

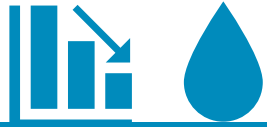
FEMP Treasure Hunt & Re-tuning Challenges

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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

- All cost-effective ECMs identified within two years
- 50% of ECMs must be accomplished through performance contracting
- Ongoing commissioning may offset the need for facility evaluations every four years



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

Treasure Hunt - Definition

Free training that engages all levels of agency staff in identifying low-to no-cost energy/water conservation measures (ECMs/WCMs)

- Application of simple O&M principles and FEMP Best Practices to identify low-to no-cost ECM/WCMs
- Utilization of simple automated tools to quantify energy, decarbonization, and electrification opportunities
- Implementation of best practices to drive all facility staff to become energy and water conscious (changing culture) for continuous identification of savings



Increase building systems resilience, operability, and efficiency

Treasure Hunt - Value

Value

Replicable no-cost/low-cost method for reducing energy & water usage, meeting decarb goals

Annual savings of up to 15% with simple payback of less than one year

Supports a change of culture that fosters routine identification of savings, decarb, and electrification opportunities

Supports compliance with current statutes (EISA 2007, EA2020, E014057)

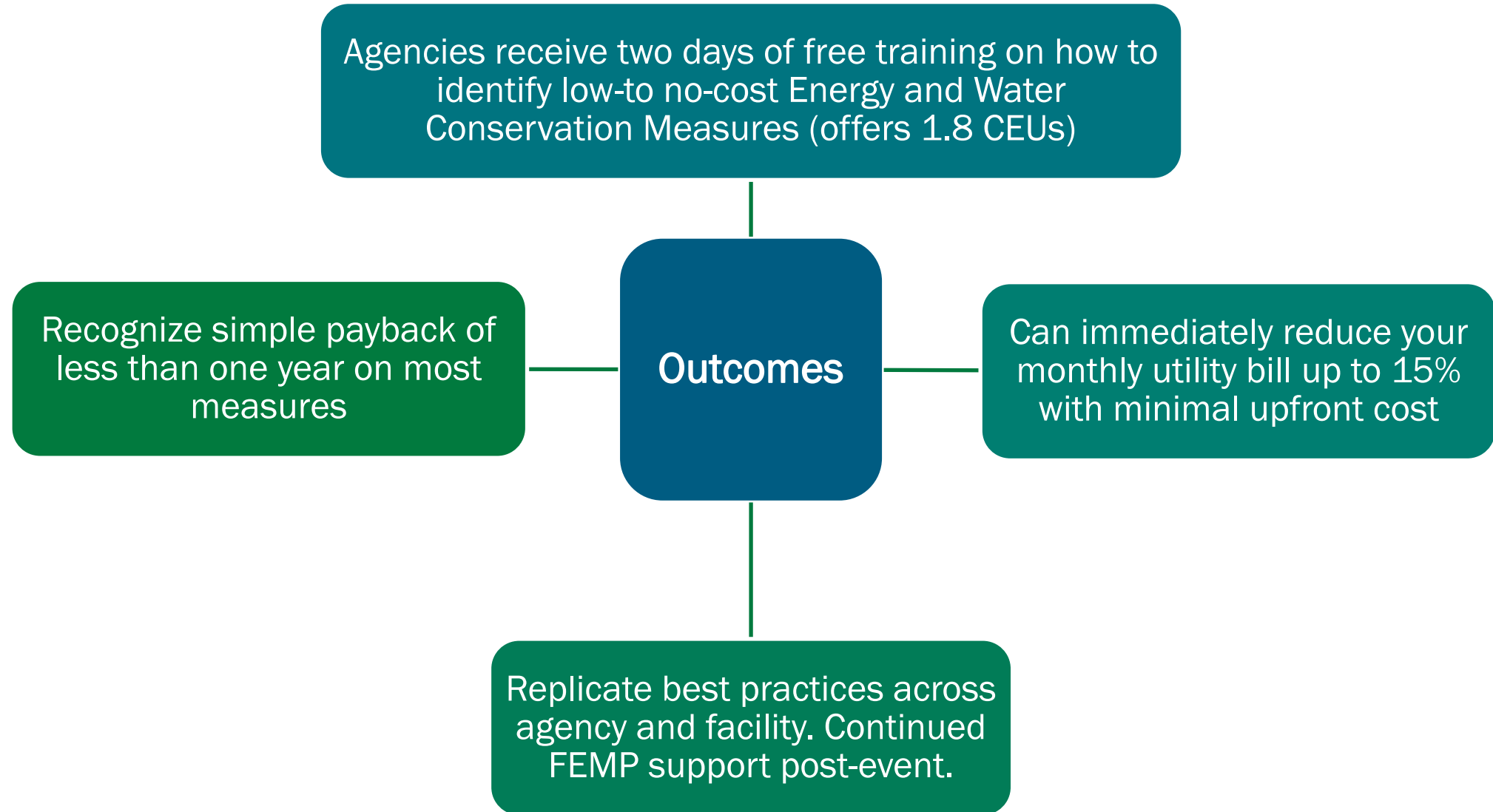
Provides leadership essential tools and information to make informed decisions

Improves O&M equipment efficiency

Contributes to agency's Energy Management Program such as 50001 Ready

Identifies potential energy capital project opportunities

FEMP Treasure Hunt Challenge



Recommended Participants – Treasure Hunt

- O&M Staff
- HVAC SME
- BAS SME
- Engineering
- Leadership
- Technicians

- Technicians
- Energy Managers
- Facility Managers
- Facility Occupants
- End Users
- Everyone

Participants Identify Energy & Water Conservation Measures (ECMs)



Teams

- Brainstorm new ideas and approaches to decarbonization and energy/water use reduction
- Analyze field- collected data
- Recognize that average annual savings has historically been up to 15%
- Utilize free user-friendly, web-based DOE MEASUR and common energy tools
- Provide out brief of findings to leadership for consideration and implementation



Treasure Hunt Success: Naval Station Newport

- Participants identified:
 - >\$144K in annual energy savings measures
 - **98.7%** of potential ECMs had a simple payback of less than 1 year.
 - Identified approaches to reduce carbon dependency and reduce overall CO2 emissions by 288 tons annually.
- Modeled a culture of energy saving while training in-house staff to replicate treasure hunt best practices across the installation.



We have completed/ongoing eight Treasure Hunts to date.

Award Winner -

Innovation of the Year Award for Learner Engagement

DOE's Federal Energy Management Program (FEMP) secured the prestigious IACET Innovation of the Year Award for Learner Engagement. This coveted award recognizes organizations that excel in creating engaging classroom environments, particularly through innovative courses. FEMP's Treasure Hunt training program exemplifies the goals of this award.

Mandated by law, FEMP plays a pivotal role in helping government agencies meet their energy and water reduction targets. FEMP's comprehensive training program, available through live and on-demand sessions, is designed to cultivate a high-performance workforce dedicated to constructing, operating, and maintaining energy-efficient and cost-effective federal facilities and fleets.



Individuals participating in a FEMP treasure hunt at the Alaska Native Tribal Medical Center in Anchorage, Alaska.

[Energy Department Recognized for Excellence in Continuing Education and Training | Department of Energy](#)

Treasure Hunt Challenge – How to Participate

Informational Webinar: April 15, 2024

Submission Deadline: May 10, 2024

Preliminary Selection Contacts Made by: May 20, 2024

Selection Announcement: May 31, 2024

First Site Visit: August – October 2024

To be selected to participate in the Treasure Hunt Challenge, the agency must:

1. Attend informational webinar on **April 15, 2024**; [registration opens soon](#). This webinar will provide an overview of both the FEMP Treasure Hunt (TH) Program and the Treasure Hunt process. **FEMP will select sites for trainings during the first year of the Challenge.**
2. Complete the initial Screening questionnaire and commitment letter by **May 15, 2024**; available on website after Energy Exchange.
3. Selected sites will be announced on **May 31, 2024**, FEMP will contact site with next steps.
4. Contact us with any questions at the th_challenge@hq.doe.gov.

Attend the Free Energy Exchange Treasure Hunt Pre-event Workshop Training – (3/25/24 – 1:00-3:00 PM)
[Energy Exchange 2024 Pre-Event Workshops | Department of Energy](#)

Re-tuning Definition

Data-driven process of improving control of existing building energy systems, centered on the building automation system (BAS) through

- Application of simple principles, embodied in best-practice re-tuning measures
- Drives identification and correction of possible O&M issues
- Adoption of strategies for better monitoring and controls (e.g., utilize trend data and training to manipulate reset parameters for “tuning”)



“Turn it off”



“Turn it down”



“Mitigate simultaneous heating and cooling”



“Reduce infiltration and outside air”

Re-tuning - Value

Value

Replicable no-cost/low-cost method for reducing energy & water usage, meeting decarb goals

Typical savings range from 5 – 25% with simple payback of 0.3 – 3.5 years

Identifies savings opportunities primarily through the building automation system (BAS)

Supports compliance with current statutes (EISA, EA2020, E014057)

Extends equipment life, through correct operations and sequencing

Identifies O&M issues

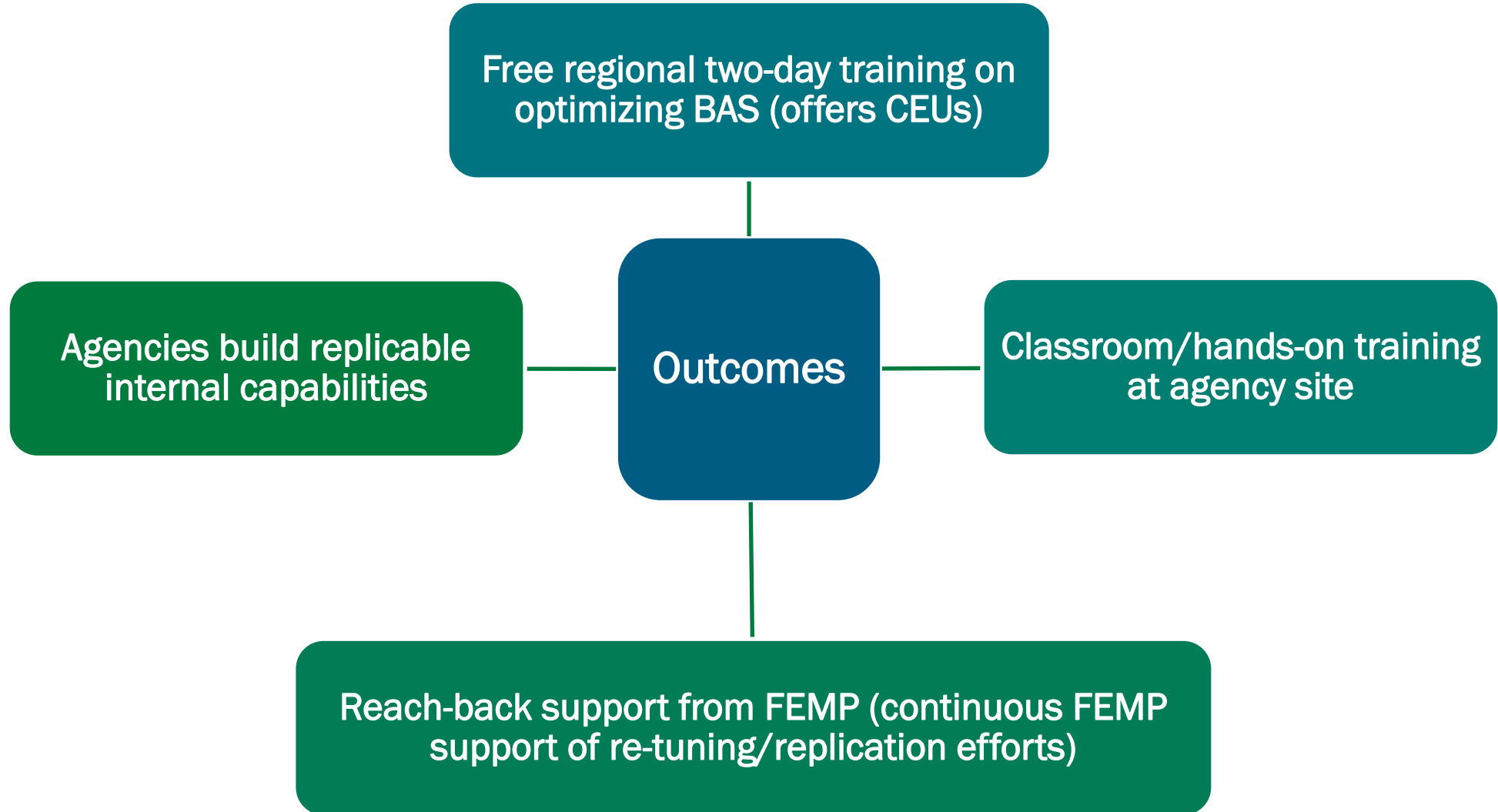
Improves occupants' comfort

Contributing approach to agency's Energy Management Program (50001 Ready)

FEMP Re-tuning Challenge

[Visit our website for more information](#) ([Re-tuning in Federal Buildings | Department of Energy](#))

[Contact us](#) if you are interested in hosting a Re-tuning Challenge at your site or want to learn more about the training

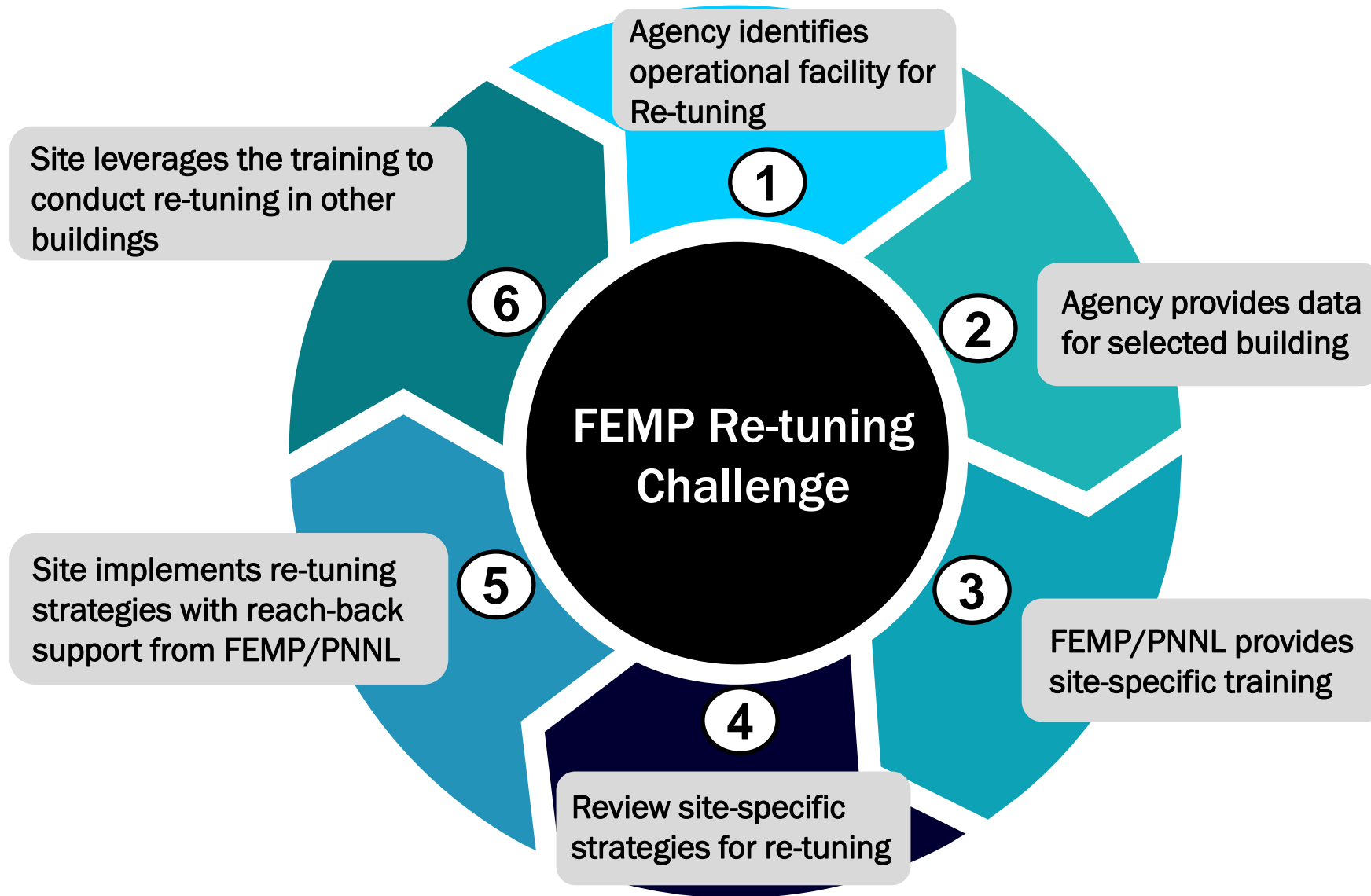


Recommended Participants – Re-tuning

- O&M Staff
- HVAC SME
- BAS SME

- Engineering
- Energy Managers
- Technicians

FEMP's Approach to Re-tuning Site Visits



Making an Impact: The Redstone Arsenal

“The FEMP team was highly knowledgeable and communicated the retuning methods and goals clearly and thoroughly. Their planning, attention to detail, and execution were top-notch, from the kickoff to the final report. They identified several retuning measures that we are in the process of implementing at the facility used for the training, and I have already identified several additional facilities to retune using in-house resources. I would strongly recommend this training to any facilities or energy organization seeking to improve energy efficiency at the buildings they manage.”

– Don Henderson, CEM, USAG-DPW Energy Manager, Redstone Arsenal.

Please note this is my individual opinion as an energy professional and does not constitute an official endorsement by the US Army or DoD.



Re-tuning Challenge Success: Arraj Courthouse (GSA)

- 15 ECMs identified
- 18.2% Validated annual energy savings
 - 10.0% electricity savings
 - 21.4% steam savings
 - 25.6% chilled water savings
- GHG emissions
 - Consistently declined post Re-tuning Challenge (savings persistence)
 - 16% reduction in FY 2020, 42% reduction in FY 2021

Contact us [Re-tuning Challenge](#)



We have completed/ongoing seven Re-tuning Challenge trainings to date.

Re-tuning Challenge– How to Participate

Informational Webinar: April 17, 2024

Office Hours for Q&A: April 24 and May 8, 2024

Submission Deadline: May 17, 2024

Preliminary Review and Contacts Made By: May 31, 2024

Selection Announcement: June 14, 2024

First Site Visit: September – November 2024

Agencies can apply for both Treasure Hunt and Re-tuning Challenge trainings.

To be selected to participate in the Re-tuning Challenge, the agency must:

1. Attend informational webinar on **April 17, 2024**, [registration opens soon](#). This webinar will provide an overview of both the FEMP Re-tuning Challenge Program and the application/selection process.
2. Complete the initial screening questionnaire by **May 17, 2024**; questionnaire will be available on the Re-tuning Challenge website after the Energy Exchange.
3. Selected sites will be announced by **June 14, 2024**; FEMP will contact the sites with next steps.
4. Contact us with any questions at fempre-tuning@hq.doe.gov

Attend the Free Energy Exchange Re-tuning Pre-event Workshop Training (3/25/24 – 3:30-5:00)
[Energy Exchange 2024 Pre-Event Workshops | Department of Energy](#)