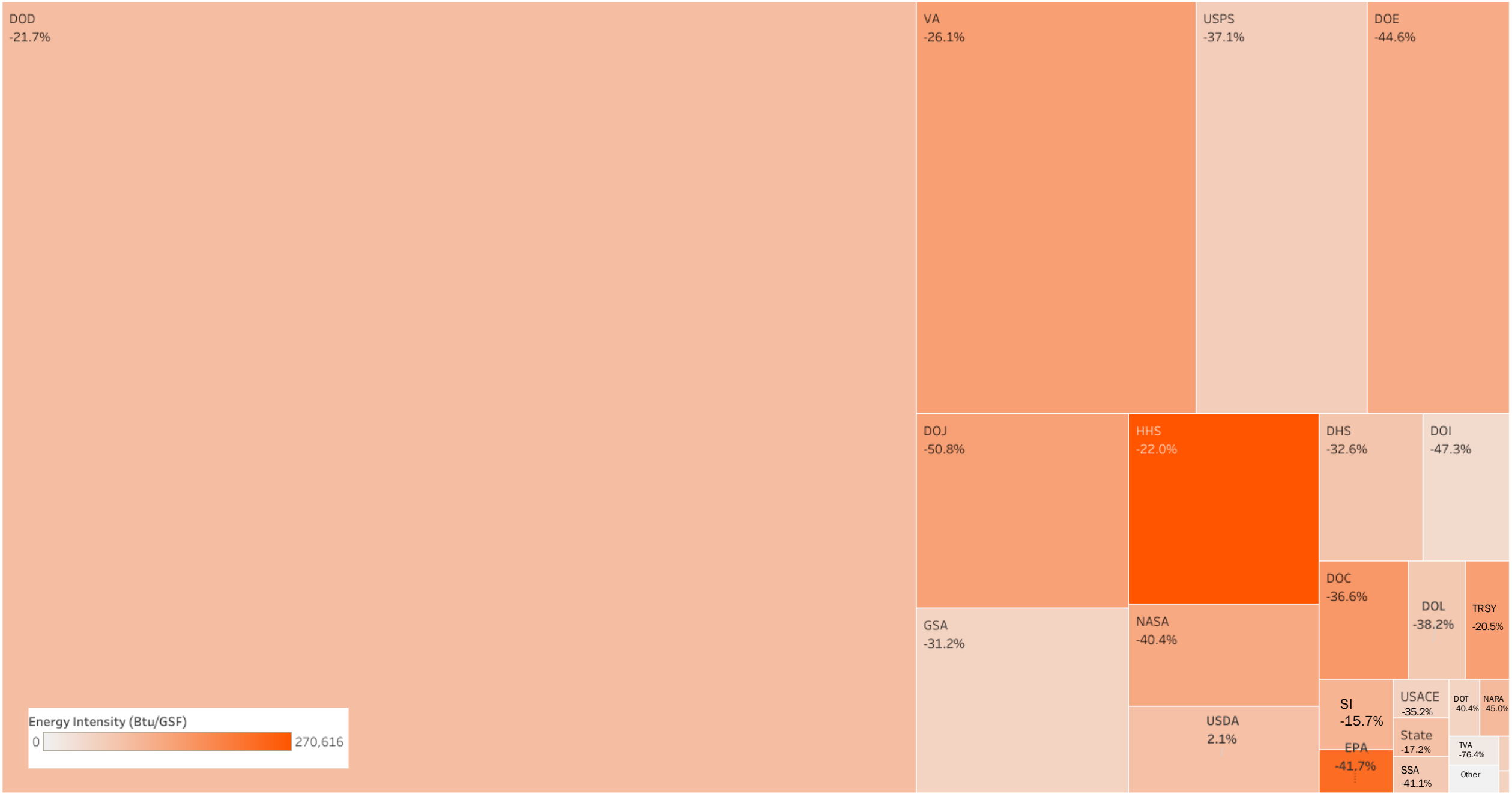
Federal Progress to Date

- Facility energy intensity (Btu/Gross Square Foot) reductions
  - 26.5% reduction vs. 2003 – goal is 30%
  - 0.1% decrease vs. 2021
- Renewable electricity goal of 7.5% was exceeded (11.2% of electricity use)
- Potable water intensity reduction: 30.4% reduction vs. 2007, 2.2% reduction vs. 2021
- Efficiency investment in Federal facilities ($0.7B total in FY 2022) decreased 40% from 2021
  - Direct funding investment: $140 million in FY 2022 (-71% vs. 2021)
  - ESPC investment: $219 million (-19% vs. 2021)
  - UESC Investment: $348 million (-16% vs. 2021)
  - Performance contracting is 80% of total investment in 2022
- Scope 1&2 GHG emissions from standard operations declined by 37.1% vs. 2008, and 3.4% vs. 2021
  - Facility energy GHG emissions declined 38.9% vs 2008 and 2.8% vs 2021
    - Net electricity emissions declined 44.3% vs 2008 and 4.8% vs. 2021
    - On-site combustion emissions declined 21.8% vs 2008, but *increased* 0.2% vs. 2021
  - Mobility energy emissions declined 20.6% vs 2008 and 1.0% vs 2021
    - Fleet vehicle emissions declined 2.8% vs 2008, but *increased* 4.5% vs. 2021
    - Emissions from aircraft, ships, and other mobility declined 44.9% vs 2008 and 12.3% vs. 2021

Federal Government Progress Toward Facility Energy Efficiency Goals
FY 2003 - FY 2022

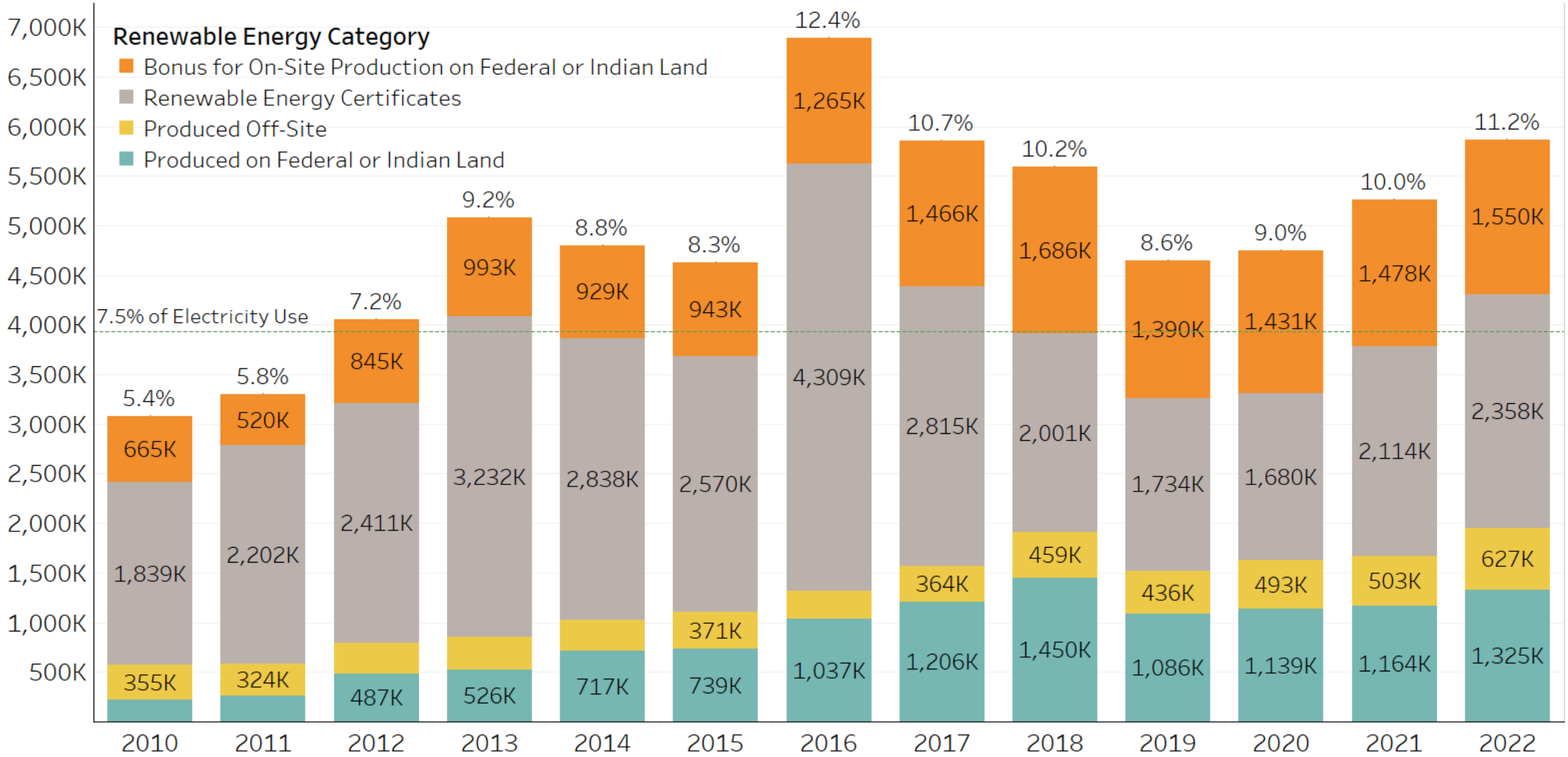


2022 Goal Building Energy Use: 310 Trillion Btu, with Intensity and Reduction Progress versus 2003

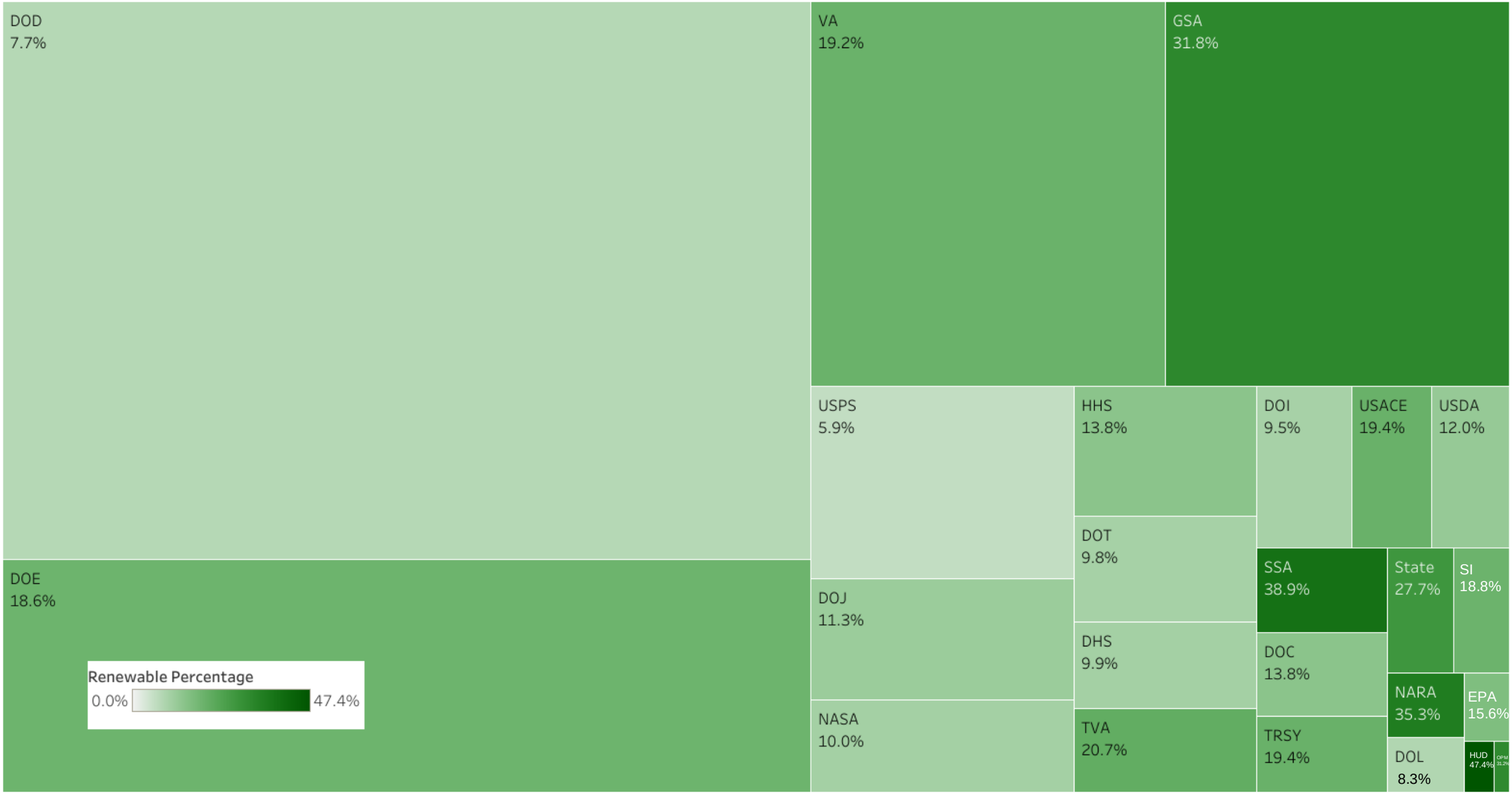


Federal Government Renewable Electricity Use

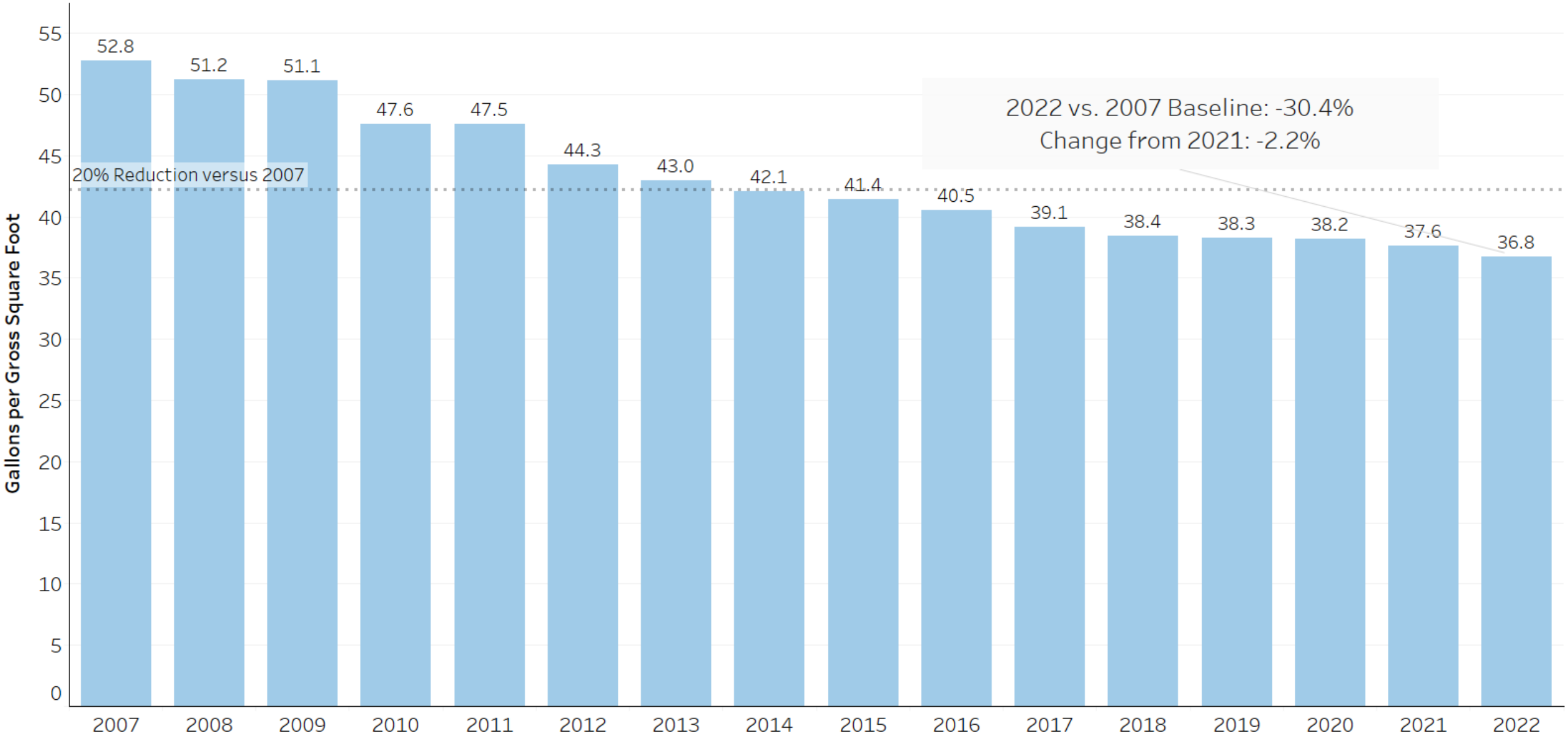
(as a Percentage of Facility Electricity Consumption)



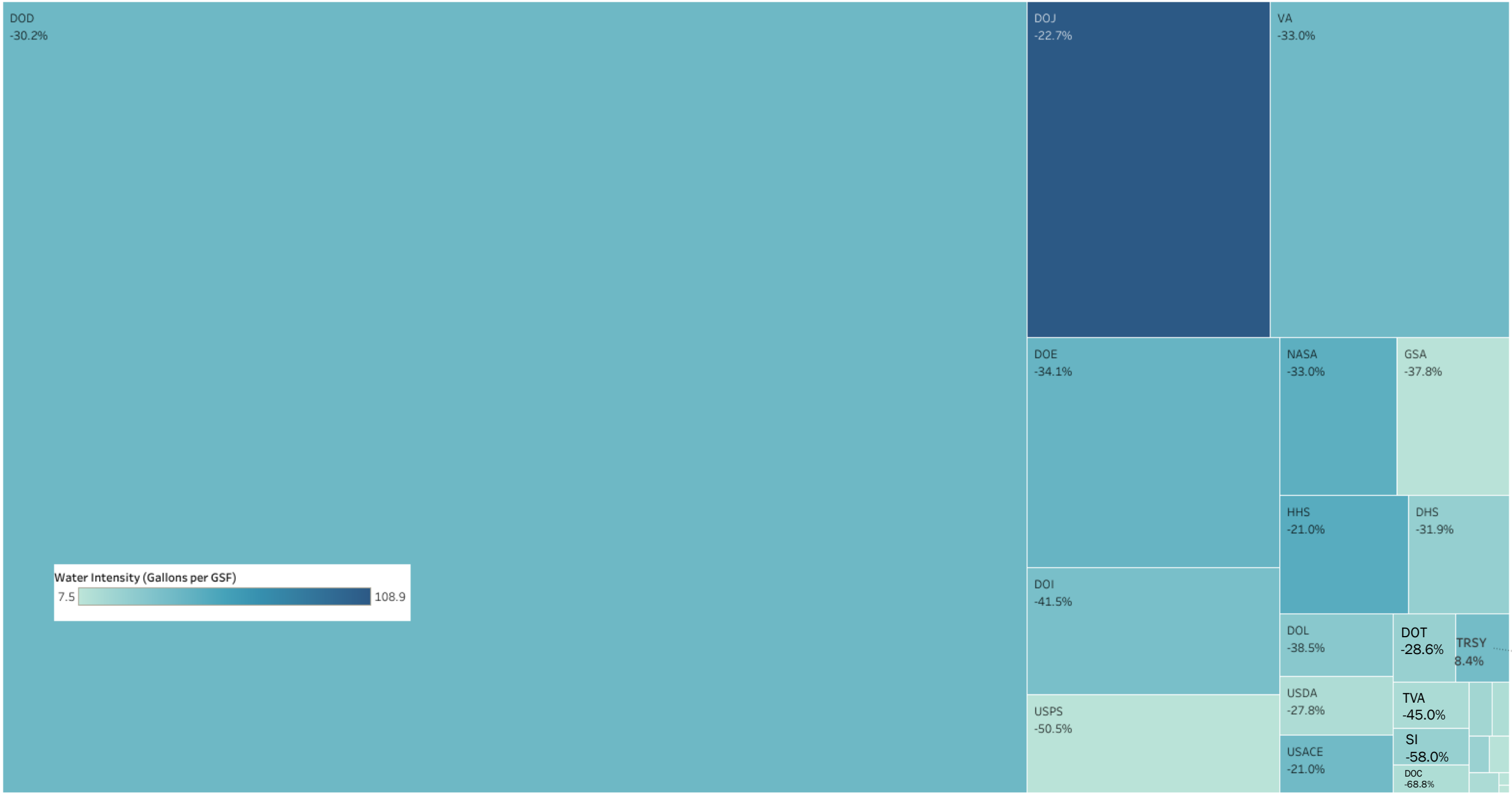
FY 2022 Renewable Electricity Use and Percentage of Electricity Consumption: 6.0 Million MWh



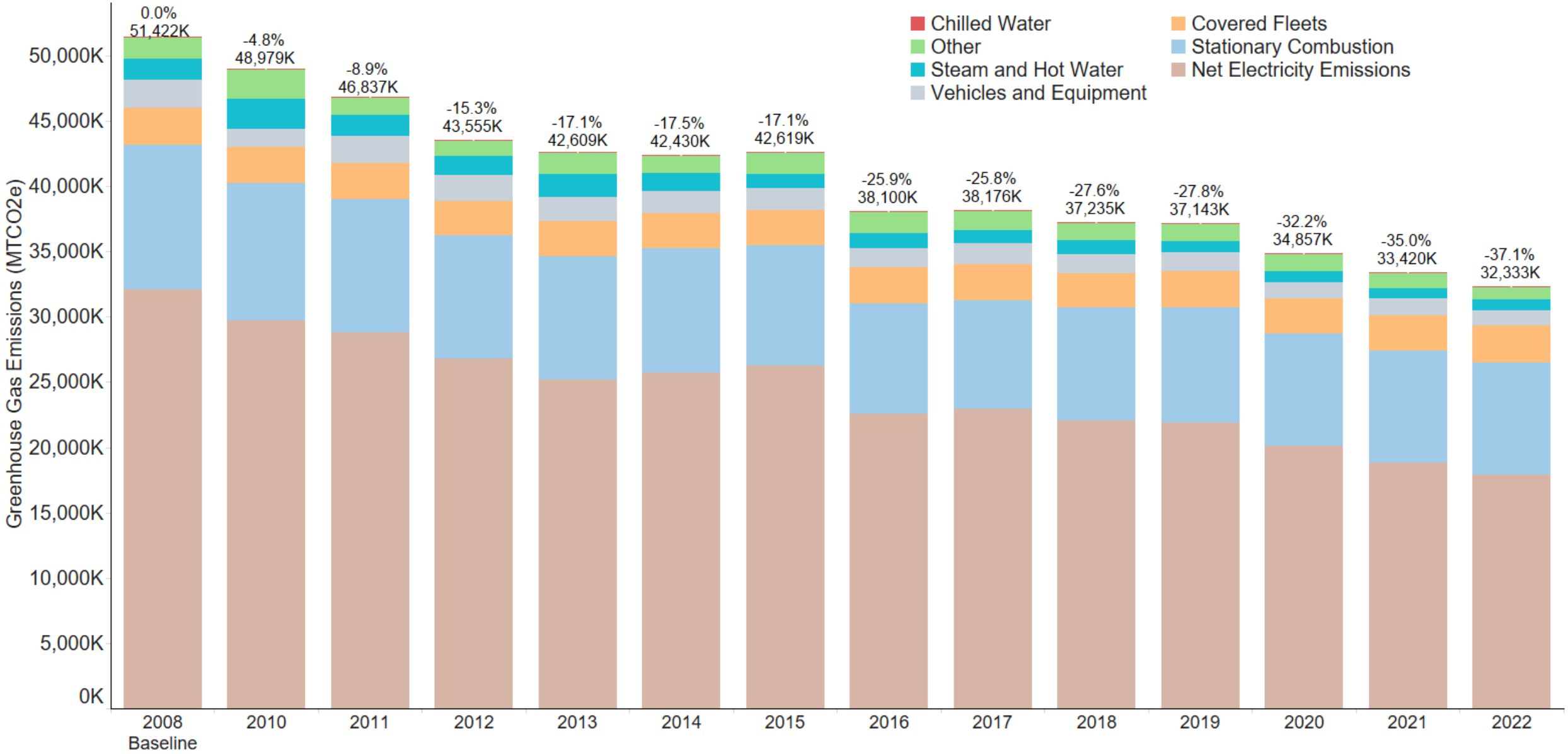
Federal Government Potable Water Intensity
(Gallons per Gross Square Foot)



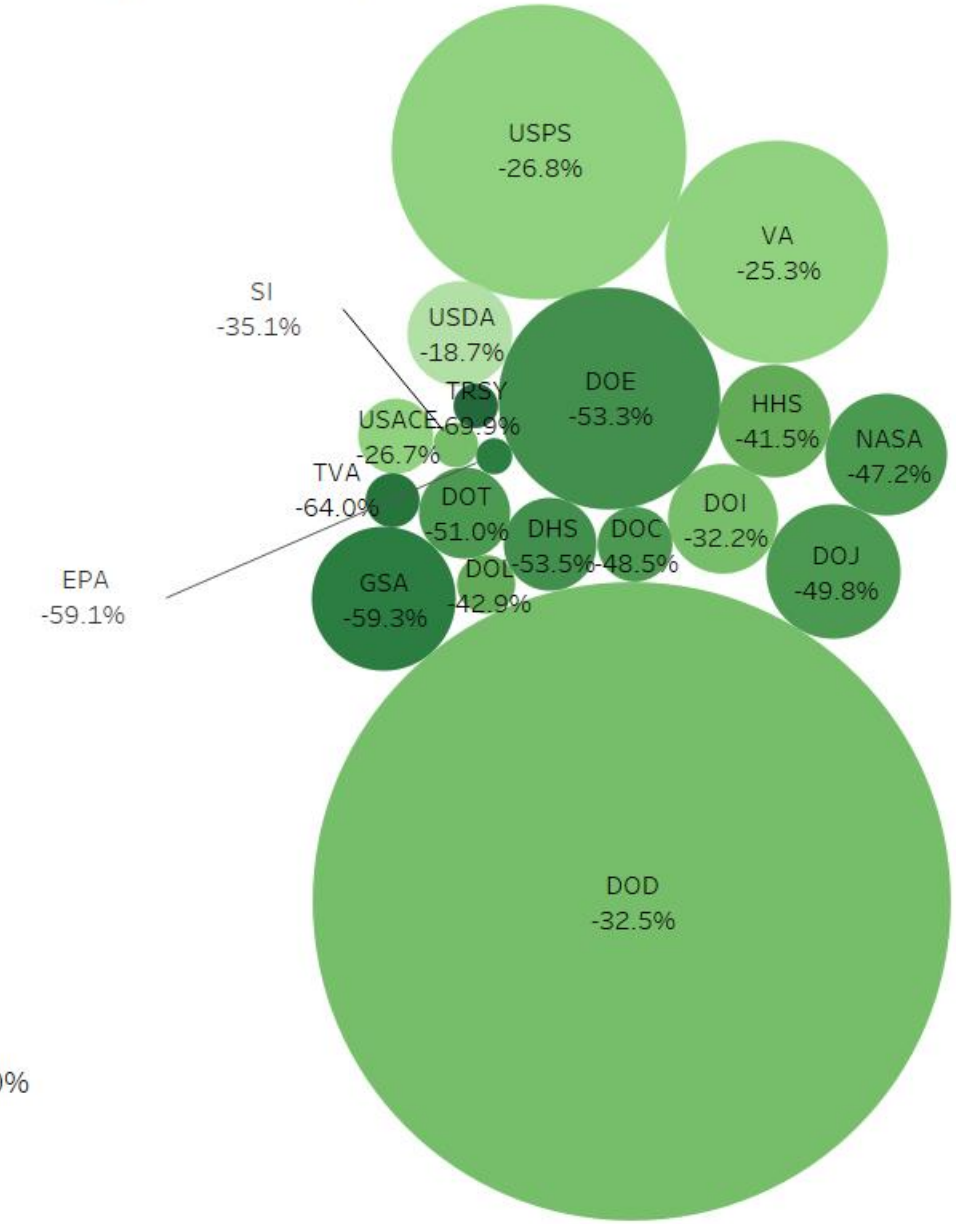
2022 Potable Water Use: 118 Billion Gallons Used, with Intensity and Reduction Percentage versus 2007



Federal Government Scope 1 and 2 Greenhouse Gas Emissions from Standard Operations



2022 Target Greenhouse Gas Emissions: 33.2 Million Metric Tons of Carbon Dioxide Equivalent (MTCO2e) with Reduction Percentage versus 2008



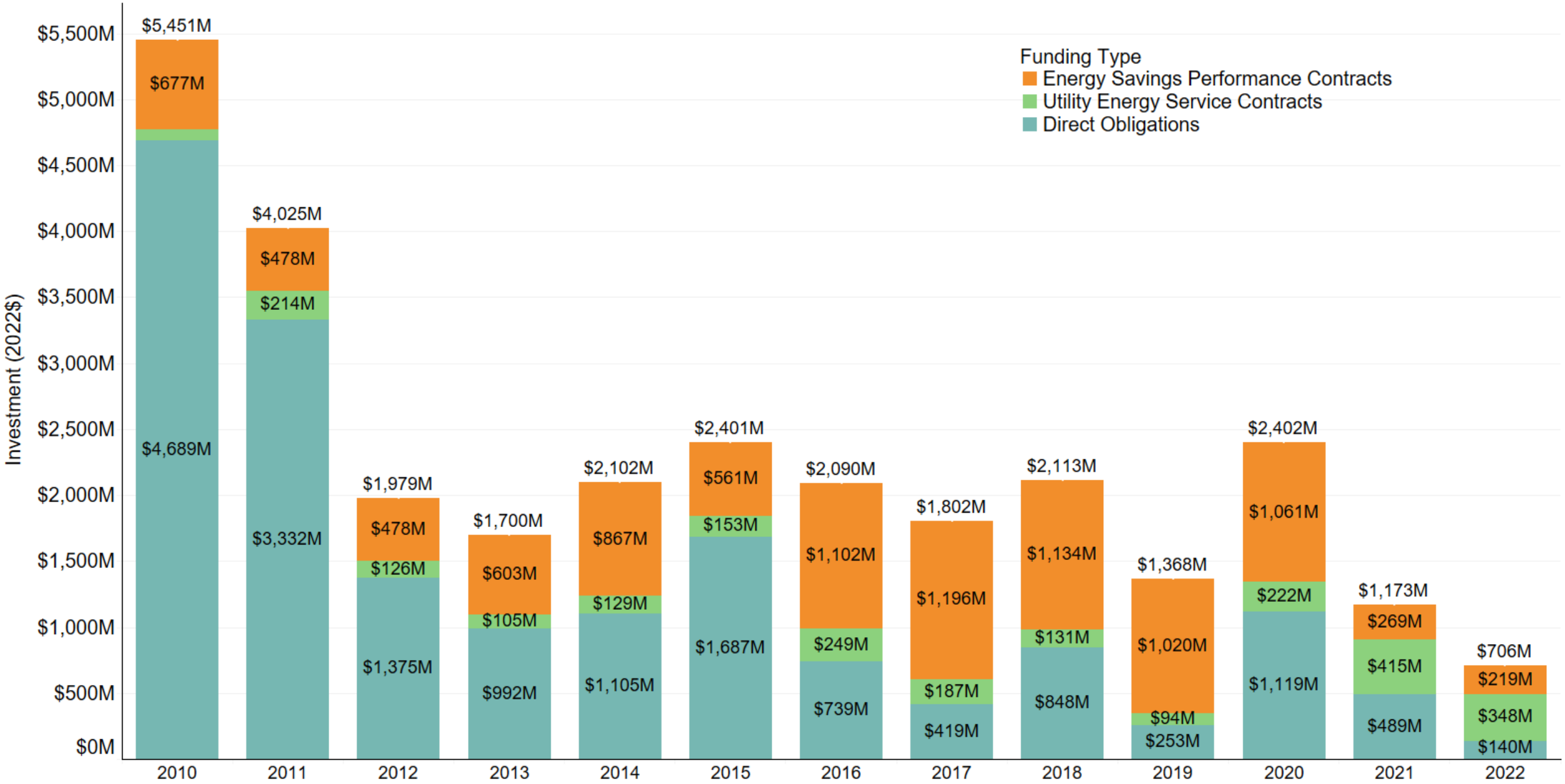
Less than 40,000 MTCO2e

Education	26.1%
HUD	-79.2%
NARA	-59.4%
OPM	-84.0%
SSA	-78.0%
State	-57.9%

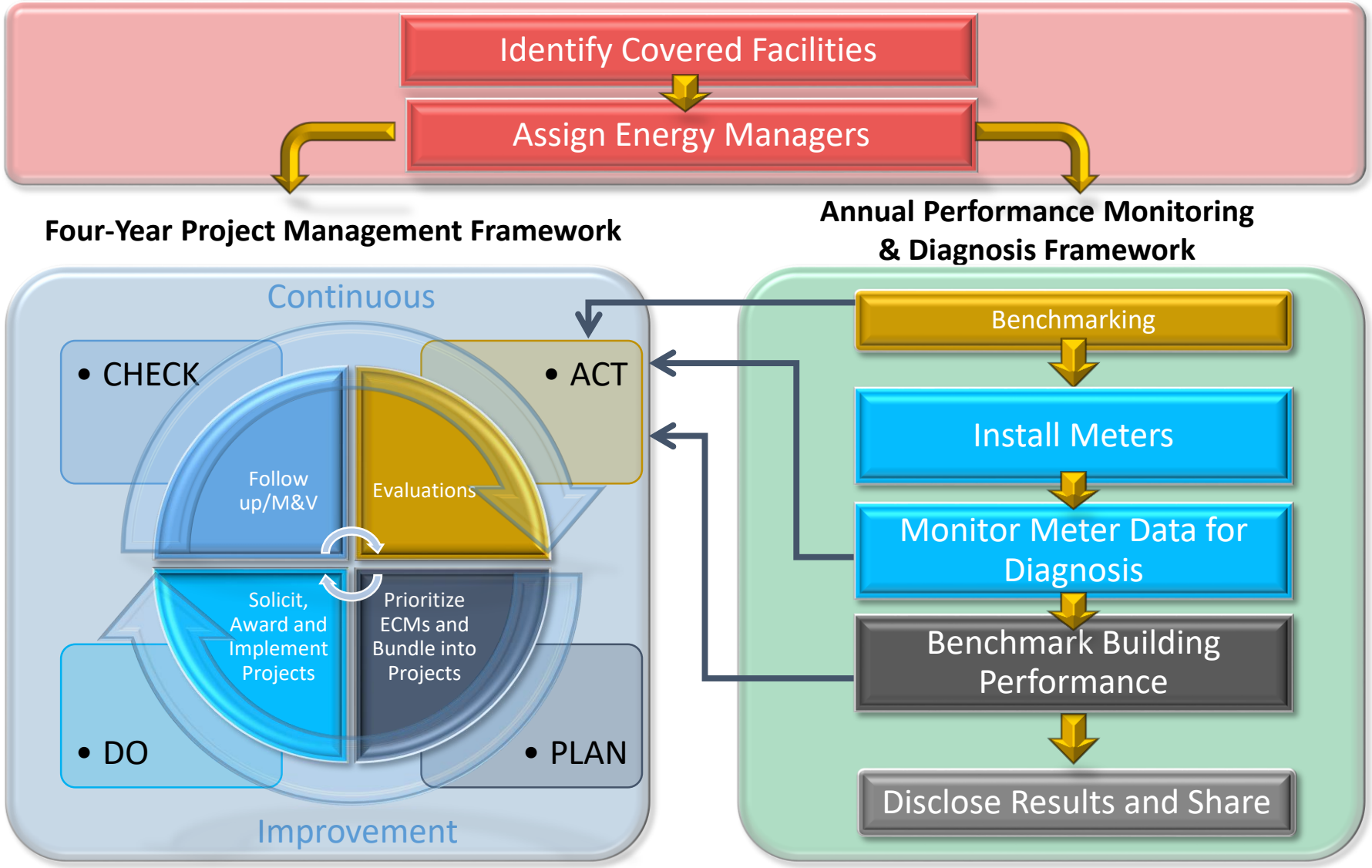
GHG Reduction

-69.9% -17.0%

Federal Government Investment in Facility Efficiency Improvements

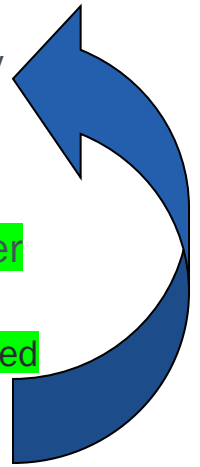


Sect. 432 of Energy Independence and Security Act of 2007 (EISA) (42 U.S.C. 8253(f)) Approach to Facility Resource Management



Overview of 42 U.S.C. 8253(f), Use of energy and water efficiency measures in Federal buildings

- Agencies must identify "covered facilities" that constitute at least 75% of energy use
- Each facility must have a designated energy manager responsible for:
  - Benchmarking metered buildings (that are, or part of, "facilities")
  - Completing comprehensive energy/water evaluations (audits) (each facility at least once every 4 years)
  - Implementing identified ECMs and reporting; (bundling permitted)
    - Implement all life-cycle cost-effective ECMs identified not later than 2 years after completion of audit
      - use performance contracting to address at least 50 percent of the measures identified
  - Follow-up M&V on implemented ECMs (as part of quadrennial evaluation)
- Web-based Compliance Tracking System (CTS) to certify compliance, track agency progress in implementing the mandates
  - Agencies tailor reporting into CTS according to their management approach
    - Upload from centrally-managed systems or entered by regional/facility managers bottom-up
  - Reports available to Congress, industry, and the public
    - Agencies may exempt facility-level data from disclosure for national security purposes



Reported Findings in EISA 432 Compliance Tracking System

- Public data site: http://ctsedwweb.ee.doe.gov/CTSDataAnalysis/ComplianceOverview.aspx
- 8,105 Covered Facilities, 2.8 billion square feet
  - 90% of total facility energy use
- 44% of Covered Facilities evaluated within the last four years (in terms of energy use)
  - $7.7 billion in potential ECMs identified with annual savings of $865 million (~100,000 ECMs)
  - Potential annual savings of 30 trillion Btu (9% of total consumption) and 9 billion gallons of water (8%)
- $6.6 billion in implemented projects (5,022) reported
  - 23 trillion Btu in annual savings (7% of total consumption) and 7 billion gallons of water (6%)
  - 384 million kWh of renewable electricity generation and 1.8 trillion Btu of renewable thermal generation
  - ~28,000 ECMs
- 993 out of 5,022 projects with follow-up measurement and verification
- 457 million square feet of building space benchmarked in FY 2022

Data as of 8/18/2023

Thank You!

Chris Tremper
Program Analyst
Federal Energy Management Program
U.S. Department of Energy
(C): 202-247-6501

Annual Energy Performance Data | Covered Facility Management and Benchmarking Data

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Energy and Water Treasure Hunt

Nael Nmair, PE, PMP

Supervisor, FEMP Facility and Fleet Optimization

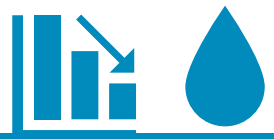
September 12, 2023

Objectives of a Treasure Hunt (TH)

The objective of the TH program is to engage all levels of agency staff in an interactive free two-day training that identifies and quantifies low-to no-cost energy/water conservation measures (ECMs/WCMs) and decarbonization opportunities. TH participants:

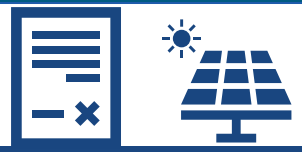
- Acquire skills that will empower attendees to routinely conduct a Treasure Hunt at your site
- Identify the objectives and goals of decarbonization and energy/ water reduction
- Identify low or no-cost energy and water conservation measures at your site
- Engage simple automated tools to quantify energy and CO2 reduction/ savings
- Implement logical incremental steps to align culture with new energy standards
- Provide leadership essential tools and information to make informed decisions
- Earn up to 1.8 continuing education credits

Drivers: Compliance With Energy-Related Statutes and Guidance



Energy Independence and Security Act (EISA) of 2007 (Sect 432)

- Energy and water evaluations of covered facilities every 4 years (25%/year)
- Estimated costs and savings for identified measures
- Building energy and water (ECM/WCM) benchmarking and reporting



Energy Act of 2020

- Agencies to implement all cost-effective ECMs identified within two years
- Agencies to use performance contracting to address at least 50% of ECMs identified
- FEMP to establish a Federal Smart Building Program

Executive Order 14057

- Government-wide targets for long-term and mid-term GHG reductions
- 100% net zero buildings, zero-emission fleets, 24/7 carbon pollution-free electricity
- Net zero federal government operations by 2050 or sooner
- 65% reduction in scope 1 and 2 GHG by 2030 (based on 2008 levels)

Climate Smart Building Initiative (CSBI)

- Agencies to establish emissions reductions targets delivered through performance contracting
- Increase on-site clean electricity generation
- Support plan to reduce emissions from Federal buildings by 50% by 2032

Federal Building Performance Standard

- Support achievement of net-zero emission for federal building portfolio
- Zero scope 1 emissions from on-site fossil fuel use in 30% of agency's federal buildings (by GSF) by FY 2030
- Applies to federally-owned, EISA-covered facilities in U.S. and U.S territories

What are the Expected Impacts of a Treasure Hunt?

Look for electrification opportunities

Assist agencies in compliance with mandated energy & water goals, decarbonization, and electrification

Recognize tangible annual energy savings:
- Treasure Hunts (5-15%)
- Simple Payback (0.3-3.5 years)

Increase building systems resilience, operability, and efficiency:
- *Assess* critical equipment BAS sequence of operations
- *Reduce* energy/water consumption
- *Encourage* decarbonization/electrification
- *Reduce* O&M costs and increase reliability
- *Implement* no-cost to low-cost energy/water conservation measures (ECMs/WCMs)
- *Supplement* energy security and resilience

Instill site/agency energy savings culture to maximize and replicate energy and water conservation efforts

Increase occupant's comfort

Provide facility staff viable conservation measures to present to leadership

Empower sites to replicate this training to an extended stakeholder pool (additional personnel, buildings, sites, etc.). Train-the-trainer.

Treasure Hunts Are Interactive Hands-on Trainings





Participants learn basic energy and O&M principles

Classroom training and field application of best practices learned

- Current energy laws, guidance and policy
- HVAC and building automations
- Lighting strategies and principles
- Thermography/ Envelope

- Plug load management
- Compressed air
- Water efficiency
- Electrification/Decarbonization Opportunities

Participants Identify Energy & Water Conservation Measures (ECMs)




Teams

- Analyze field- collected data
- Brainstorm new ideas and approaches to decarbonization and energy/water use reduction
- Average annual savings has historically been up to 15%
- Utilize free user-friendly DOE MEASUR and common energy tools
- Provide outbrief of TH teams' findings to leadership for consideration and implementation

FEMP Treasure Hunt - Contacts

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Program Manager

Chris Jackson, MPM,CEM,PMP
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Resource Efficiency Manager
330-780-9689
Contracted by Lindahl Reed

For questions about the program, or to request site training, please contact: FEMP Assistance Request Portal (energy.gov)

FEMP
Federal Energy Management Program

50001 Ready Program: Implementing an Energy Management System (EnMS)

Kendall Kam, 50001 Ready Program Manager

kendall.kam@hq.doe.gov

50001 Ready Supports Federal Sustainability Goals

Helps agencies strategically manage all energy-related initiatives and goals!


Acquisition and Electronics Stewardship


Facility Energy Efficiency


Fleet Management


Greenhouse Gases


Performance Tracking and Reporting


Renewable Energy and Electricity

2022: New CEQ Guidance on E.O. 14057

"Agencies should continue to use effective management strategies, such as environmental management systems (EMS) and energy management systems (EnMS), if they align with and support their agency needs and facilitate implementation and progress toward E.O. goals."

ISO 50001 - Energy Management System

Energy Policy Act of 2020

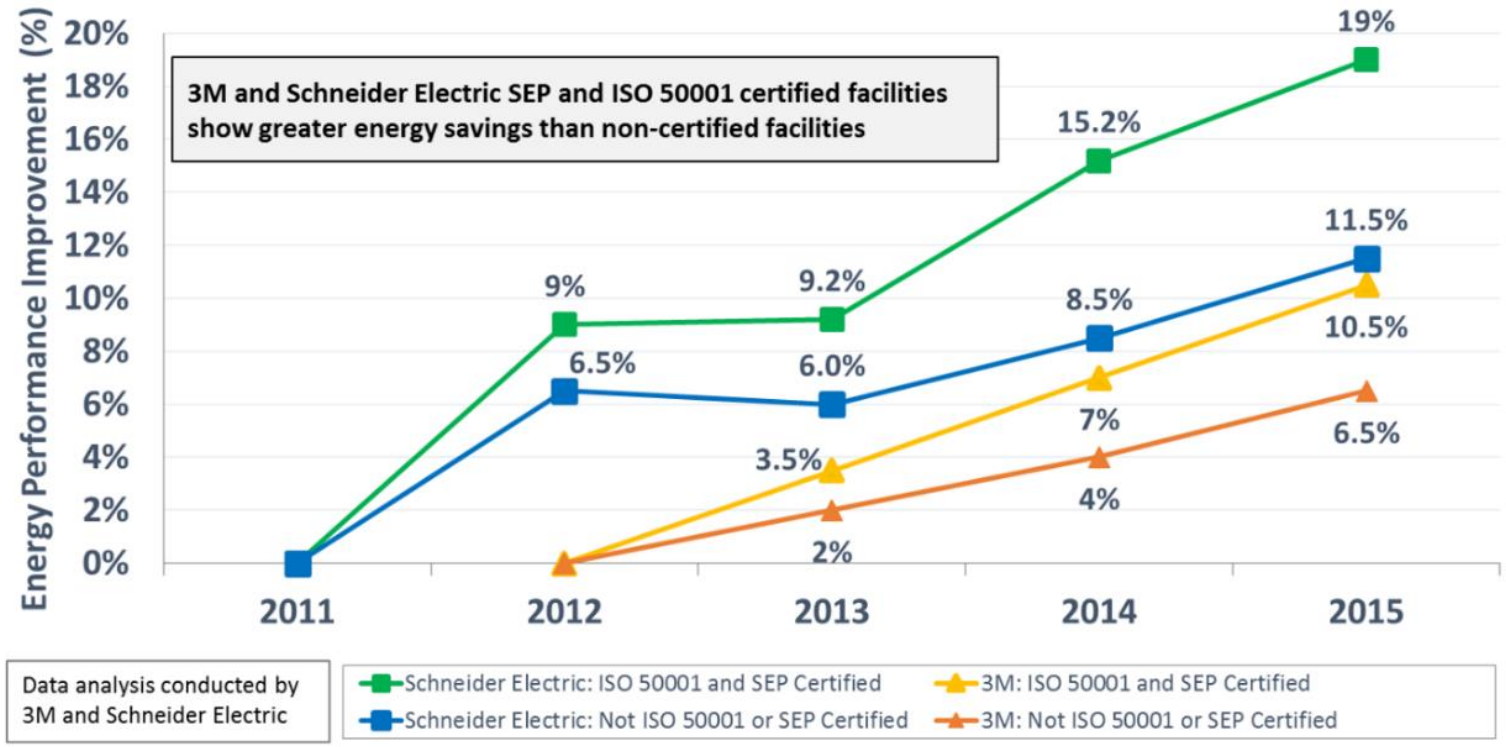
Sec. 1002. Use of energy and water efficiency measures in Federal buildings.

- Encourages federal energy managers to consider use of systems approach to managing energy and water
- Names ISO 50001 specifically as the standard to model the system approach on.

50001: Increased Energy Performance

Multi-sites in 3M & Schneider-Electric showed a

2x improvement vs internal BAU



"ISO 50001 is a standard that drives results directly to the bottom line. ISO 50001 systematically drives down energy costs and improves competitiveness through the assignment of responsibilities and raising the visibility of energy management within the organization."

—Andrew Hejnar, 3M

US DOE Partners in 50001

Industrial

- 3M
- Arcelor Mittal Steel
- Bridgestone
- Cummins
- Detroit Diesel
- General Motors
- HARBEC Inc.
- Intertape Polymer Group
- Johnson Controls
- Mack Trucks
- MedImmune
- NewGold
- Nissan North America
- Schneider Electric
- Titan America
- Volvo

Other Sectors

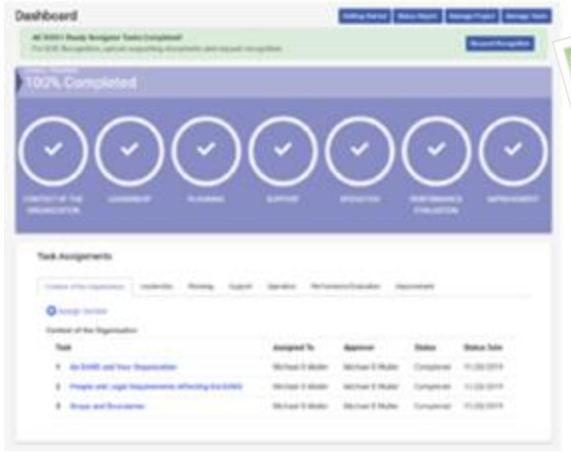
- Des Moines Wastewater
- Hilton Worldwide
- Marriott International, Inc.
- Tinker Air Force Base

Other Partners

- American Chemistry Council
- American Forestry and Paper Association
- Council for Industrial Boiler Owners

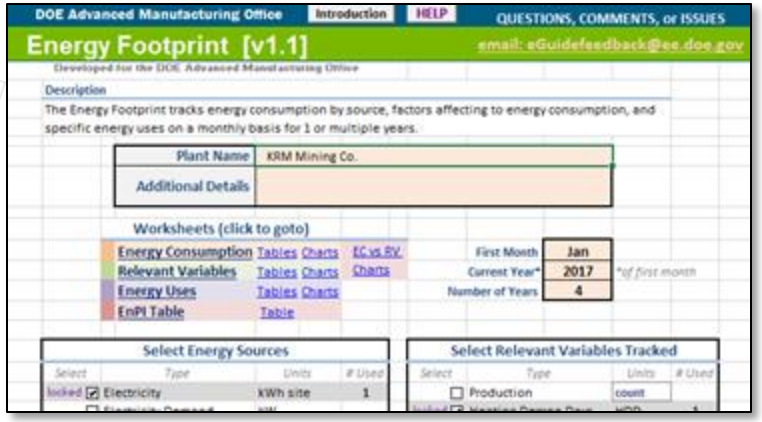
What is 50001 Ready?

- A self-paced, **step-by-step framework** to implement a world class energy management system (EnMS).
- Offers **recognition** for self-attesting to completion of 50001 Ready tasks to establish an energy management system consistent with ISO 50001 standard . There is no third-party certification requirement.
- Includes a **suite of resources** to support continuous improvement in institutional, commercial, and industrial facilities including open-source software tools.
- Supports 'enterprise' or **multi-facility** EnMS adoption.

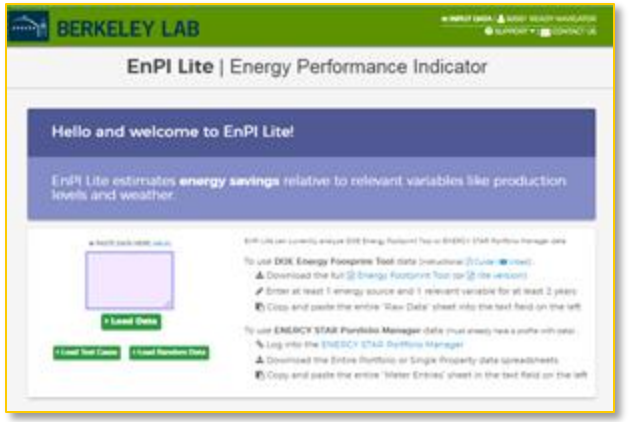


50001 Ready Navigator

Navigator Task Worksheets



Energy Footprint Tool



EnPI Lite Tool

50001 Ready Tasks & Your Current Energy Management Work

Context of the Organization	Leadership	Planning	Support	Operation	Performance Evaluation	Improvement
1. An EnMS and your Organization 2. People and Legal Requirements 3. Scope and Boundaries	4.Management Commitment 5. Energy Policy 6. Energy Team and Resources	7. Risks to EnMS Success 8. Energy Data Collection and Analysis 9. Significant Energy Uses 10. Improvement Opportunities 11. Energy Performance Indicators (EnPIs) and Baselines (EnBs) 12. Objectives and Targets 13. Action Plans for Continual Improvement	14.Competence and Training 15. Awareness and Communication 16.Documenting the EnMS	17.Operational Controls 18. Energy Considerations in Design 19. Energy Considerations in Procurement	20. Monitoring and Measurement of the EnMS 21. Monitoring and Measurement of Energy Performance Improvement 22. Internal Audit 23. Management Review	24. Corrective Action 25. Continual Improvement

Strongly prepared
Partially prepared
Not prepared

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How Does 50001 Ready Work?

1. Implement ISO 50001 principles

Complete Tasks in the free, self-guided 50001 Ready Navigator

2. Present energy performance

Review energy performance data. May use EPA's Portfolio Manager, DOE's EnPI Lite or FEMP/OMB energy reporting data

3. Self-attest to 50001 Ready

Sign-off by management and energy lead that to best of ability met the 25 Tasks in the 50001 Ready Navigator

DOE and Your Organization recognizes 50001 Ready achievement

50001 Dashboard: Regional View

- 50001 Ready can be used at the:
  - Installation Level
  - Regional Level
  - HQ Level
- Dashboards provide oversight of energy status

VA

Contact	Site Name	Task Progress	Action	Last Activity		
	San Juan VAMC	1 2 3 4 5 6 7 8 9 10 11 12 13 / 14 15 16 17 18 19 20 21 22 23 24 25	Dashboard	06/24/2020	Notes 1	Remove
	Orlando VAMC	1 2 3 4 5 6 7 8 9 10 11 12 13 / 14 15 16 17 18 19 20 21 22 23 24 25	Dashboard	06/24/2020	Notes 1	Remove
	West Palm Beach VA Medic...	1 2 3 4 5 6 7 8 9 10 11 12 13 / 14 15 16 17 18 19 20 21 22 23 24 25	Dashboard	06/15/2020	Notes 1	Remove
	Tampa VAMC	1 2 3 4 5 6 7 8 9 10 11 12 13 / 14 15 16 17 18 19 20 21 22 23 24 25	Dashboard	04/18/2022	Notes 1	Remove
	Miami VAMC	1 2 3 4 5 6 7 8 9 10 11 12 13 / 14 15 16 17 18 19 20 21 22 23 24 25	Dashboard	06/24/2020	Notes 1	Remove
	Bay Pines VAMC	1 2 3 4 5 6 7 8 9 10 11 12 13 / 14 15 16 17 18 19 20 21 22 23 24 25	Dashboard	09/22/2020	Notes 1	Remove
	Gainesville VAMC	1 2 3 4 5 6 7 8 9 10 11 12 13 / 14 15 16 17 18 19 20 21 22 23 24 25	Dashboard	12/14/2020	Notes 1	Remove

Status Key: Not Started | In Progress | Ready For Review | Completed | DOE Recognition

Name	Association	Progress	Task Status	Team Members	Last Action
Salt Lake City VAMC		0%	1 2 3 4 5 6 7 8 9 10 11 12 13 / 14 15 16 17 18 19 20 21 22 23 24 25	2	04/26/2022
Sheridan VAMC		0%	1 2 3 4 5 6 7 8 9 10 11 12 13 / 14 15 16 17 18 19 20 21 22 23 24 25	2	04/29/2022
Cheyenne VAMC		0%	1 2 3 4 5 6 7 8 9 10 11 12 13 / 14 15 16 17 18 19 20 21 22 23 24 25	2	04/26/2022
Rocky Mountain Regional VAMC		0%	1 2 3 4 5 6 7 8 9 10 11 12 13 / 14 15 16 17 18 19 20 21 22 23 24 25	5	06/01/2022
Grand Junction VAMC		0%	1 2 3 4 5 6 7 8 9 10 11 12 13 / 14 15 16 17 18 19 20 21 22 23 24 25	3	04/26/2022
Oklahoma City VAMC		0%	1 2 3 4 5 6 7 8 9 10 11 12 13 / 14 15 16 17 18 19 20 21 22 23 24 25	2	05/10/2022
Muskogee VAMC		0%	1 2 3 4 5 6 7 8 9 10 11 12 13 / 14 15 16 17 18 19 20 21 22 23 24 25	2	04/26/2022
Ft. Harrison VAMC		0%	1 2 3 4 5 6 7 8 9 10 11 12 13 / 14 15 16 17 18 19 20 21 22 23 24 25	2	04/26/2022

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Participation in 50001 Ready Cohorts

Since 2020, over 100 sites from 10 federal agencies have received FEMP training on the 25 tasks of the 50001 Ready program

Agencies	Number of Sites Engaged in Program			Participants
	Training	Implementation Track	Total	Total
10	89	55	144	208

Energy Policy Act of 2020, passed in January

Sec. 1002. Use of energy and water efficiency measures in Federal buildings.

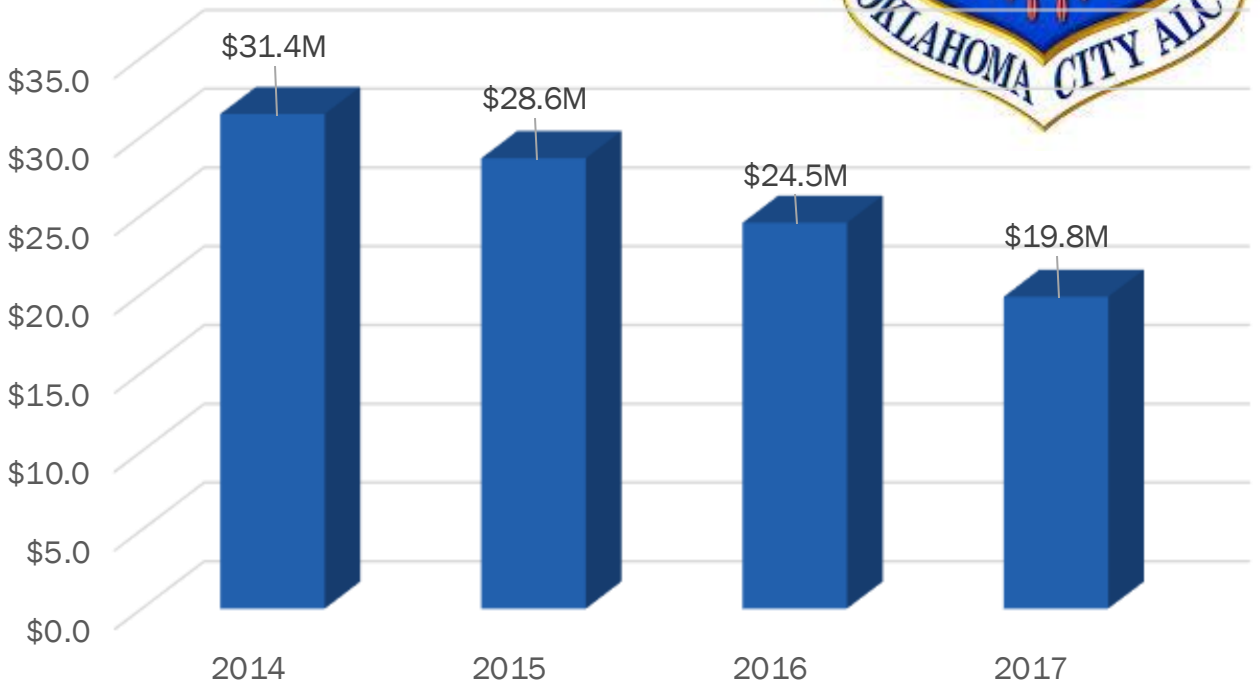
Encourages federal energy managers to consider:

- use of systems approach to managing energy and water
- names ISO 50001 specifically as the standard to model efforts around.

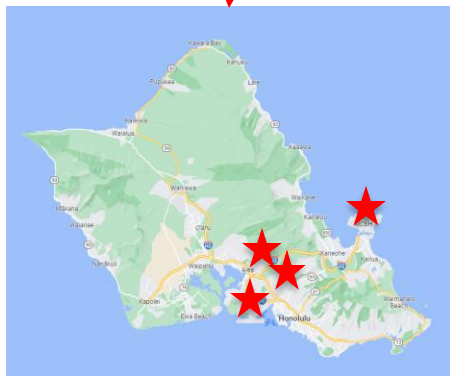
Success Story - Oklahoma City Air Logistics Complex, Tinker AFB

Takeaways

- Leadership engagement, including permission and support from Tinker AFB command in implementing energy management activities
- Cultural change and a sense of organizational pride
- Increased discipline and follow through
- Changes in the procurement process
- Focus on the process energy versus regular heating and cooling
- Energy reductions and energy cost savings (14.1 percent below FY15 baseline).



New Global Training Cohort Launched – July 2023



Demographics:

65 people

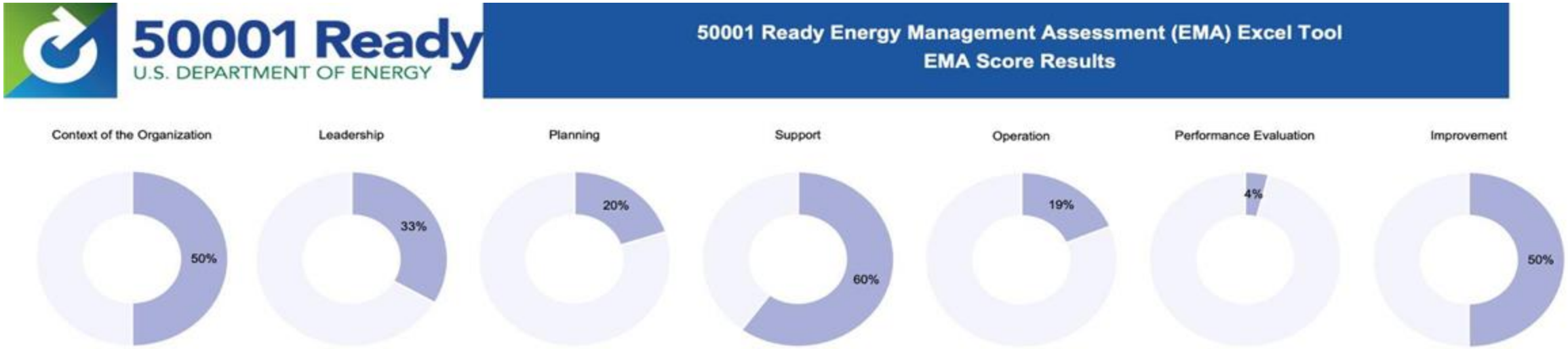
31 sites

6 Federal Agencies: **DOC; DOD; DOE; DOT; HHS; USDA**

New! 50001 Ready EMA Tool

Interested to understand how you can improve your energy management practices? Use the 50001 Ready Energy Management Assessment (EMA) tool to compare your practices to international energy management standard ISO 50001 and identify new opportunities to improve your energy and carbon performance!

SCHEDULE an EMA Results Consultation with DOE



New! 50001 Ready Decarbonization Management Guidance

50001 Ready Decarbonization Management Guidance is now available on the 50001 Ready Navigator. To access, select the "Decarbonization" tab on any of the 25 Navigator tasks.

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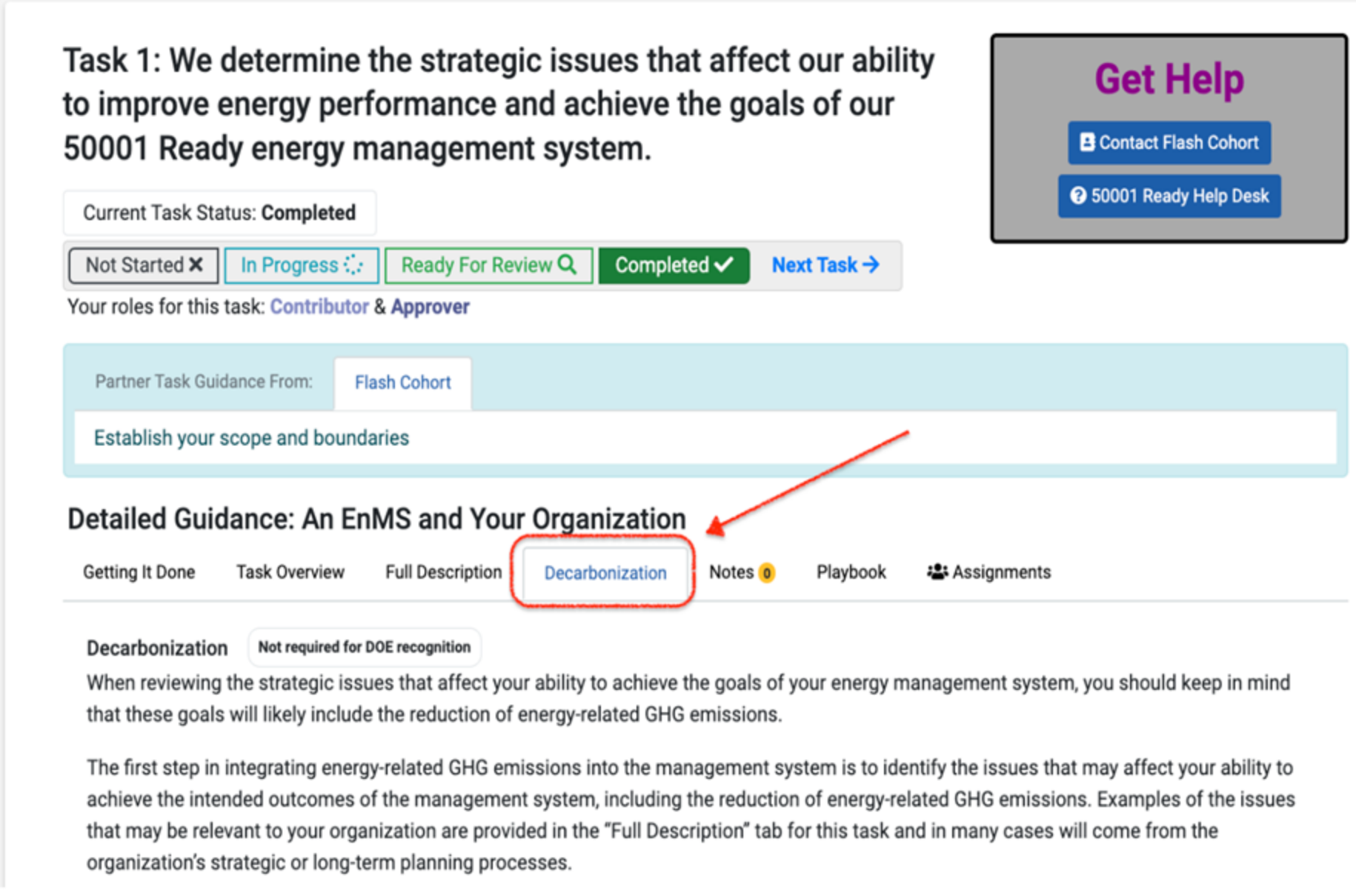

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Kendall Kam, 50001 Ready Program Manager

kendall.kam@hq.doe.gov

"The DOE-organized ISO 50001-Ready cohort training was extremely helpful. The methodical walk-through of how to address each playbook task, use the on-line tools, and access to the help desk provided a framework for the systematic completion of the 50001-Ready process. The 50001-Ready Navigator, gave us a clear path forward to implement the structural energy management program at our sites."

Andrea Thi, Environmental/Sustainability Program Manager, U.S. DOJ.

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50 Years of Federal Energy Management

Introduction to Performance Contracting and Project Facilitator Offerings

Kurmit Rockwell, PE, CEM, LEED AP
Jefferey Murrell, PE, MBA

September 12, 2023

Learning Objectives

- Understand Federal Government Drivers
- Become familiar with the key features, benefits and widespread use of Performance Contracting (PC)
- Learn how agencies implement PC through success stories
- Understand how to get started with a PC
- Be aware of the role of a Project Facilitator (PF) and FEMP PF services

Introduction to Performance Contracting

Kurmit Rockwell

Federal Agency Energy and Sustainability Goals and Requirements

Agency energy projects will enable progress toward several administration and congressional priorities focused on energy and water efficiency, decarbonization, investment, jobs and American manufacturing.

Energy Act of 2020

- Agencies to use performance contracting to address at least 50% of ECMs identified
- Agencies to implement all cost-effective ECMs identified within two years
- FEMP to establish a Federal Smart Building Program

Executive Order 14057

- Government-wide targets for long-term and mid-term GHG reductions
- 100% net zero buildings, zero-emission fleets, 100% carbon pollution-free electricity (50% 24/7) by 2030
- Net zero federal government operations by 2050 or sooner

Climate Smart Building Initiative (CSBI)

- Agencies to establish emissions reductions targets delivered through performance contracting
- Increase on-site clean electricity generation
- Support plan to reduce emissions from Federal buildings by 50% by 2032

Federal Building Performance Standard

- Support achievement of net-zero emission for federal building portfolio
- Zero scope 1 emissions from on-site fossil fuel use in 30% of agency's federal buildings (by GSF) by FY 2030
- Applies to federally-owned, EISA-covered facilities in U.S. and U.S territories

Note: Descriptions are illustrative and not comprehensive.

Performance contracting supports all these goals and requirements

What are Energy Performance Contracts?

Contracts that allow agencies to do energy and water projects with little to no up-front costs and appropriations from Congress.

Utility/ESCO

- Identifies facility upgrades and energy savings opportunities
- Develops and installs energy/water conservation measures
- Resulting cost savings to cover project costs

Agency

- Pays utility over term of contract from savings
- Contract administration → life of contract

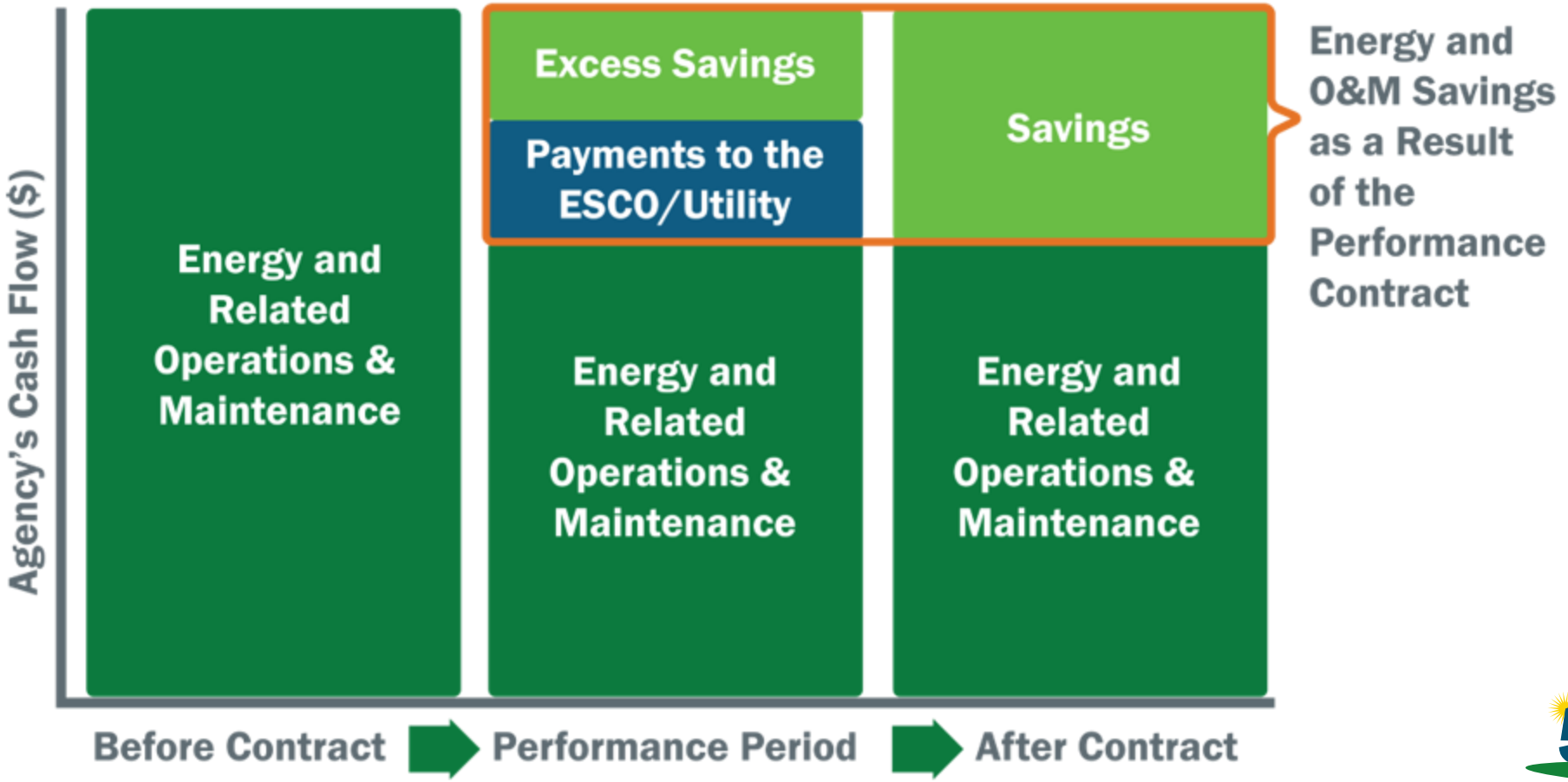
FEMP Federal Energy Management Program

Provides support upon request:

- Financing
- Contracting
- Technical
- Performance Assurance / M&V

Budget-Neutral Solution to Infrastructure Backlog

Reallocate the Government's utility bill.
Stop paying for waste and pollution, start paying for efficiency.



Key Feature of Performance Contracts

Legislated purpose: Achieve energy savings and ancillary benefits

- Max contract term is 25 years (starting with task order award)
- Financing and appropriations may be combined
- Utility/ESCO is responsible for obtaining financing
- Contracts are firm-fixed-price
- Multiple sites may be included in a single task order
- May include O&M, repair & replacement

Energy Savings Performance Contract (ESPC)

- Prime contractor = Energy Service Company (ESCO) (DOE IDIQ, ENABLE, Army MATOC)
- Savings guarantees and M&V are required – savings must exceed payments each year
- ESCO is responsible for O&M regardless of who performs O&M

Utility Energy Service Contract (UESC)

- Prime contractor = local serving distribution utility (electric, gas, or water)
- Performance assurance plan or savings guarantees are required – savings to exceed payments over contract term

Benefits

- Financial Benefits
  - Fund energy improvements with no up-front capital costs
  - Leverage appropriations to build more comprehensive projects
  - Free up funds for other investment and mission support
  - Obtain long-payback ECMs by bundling with short-payback ECMs
  - Optimize use of agency operations and maintenance (O&M) and repair and replacement (R&R) → (OMR&R)

Benefits (con't)

- Required Performance:
  - Equipment performance and standards of service
  - Performance assurance and guarantees
- Performance contracts gives Utility/ESCO incentives to serve agency needs
  - Find all ECMs
  - Finish punch list quickly
  - Commission well
  - Ensure optimal O&M
  - Purchase quality equipment

What can be bought and how is it is paid for?

- Virtually any energy and water conservation measure that meets federal definitions
  - This can include EV Chargers (EVSE) as part of a related ECM or as an ECM for demand cost savings

- How to pay for performance contracts
  - Energy, demand, and water cost savings
  - Energy- and water-related cost savings (O&M and R&R)
  - Avoided equipment cost savings
  - Appropriations, grants (e.g., FEMP AFFECT), rebates, renewable energy credits, and other incentives

Leveraging Appropriations to Maximize Project Scope

Original Performance Contracting Project ($9M)

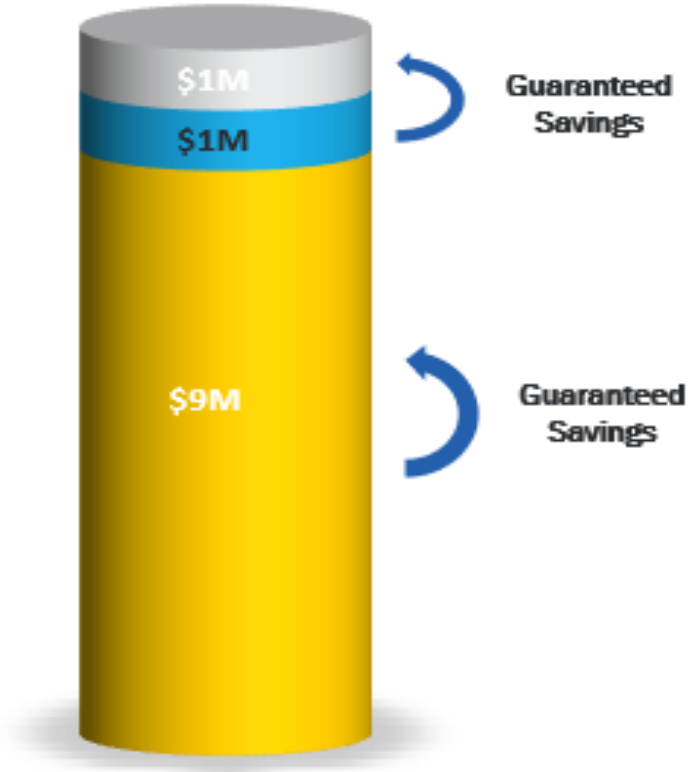
Funded through (guaranteed) savings generated by the project ECMs

Appropriations-Funded Project ($1M)

Energy costs are reduced, but savings cannot be captured to fund additional scope

Combined Performance Contracting /Appropriations Project ($11M)

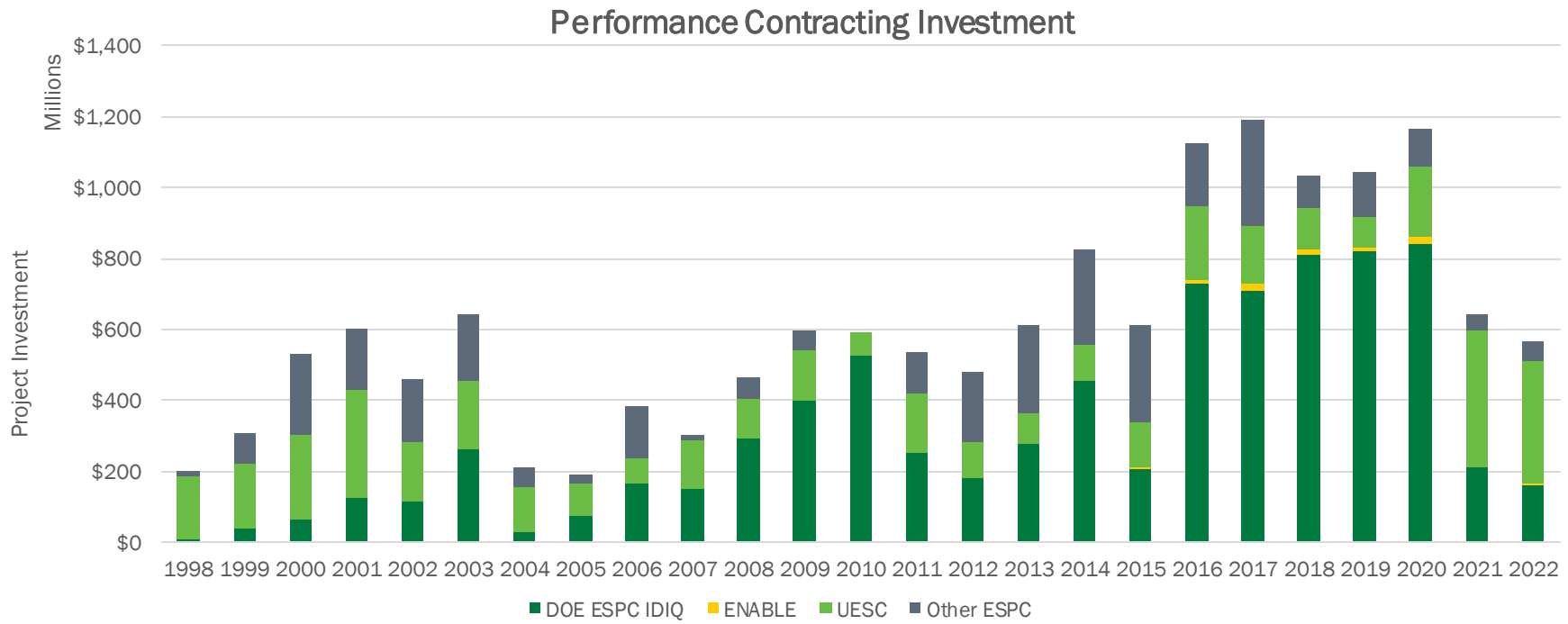
Over project term, savings from the appropriations are captured in the project, leveraged to fund additional scope



New Report (https://info.ornl.gov/sites/publications/Files/Pub192303.pdf)

**Analysis based on DOE ESPC IDIQ project awards*

Performance Contracting Investments in Federal Agencies (FY98 – FY22)



	Program Investment (since FY98)	Program Year Start
DOE IDIQ	$7.976B	FY98
ENABLE ESPC	$0.094B	FY12
UESC	$4.088B	FY92
Other ESPC (e.g., Army MATOC, VA IDIQ)	$3.240B	FY98
Total Alternative Finance	$15.398B	

USCG Training Center Petaluma in Sonoma County, CA

- Awarded ESPC project investment of over $36.1M
  - Annual savings of $1.2M, 8.7M kWh/yr of electricity and 50.8 kgal/yr of propane
- Energy resilience ECMs accomplished through Energy Sales Agreement
  - GHG reduction of more than 3,950 tons CO2 equivalent
- **Energy resilience ECMs**
  - **Solar PV - 5MW**
  - **Battery Energy Storage - 11.6MWh**
  - **Backup Generators**
  - **Microgrid**
  - **MV Transformers**
  - **Advanced Energy Metering**
  - **EVSE – 3 dual port level 2 chargers, expansion for 5**

UESC Success Story: Army Garrison Ft. Liberty (2020)

UESC Quick Facts:

- Location: Army Garrison Fort Liberty; Fort Liberty, NC
- Utility Partner: Duke Energy
- Investment Value: $36 million
- Contract Term: 19 years
- Annual Cost Savings: Approx. $880,000
- Assisting Federal Facilities with Energy Conservation Technologies (AFFECT) grant: $800,000

Energy Conservation Measures:

- 1.1 MW floating solar PV system with battery storage at a remote satellite installation of Fort Bragg
- Replaced 9 oil-fired boilers with highly efficient natural gas-fired condensing boilers
- ~216,000 interior and exterior light fixtures converted to LED
- ~26,000 high efficiency toilet and showerhead replacements
- Three high efficiency dehumidification system (HEDS) units to control indoor relative humidity; AFFECT grant applied to this ECM

The floating solar PV array was the first at a DOD installation and the largest in the U.S. Southeast at the time of award. Prior to inclusion in this UESC, HEDS technology was piloted at Fort Liberty as part of the DOD Environmental Security Technology Certification Program (ESTCP).

For more information, see this U.S. Army release.

ESPC ENABLE ESA Case Study: NIST Campus (Gaithersburg, MD)

Site

- National Institute of Standards and Technology

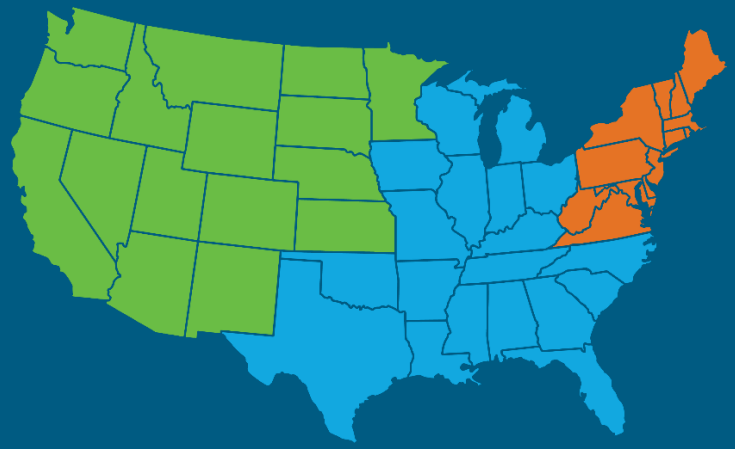
System

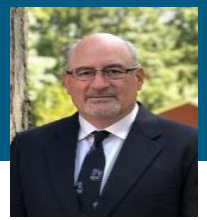
- 5 MW-DC fixed-tilt ground-mounted PV system
- Contract vehicle through ENABLE with an Energy Sales Agreement (ESA) for PV (no other ECMs)
- Awarded May 2018
- Accepted/Completed Dec. 2018
- Estimated First Year Production ~6.1 million kWh
- Guaranteed Annual Cost Savings from PV ~$500,000

NIST Case Study

How to Get Started with a Performance Contract: Your Federal Project Executive (FPE)

- Help with all performance contracting: ESPC, ENABLE, ESAs and UESCs
- Connect you with lab, Subject Matter Experts (SME), resources





Western Region

Scott Wolf
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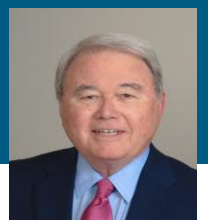

Southeast Region

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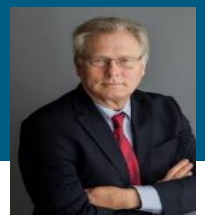

Northeast Region

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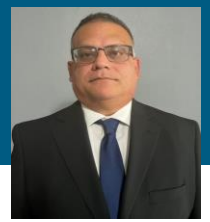

Multi-regional Support

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All Regions
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Click here for more information about how FPEs can help you.

Project Facilitator Service Offerings

Jefferey Murrell

DOE-approved Project Facilitators (PFs)

PFs are experienced, unbiased advisors who guide the agency through the project development, implementation and M&V processes.

- Required for FEMP IDIQ ESPCs; recommended for UESC and ENABLE projects
- Technical experts that can assure good deal for the government
  - Organize process, help run meetings
  - Review all proposals and contract documents
  - Analyze deal from technologies to avoided costs
  - Promote decarbonization, renewable, and net-zero technologies
- Particularly valuable for agencies with limited performance contracting experience
- **New incentive for "qualified" agencies: FEMP will pay for PF services from acquisition planning until the start of the investment grade audit (IGA) for PFs procured by FEMP upon agency request**
- For PFs procured by FEMP, a "qualified" agency is responsible to reimburse FEMP for PF services from the start of the IGA to 1st Year M&V

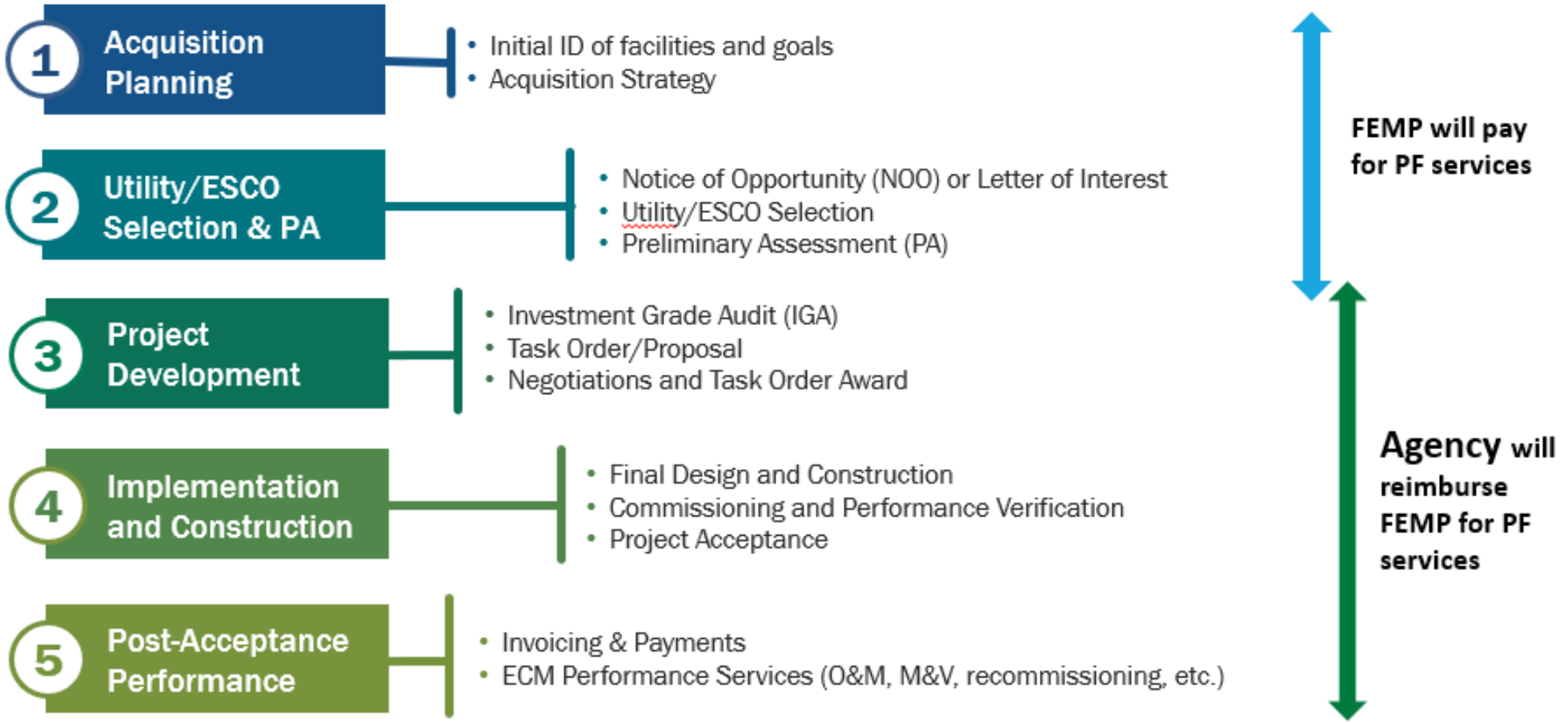
Options for Acquiring:

- Agency self-procured PF: GSA Multiple Award Schedule Special Item Number 541690E
- DOE PF (on a reimbursable basis) using Interagency Agreement (IAA) via GSA Schedule

Learn more by contacting:

- Jefferey Murrell, PF Program Manager | 202.394.2240 | jefferey.murrell@hq.doe.gov

Project Process and Key Milestones – New PF Incentive



FEMP Training and Resources

Performance Contracting Training

FEMP ON-DEMAND TRAININGS

PERFORMANCE CONTRACTING TRAINING

DISTRIBUTED ENERGY AND ENERGY PROCUREMENT RELATED TRAINING

FEMP ESPC and UESC Resources

www.energy.gov/eere/femp/utility-program-and-utility-energy-service-contracts-federal-agencies

www.energy.gov/eere/femp/energy-savings-performance-contracts-federal-agencies

Essential Education

- Project Implementation and Best Practices
- Case Studies
- Fact Sheets
- On-Demand Webinars
- On-site briefings

Topic Specific Resources

- Distributed Energy Screening Tools
- Guidance for Measurement & Verification
- Performance Assurance Planning
- Cybersecurity for Performance Contracts
- **Decarbonization Considerations: Performance Contracting**
- **Decarbonization Considerations: Onsite**

Access to FEMP Services

Technical Assistance | Training | Events

Thank You!

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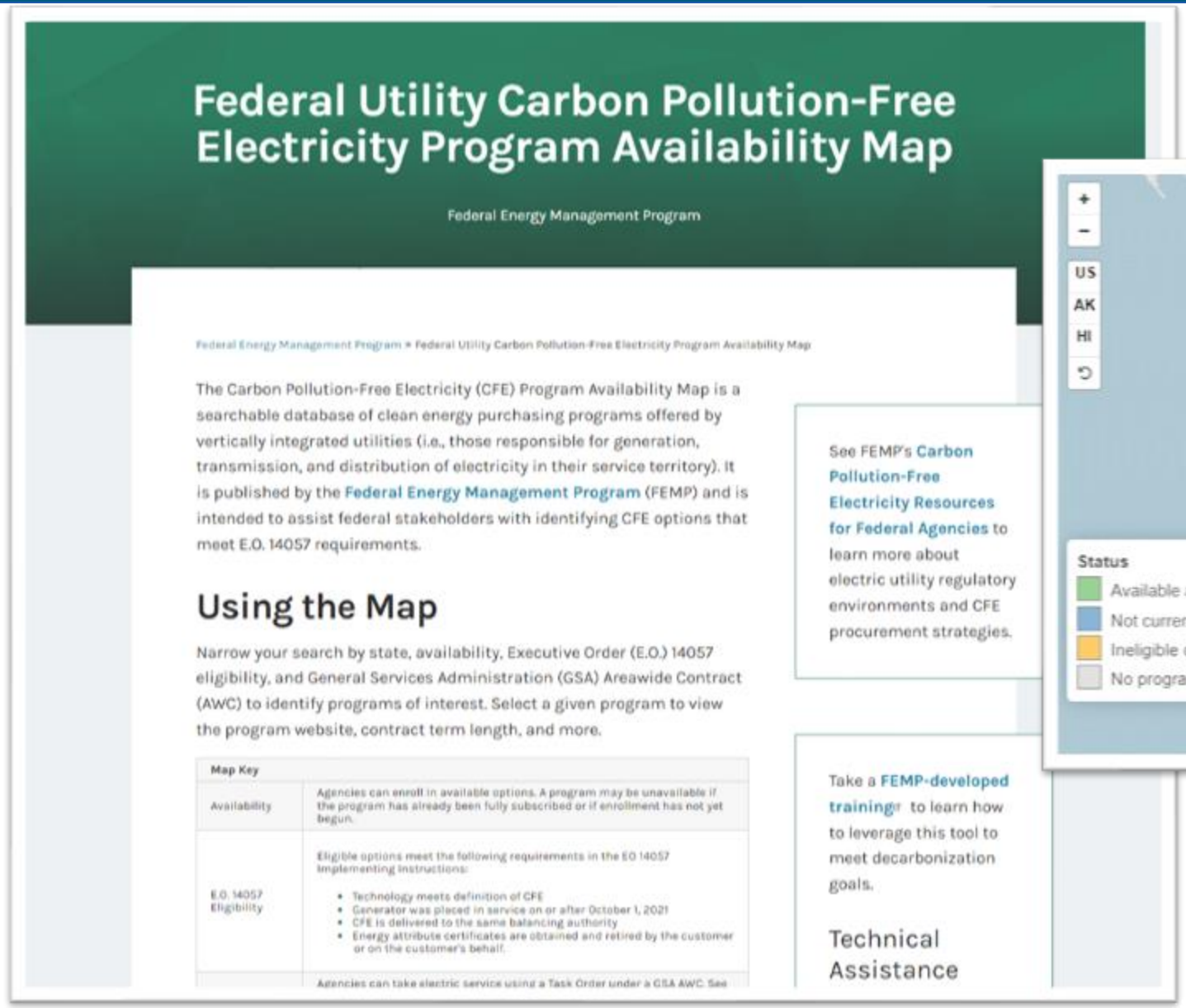
FEMP 50
50 Years of Federal Energy Management

Federal Utility Carbon Pollution-Free Electricity Program Availability Map

Tracy Niro

Map Available Online



Federal Utility Carbon Pollution-Free Electricity Program Availability Map

Federal Energy Management Program

Federal Energy Management Program > Federal Utility Carbon Pollution-Free Electricity Program Availability Map

The Carbon Pollution-Free Electricity (CFE) Program Availability Map is a searchable database of clean energy purchasing programs offered by vertically integrated utilities (i.e., those responsible for generation, transmission, and distribution of electricity in their service territory). It is published by the Federal Energy Management Program (FEMP) and is intended to assist federal stakeholders with identifying CFE options that meet E.O. 14057 requirements.

Using the Map

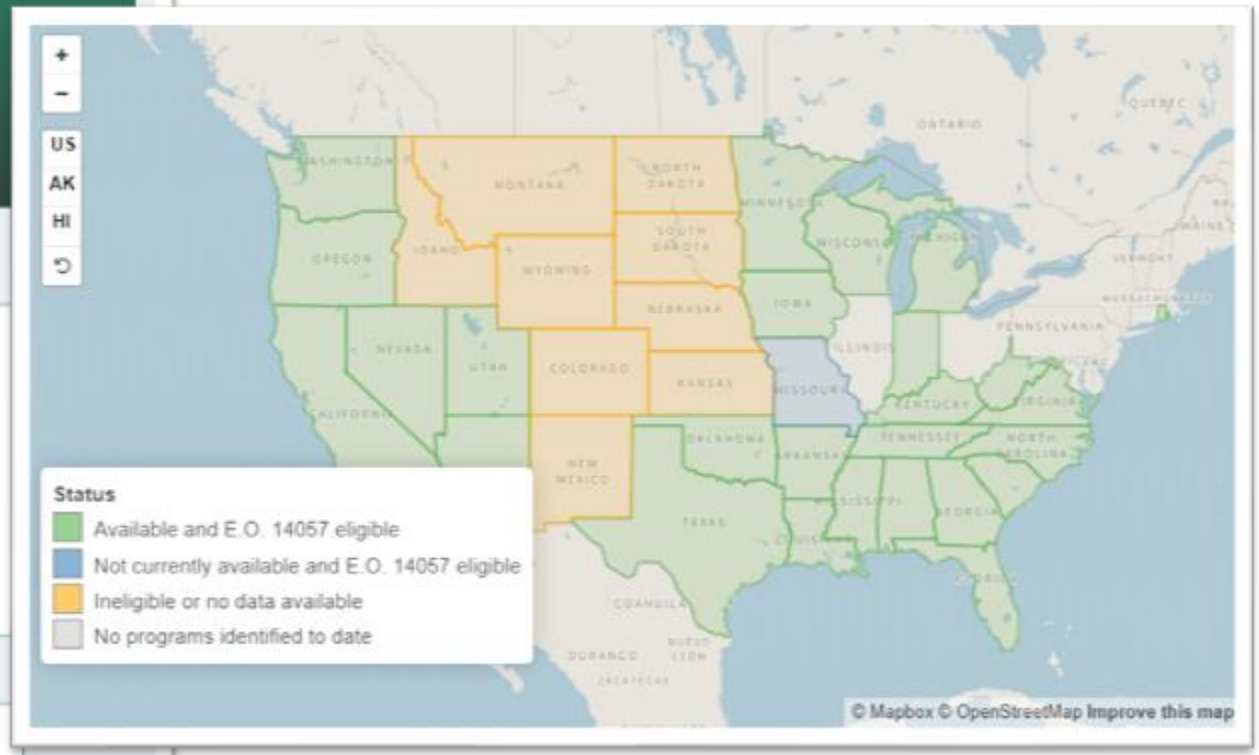
Narrow your search by state, availability, Executive Order (E.O.) 14057 eligibility, and General Services Administration (GSA) Areawide Contract (AWC) to identify programs of interest. Select a given program to view the program website, contract term length, and more.

Map Key	
Availability	Agencies can enroll in available options. A program may be unavailable if the program has already been fully subscribed or if enrollment has not yet begun.
E.O. 14057 Eligibility	Eligible options meet the following requirements in the EO 14057 implementing instructions: • Technology meets definition of CFE • Generator was placed in service on or after October 1, 2021 • CFE is delivered to the same balancing authority • Energy attribute certificates are obtained and retired by the customer or on the customer's behalf.
	Agencies can take electric service using a Task Order under a GSA AWC. See

See FEMP's Carbon Pollution-Free Electricity Resources for Federal Agencies to learn more about electric utility regulatory environments and CFE procurement strategies.

Take a FEMP-developed training to learn how to leverage this tool to meet decarbonization goals.

Technical Assistance



https://www.energy.gov/femp/federal-utility-carbon-pollution-free-electricity-program-availability-map

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FEMP 50
50 Years of Federal Energy Management

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Federal Energy Management Program