U.S. DEPARTMENT OF ENERGY

Office of ENERGY EFFICIENCY & RENEWABLE ENERGY

# NASEO 2020 Western Regional Meeting

Amy Royden-Bloom, State Energy Program Manager

June 26, 2020

# Today's Topics

- WIP Mission
- SEP **Western** Update
- Initiatives Seeking State Feedback
- Resources:
  - SEP Appendix
  - WIP Technical Assistance Resources

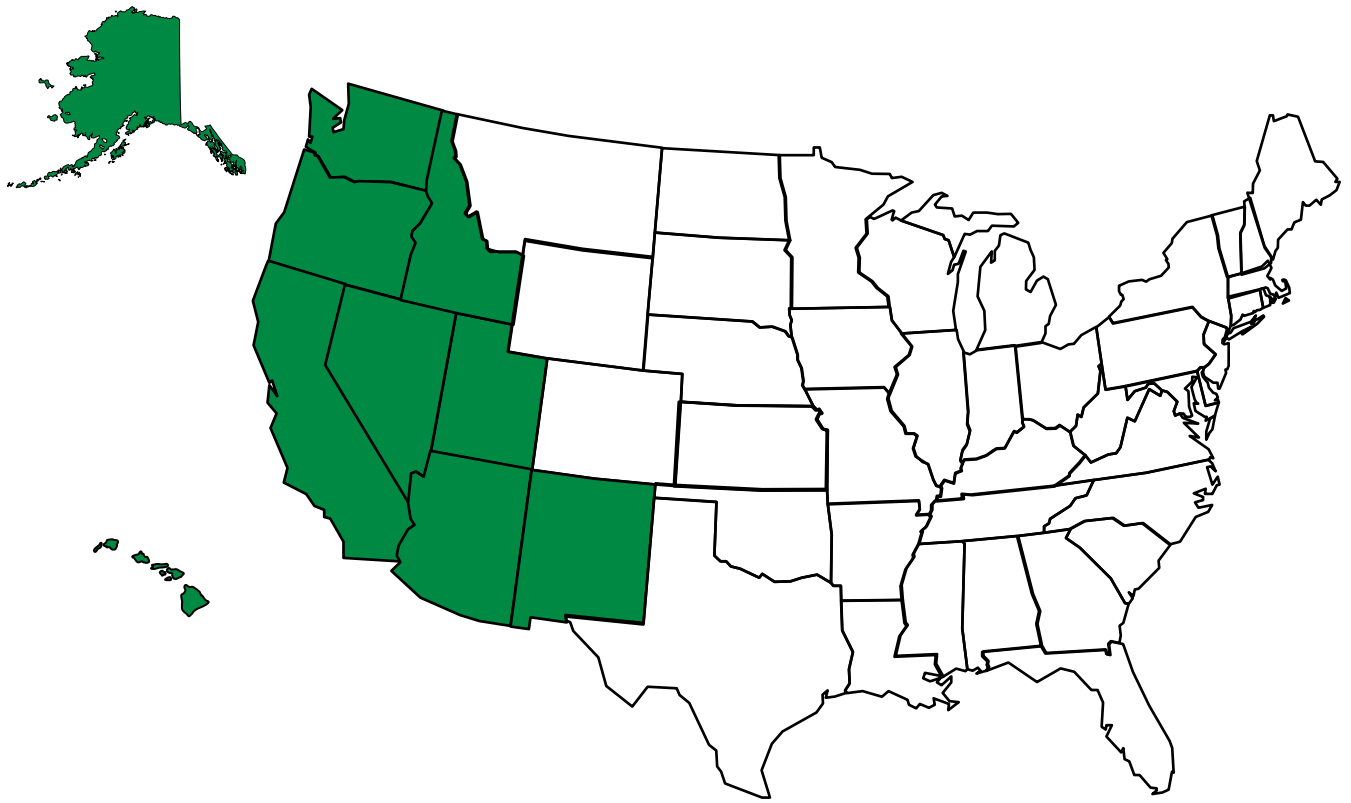
# Weatherization and Intergovernmental Programs (WIP) Office

We enable
**STRATEGIC INVESTMENTS**
in energy efficiency and renewable energy technologies through the use of **INNOVATIVE PRACTICES** across the United States and a wide range of stakeholders, in **PARTNERSHIP** with state and local organizations and community-based nonprofits.

## RESULTS:

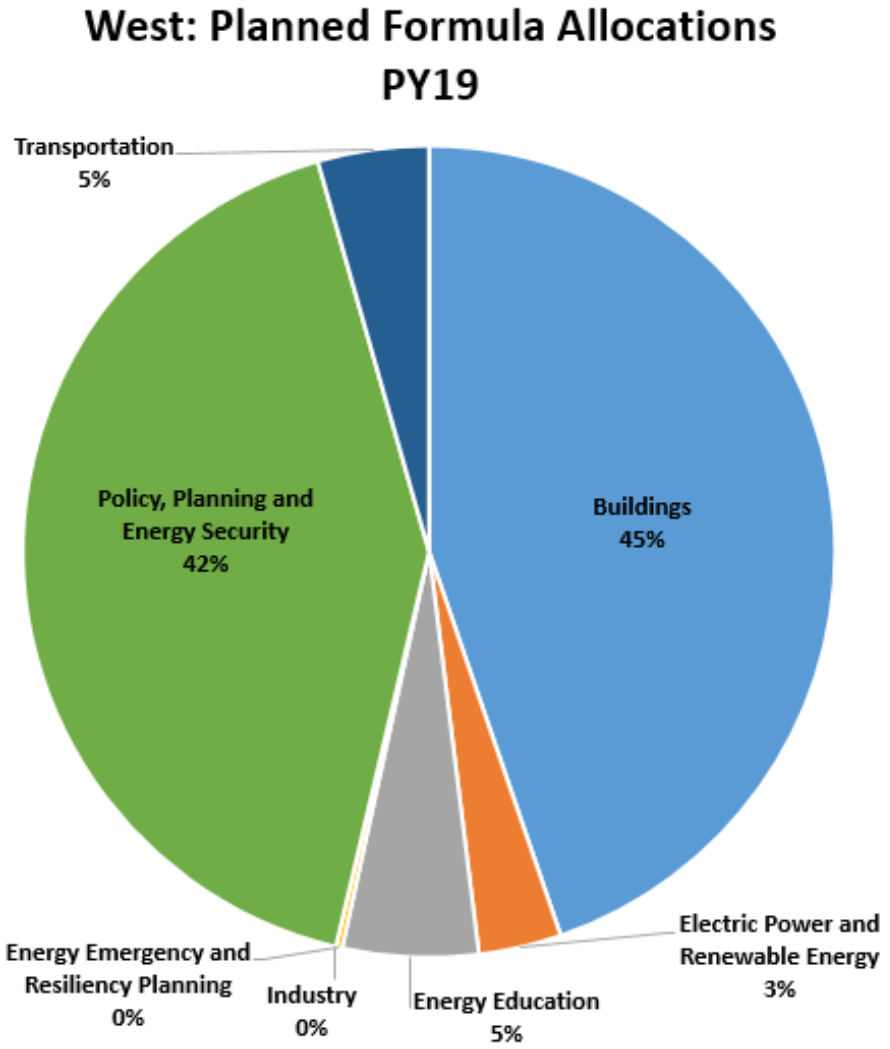
- Saving taxpayer dollars
- Making full use of domestic energy resources
- Cutting energy waste
- Improving energy independence and security
- Furthering the development of energy infrastructure

# NASEO West Region



| AK | AS | AZ | CA | GU | HI | ID | MP | NM | NV | OR | UT | WA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|

# NASEO West : PY19 Formula Market Allocation Breakdown



# NASEO West – Formula Work

## SEP Creates Jobs

- 1 job created for every $2,500 invested
- *Example: Utah*

## SEP is Cost-Effective

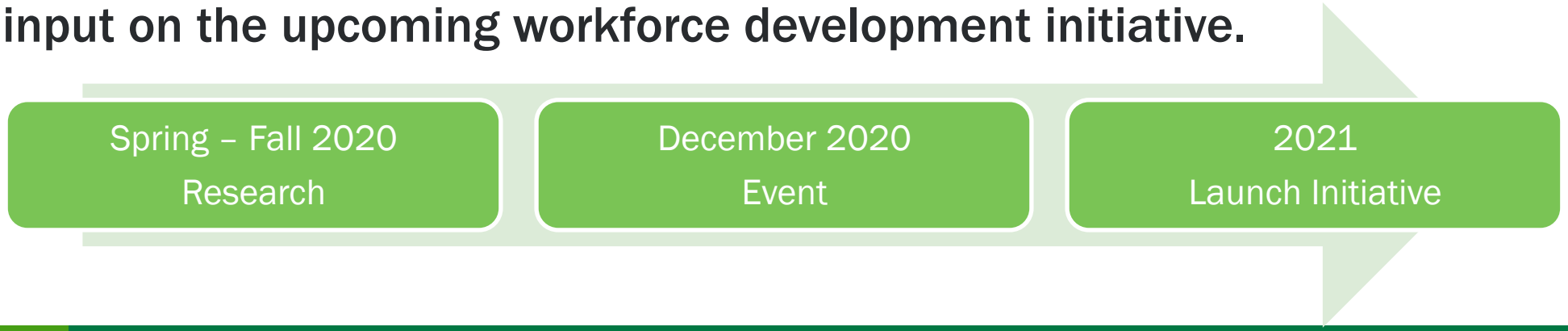
- $4.50 saved for every $1 federal invested
  - *Example: Utah*

Note: All data are from the Oak Ridge National Laboratory State Energy Program National Evaluation

# Upcoming Initiatives

# Workforce Development

- SEP is considering launching a workforce development initiative in early 2021, for SEOs to address specific workforce development challenges collaboratively.
- SEP staff is researching SEO workforce development activities and has engaged NASEO to collect additional data to analyze what is working and what gaps exist in state programs that might benefit from DOE support.
- SEP is engaging a national lab to forecast regional workforce needs for the next five to ten years.
- WIP plans host an event to convene SEOs and relevant stakeholders in Washington, D.C. in early December 2020 to share research results, facilitate peer exchange, and solicit input on the upcoming workforce development initiative.



# Workforce Development Scoping

## Targeted Workforce

- Laborers
- Electricians/construction
- Technicians/mechanical support
- Energy professionals (e.g. building operators)
- Sales, marketing, customer service
- Students (high school and above)
- Recently Unemployed

## Industries

- Energy Efficiency
- CHP
- Solar
- Electric Utilities
- Batteries/microgrids
- Wind

## Mechanisms

- Outreach
- State agency collaboration
- Partnerships

## Exclusions

- Weatherization
- Entrepreneurs
- Students below high school age
- Oil and gas
- Nuclear
- Transportation

## Activities

- Training, retraining
- Employer placement
- Curriculum development
- Career mapping

## Potential

- Renewable natural gas
- Transmission and distribution
- Manufacturing

# Technology Action Group (TAG) Model

- **In FY21 Grant Application Instructions, DOE would provide option to states to participate in a group collaboration (TAG) in *one* of the 2-3 topics.**
  - Requirements for membership in a TAG:
    - Dedication of SEP formula funds to topic of interest
      - 1% of formula allocation
      - OR At least $10,000
      - Whichever is greater
    - Agreement that participation will involve
      - Set of metrics on which to report, jointly identified by DOE and states
      - Identification of goals to meet in two years (this is usual length of an Accelerator, and is also more likely to align with SEP 3-year grant period).
- **DOE and states would jointly identify 2-3 topics of interest in which states would invest their SEP formula funds.**
- **DOE would organize Technology Action Groups (TAGs) of states around these topics of interest and provide technical assistance.**

# Possible TAG Topics for Discussion

## Supporting energy storage deployment

- SEOs analyze their states' storage industry landscape and opportunities and collaborate on identifying and developing policies and programs to better support energy deployment in their states.

## Managing peak demand with energy storage

- SEOs collaborate on studies to determine the level of energy storage necessary to reduce the amount of additional energy reserve input needed during peak demand.

## Onsite energy systems at critical facilities

- States work together to develop plans for onsite energy systems that can power critical facilities during grid outages and normal operation using lab-designed tools.

## Main Street revitalization

- SEOs work together to identify successful strategies for targeting Main Street communities and small businesses to stimulate local energy efficiency projects performed by local professionals that reduce energy bills.

## Manufactured housing affordability

- SEOs collaborate to research the most cost-effective retrofits for manufactured housing units and develop program(s) around behavior change education, technical assistance, and financial resources to lower energy bills.

# Examples of SEP formula funds dedicated to a TAG Topic (energy storage)

- $75,000 in formula grant funds to conduct an analysis in partnership with the state economic development office and academia to identify the energy storage systems currently being manufactured and deployed both in the state and out of state.
- $20,000 in the formula grant funds to develop an education and outreach guide directed at critical infrastructure and emergency shelters to inform decision makers on what forms of energy storage exist, how they work, and how to accurately estimate the economic benefits of energy storage and resiliency.
- $10,000 in formula grant funds to hire a part-time graduate student to model ways to utilize energy storage assets, existing or new, to reduce the top 100 hours of peak demand in the state.

# Proposed TAG Roles and Activities

- **DOE**
  - Organize the TAG and associated activities (calls, webinars, etc.)
  - Facilitate technical assistance (National Labs, others)
  - In collaboration with the participating states, identify TAG goals and metrics
- **Participating States**
  - Dedicate formula funds to the TAG topic
  - Participate in development and execution of the TAG
  - Track staff time spent on the TAG
  - Track progress towards TAG goals
  - In collaboration with DOE, identify TAG goals and metrics
- **Observers/Mentors**
  - Contribute to TAG discussions

# Field Technology Validation – Seeking State Partners!

- **SEP is seeking SEO partners to field test DOE-supported energy-saving technologies.**
  - Building energy management system, spray-foam insulation, and thin-film triple-pane windows.
- **SEP and NASEO hosted joint webinars in March and April to review technologies and site requirements.**
  - Thank you to all the states that participated: AL, CA, FL, HI, ID, IL, ME, MN, NJ, SC, VA, WA. Hawaii in initial discussions with SEP/LBNL about site hosts.
- **Effort is part of a broader collaboration between DOE EERE and states.**
  - EERE Offices are WIP, Building Technologies Office, Advanced Manufacturing Office, Federal Energy Management Program) and multiple National Labs
  - Stay tuned for more information

# SEP Market Title Project

**GOAL:** Achieve greater consistency in the use of **Market Titles** or **Activities** so that the SEOs and WIP are better positioned to share the impacts of SEP with state legislators and governors, U.S. DOE leadership, other federal agencies, the U.S. Congress, and others.

- State-led effort, coordinated by the Tennessee SEO and NASEO with DOE's guidance and participation. Reporting system (i.e., PAGE) last updated 10 years ago.
- Ensures that emerging policies and programs in such areas as **Energy Security** and **Workforce Development** are uniformly captured, and best practices and replicable models are shared.
- Reduces 595 self-named Market Titles to 8 consistent "**Activities**" while maintaining flexibility in choice of sector, community, fuel, technology, or application.
- Overview presentation for states held at 2019 NASEO Summer Conference and 2020 NASEO Winter Conferences, in addition to a Webinar for all SEO's.
- Pre-production or "beta" site developed for state working group testing underway.
- Next step is to develop "PAGE Application Instructions".

# Energy Storage Grand Challenge

- **The vision for the Energy Storage Grand Challenge (ESGC) is to create and sustain global leadership in energy storage utilization and exports, with a secure domestic manufacturing supply chain that is independent of foreign sources of critical materials, by 2030.**
  - The ESGC set goals for the U.S. to reach by 2030 in: Technology Development and Transfer, Policy and Valuation, Manufacturing and Supply Chain, and Workforce.
  - The ESGC is managed by DOE's Research and Technology Investment Committee.
- **White Paper on Policy and Valuation**
  - SEP and NASEO solicited SEO input and received feedback from CA, CO, LA, MD, NM, NY, PR, TN and WA. Further input is welcome.
- **Recent Workshops**
  - On May 13th a workshop summarized 6 energy storage use cases.
  - Regional workshops were held in May for the South/Southwest, Pacific/Northwest, Midwest/Northeast.

# Resources

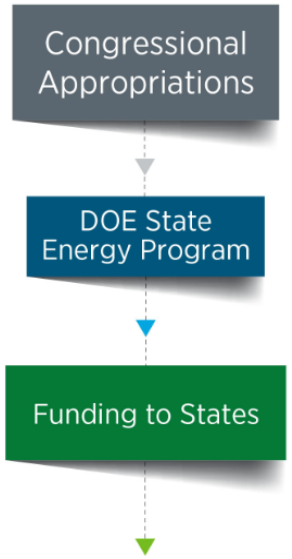
## State Energy Program

## WIP Technical Assistance Resources

# WIP Budget Summary

| Breakdown | FY 2017 Enacted | FY 2018 Enacted | FY 2019 Enacted | FY 2020 Enacted |
|---|---|---|---|---|
| State Energy Program | $50M | $55M | $55M | $62.5M |
| Weatherization Assistance Program | $225M | $248M | $257M | $305M |
| Total, Weatherization and Intergovernmental | $275M | $303M | $312M | $371M |

# SEP FY20 Formula Funding



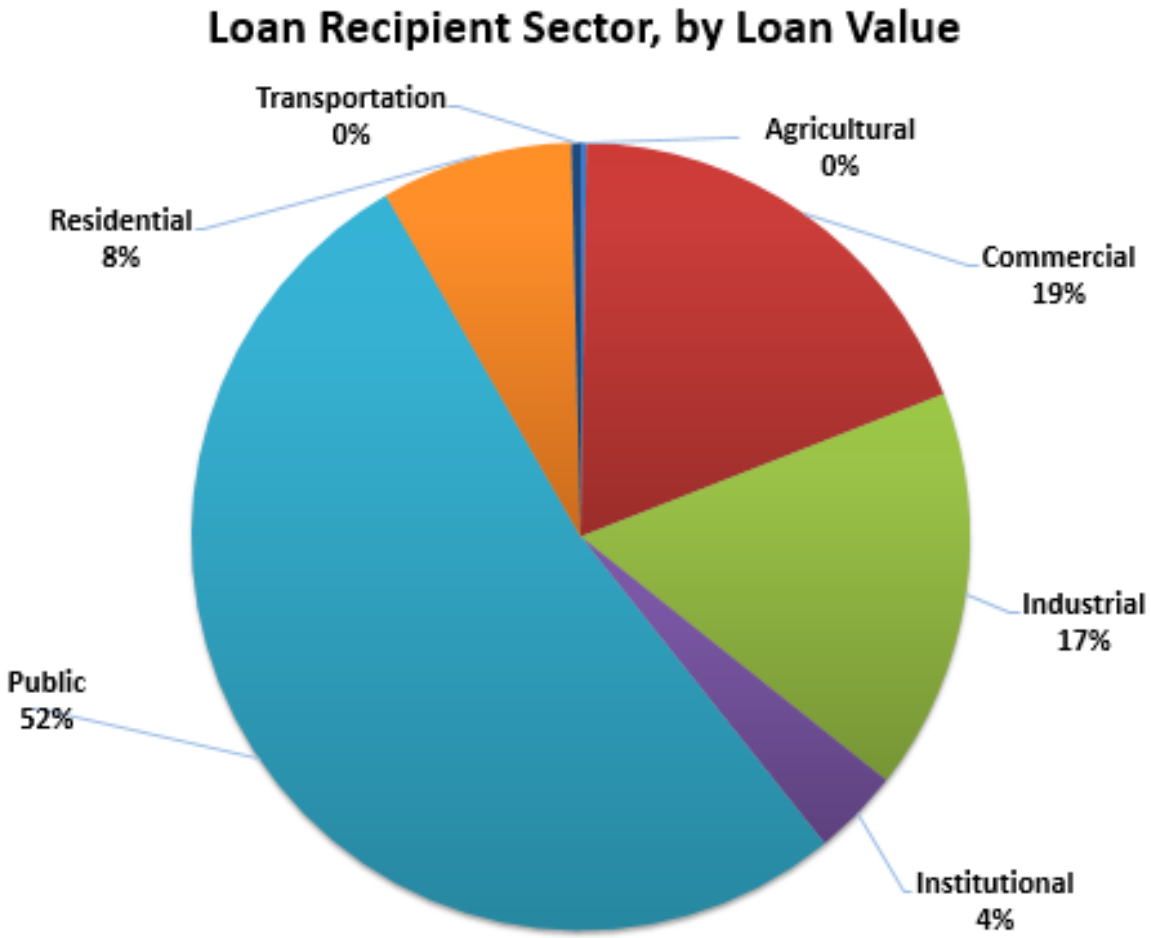


- **FY20 Grant Application Instructions and the Administrative and Legal Requirements Document (ALRD) were released on February 3, 2020, including 2020 allocations at $56M.**

- **Application due dates:**

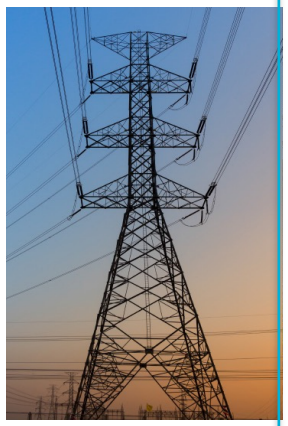
| SEP Program Year Ending | Application Due Date |
|---|---|
| June 30, 2020 | April 7, 2020 |
| August 31, 2020 | April 21, 2020 |
| September 30, 2020 | May 5, 2020 |

# Status of SEP National Revolving Loan Funds (RLF)




- $690 million in ARRA funding has been budgeted to 37 state-run financing programs
- $578 million of available funds for RLF Programs
- 130.41% of available RLF funds have been loaned out to date

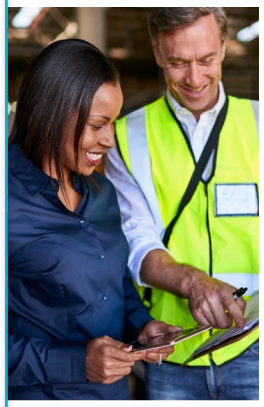
# National SEP Successes Since 2017



**Increased** energy efficiency in 22,000+ buildings (87M square feet)

**Installed** 27,000+ renewable energy systems (783,000 kilowatt hours)

**Educated** >1,385,000 people in performing energy audits and upgrades



- ✓ States implemented energy security, resiliency, and emergency preparedness plans;
- ✓ Developed state-led strategic energy initiatives;
- ✓ Invested in expanded use of energy resources abundant in states;
- ✓ Piloted innovative energy projects within the private sector, K-12 schools and universities; and
- ✓ Developed 12 Implementation Models that serve as “how-to” guides for states who wish to replicate the programs achieving energy efficiency savings.

# NASEO West: New Success Stories

## New Mexico Reduces Energy Use in Local Government Buildings

NOVEMBER 18, 2019

Home » New Mexico Reduces Energy Use in Local Government Buildings



Storage system at the Bernalillo County Metropolitan Detention Center. Photo courtesy of EMNRD, 2019.

Paying for energy efficiency upgrades that save money in the long term can be difficult for local governments that are already stretched thin in the short term. Energy Savings Performance Contracting (ESPC)—a budget-neutral approach to making efficiency improvements by using energy savings to pay for projects over time—can be a financial solution to help local governments reduce energy and water use and increase their operational efficiency.

New Mexico's Energy, Minerals, and Natural Resources Department (EMNRD) sought to expand the use of ESPC across the state's local governments. With a competitive financial investment from the U.S. Department of Energy's (DOE's) State Energy Program within the Office of Energy Efficiency and Renewable Energy, EMNRD created the Local Energy Efficiency Performance (LEEP) pilot program. LEEP connected local governments to third-party professional engineers competitively selected by EMNRD to act as independent reviewers of energy audit findings, ESPC contracts, and other steps in the ESPC process.

## Combining Solar and Energy Storage Systems to Save Money in California

OCTOBER 16, 2019

Home » Combining Solar and Energy Storage Systems to Save Money in California




Nestled on the southern coast of California, the City of Del Mar is prime for solar power opportunity. In 2017, the city leveraged that opportunity to increase energy supply reliability and save energy and money. With financial assistance from the U.S. Department of Energy's (DOE) Office of Energy Efficiency and Renewable Energy's (EERE) State Energy Program, Del Mar installed a 62.6 kilowatt photovoltaic (PV) system and a 120 kilowatt hour battery energy storage system on the roof of its City Hall building. The measures are expected to achieve a 90% reduction in energy use from the grid and an annual reduction of 30 metric tons of carbon dioxide emissions.

This project was a collaborative effort between the City of Del Mar and the Center for Sustainable Energy in San Diego to showcase the energy savings and performance metrics that can be provided by PV/energy storage systems. The two teams applied lessons learned from City Hall to other building projects throughout the city. DOE funds were also used to design and build an exhibit at the Del Mar Civic Center that includes an interactive kiosk, interactive displays, and an educational energy dashboard.

"We've been hearing over and over again about this beautiful, new facility and how well it fits with our community," said Del Mar Councilwoman Sherryl Parks.

This project is expected to provide more than $625,000 in energy savings over the next 25 years. It will also serve as a demonstration project to achieve other goals for both residential and non-

# NASEO West: Competitive Award Breakdown (2013–2017)

## *19 Competitive Awards totaling $6M*

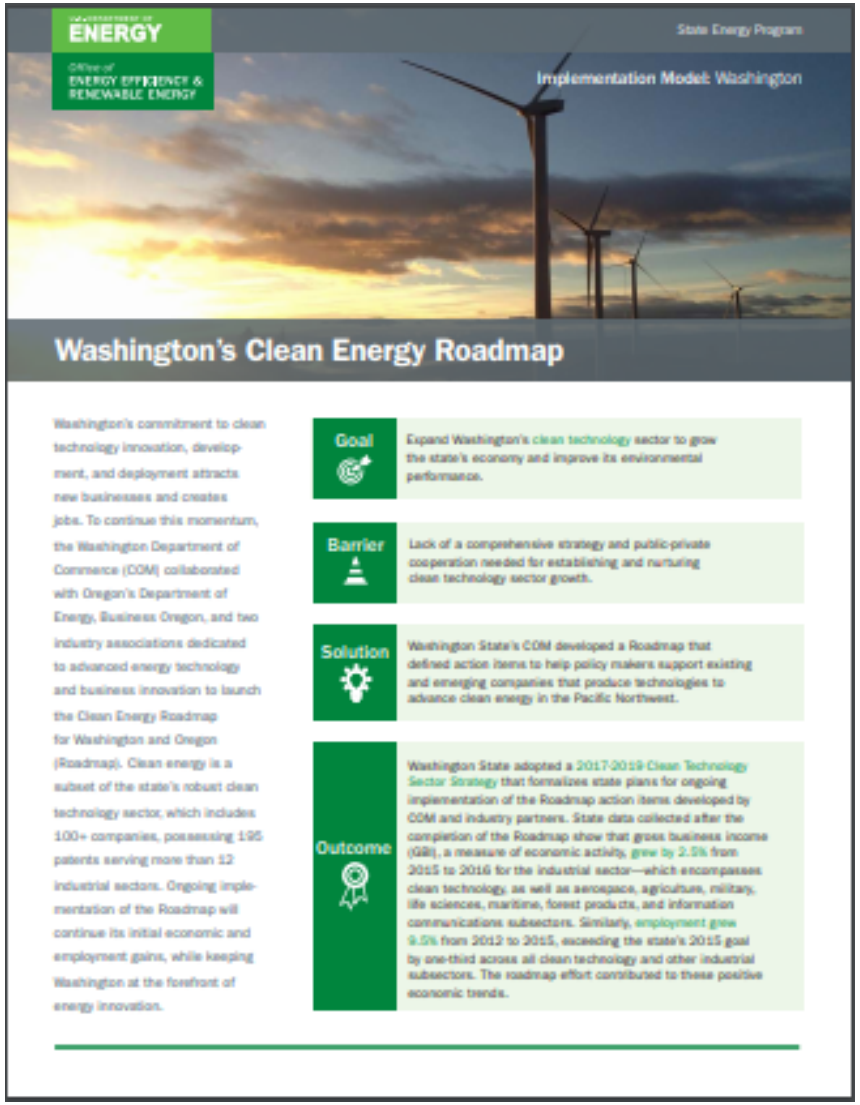
### Awards by Topic Area (2013-2017)

| | |
|---|---|
| Advancing Industrial EE and CHP | OR |
| Benchmarking & Disclosure | WA |
| Clean Energy Economic Opportunity Road Maps | WA |
| Financing | AK, NM |
| State Energy Planning | HI, ID, NM, UT |
| Technical Assistance to Advance SEP Formula Activities | GU, UT |
| Working with Local Governments | AK, NM |
| Wastewater | NM |
| Advancing Industrial EE and CHP | OR |

### Outcomes so far (select examples)

- ✓ *Washington* developed a Roadmap that defined action items to help policymakers support existing and emerging companies that produce technologies to advance clean energy in the Pacific Northwest. State data show that GBI grew 2.5% from 2015 to 2016. Similarly, employment grew 9.5% from 2012 to 2015, exceeding the state's 2015 goal by one-third across all clean technology and other industrial subsectors.
- ✓ *Hawaii* and partners developed a beta version of visualization tool (HAVEN) on policy choices/tradeoffs necessary for energy system transformation in Hawaii
- ✓ *New Mexico's* Local Energy Efficiency Performance (LEEP) program, helps local governments increase use of ESPCs which assures 20% or more energy savings in retrofit projects.

# NASEO West: SEP Implementation Models (IM)



ENERGY

Office of Energy Efficiency & Renewable Energy

State Energy Program

Implementation Model: Washington

## Washington's Clean Energy Roadmap

Washington's commitment to clean technology innovation, development, and deployment attracts new businesses and creates jobs. To continue this momentum, the Washington Department of Commerce (COM) collaborated with Oregon's Department of Energy, Business Oregon, and two industry associations dedicated to advanced energy technology and business innovation to launch the Clean Energy Roadmap for Washington and Oregon (Roadmap). Clean energy is a subset of the state's robust clean technology sector, which includes 100+ companies, possessing 195 patents serving more than 12 industrial sectors. Ongoing implementation of the Roadmap will continue its initial economic and employment gains, while keeping Washington at the forefront of energy innovation.

**Goal**

Expand Washington's clean technology sector to grow the state's economy and improve its environmental performance.

**Barrier**

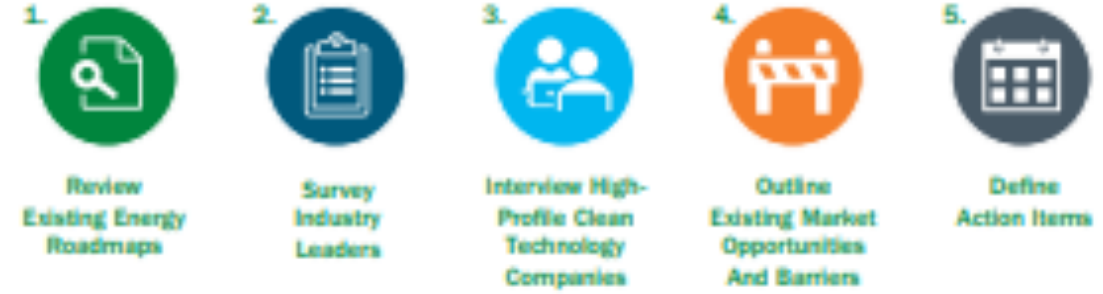
Lack of a comprehensive strategy and public-private cooperation needed for establishing and nurturing clean technology sector growth.

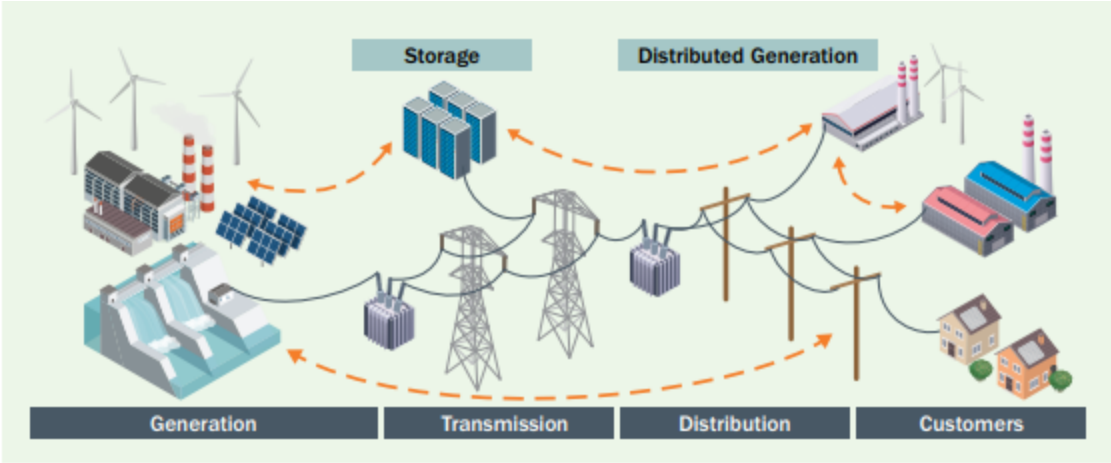
**Solution**

Washington State's COM developed a Roadmap that defined action items to help policy makers support existing and emerging companies that produce technologies to advance clean energy in the Pacific Northwest.

**Outcome**

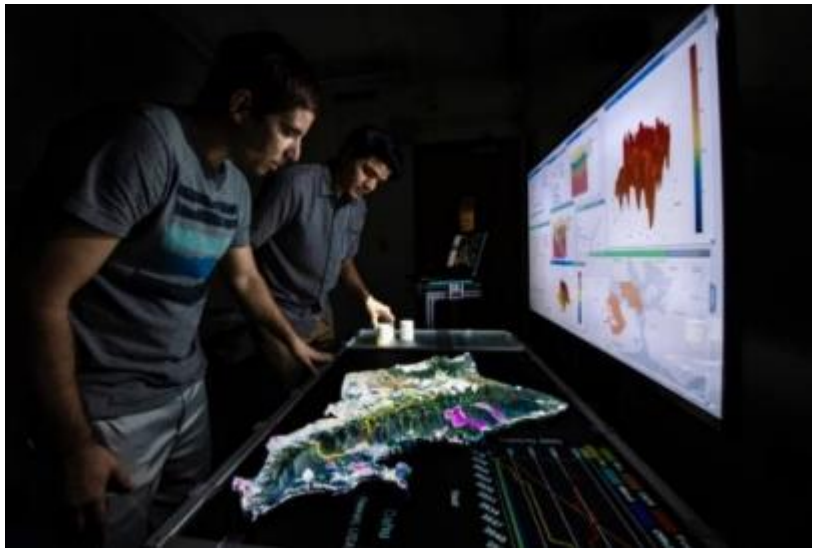
Washington State adopted a 2017-2019 Clean Technology Sector Strategy that formalizes state plans for ongoing implementation of the Roadmap action items developed by COM and industry partners. State data collected after the completion of the Roadmap show that gross business income (GBI), a measure of economic activity, grew by 2.5% from 2015 to 2016 for the industrial sector—which encompasses clean technology, as well as aerospace, agriculture, military, life sciences, maritime, forest products, and information communications subsectors. Similarly, employment grew 9.5% from 2012 to 2015, exceeding the state's 2015 goal by one-third across all clean technology and other industrial subsectors. The roadmap effort contributed to these positive economic trends.

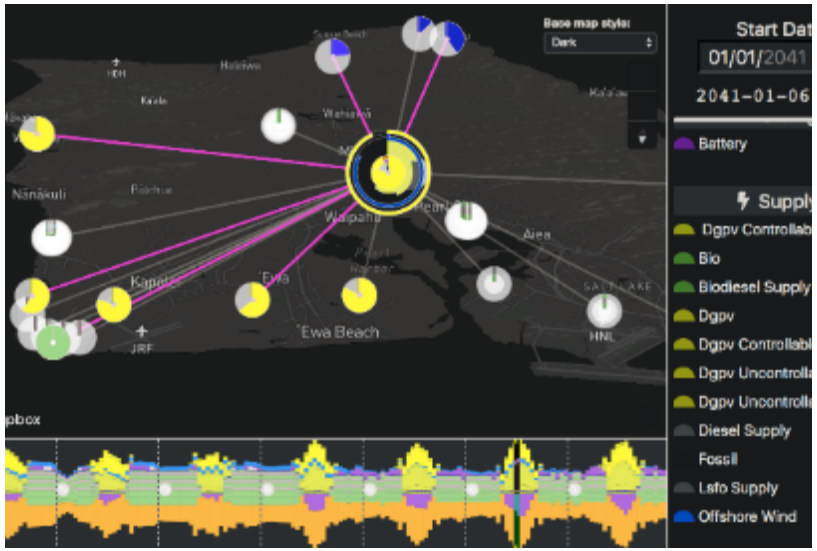


# SEP Planning Tools and State-Specific Access to NREL

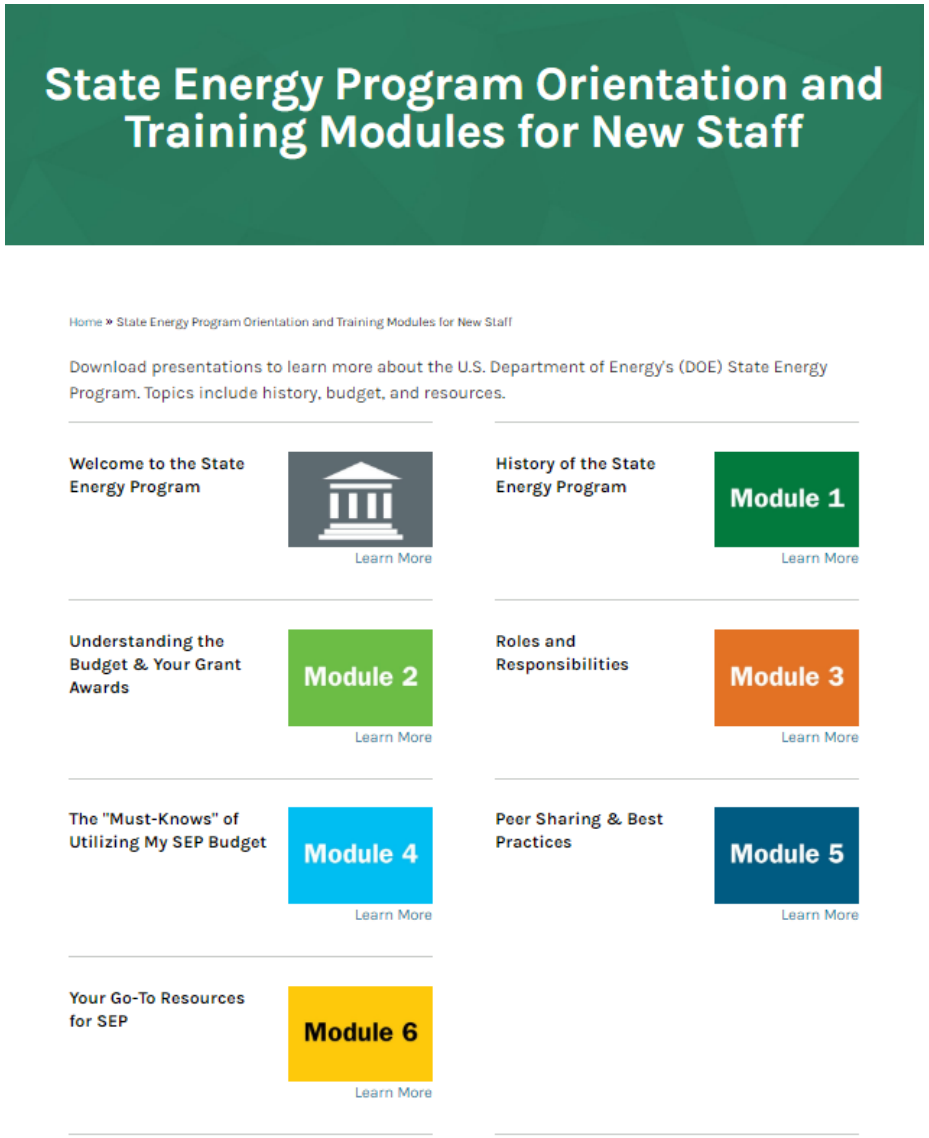
- Hawaii Advanced Visualization Energy Nexus (HAVEN) uses a 3D table top model to communicate the tradeoffs of state resource plans. (SEP Competitive Award).
- Engage is a web-based energy-transport optimization model for system capacity planning. (DOE Energy Transitions Initiative)
- Engage models plans; HAVEN visualizes them.
- Low-cost training for HAVEN/Engage is available using SEP or other funds through NREL's new streamlined contracting method.





# SEP Training Resources for New Staff

- **SEP Orientation and Training Module:**
  - A web-based training created specifically for new State Energy Office staff to provide a foundation and understanding of the key critical elements to managing and implementing the State Energy Program.
  - Access it here: https://www.energy.gov/eere/wipo/state-energy-program-orientation-and-training-modules-new-staff



# WIP Technical Assistance Resources

# WIP Technical Assistance

**OUR GOAL:** Maximize energy and cost savings

WIP provides technical assistance that:

1. Offers **TOOLS AND SOLUTIONS** to barriers facing states, local governments, and K-12 schools
2. Convenes and creates **PEER EXCHANGES** to showcase public-sector leadership and effective public-private partnerships
3. Provides information from leading **TECHNICAL EXPERTS**

We help states, local governments, and K-12 schools:

Develop an Energy Plan

Design and Implement Energy Programs

Pay for Energy Infrastructure

Access and Use Energy Data

# Sustainable Wastewater Infrastructure of the Future (SWIFt) Accelerator

70+ wastewater treatment facilities across 25 state, regional, and local partners collectively achieved more than 8% (86 million kWh) in energy savings and put in place plans to achieve long-term energy savings of 30%

Scoping for SWIFt Phase 2 is ongoing and will continue this momentum by leveraging the tools, resources, and lessons learned to benefit the broader wastewater sector

*Coming Soon* Wastewater Energy Management Toolkit (Summer 2020)

https://betterbuildingssolutioncenter.energy.gov/accelerators/wastewater-infrastructure

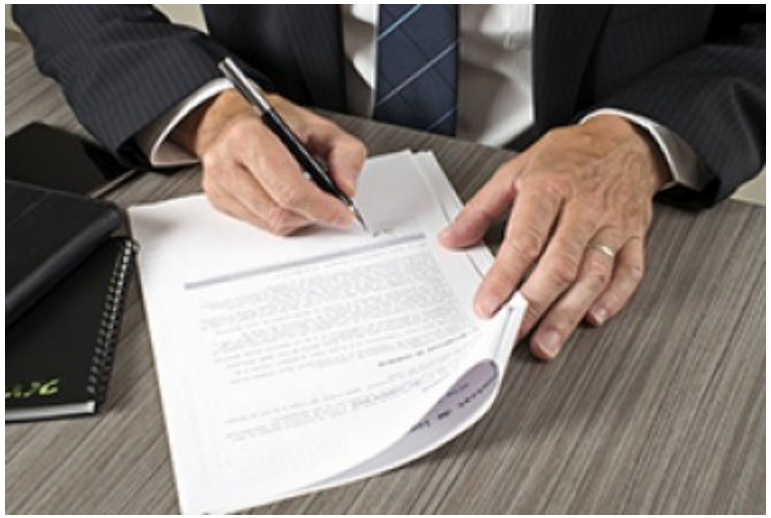
# Sustainable Corrections Infrastructure Partnership (SCIP) Accelerator

State and federal agencies will work with DOE over three years to strive for portfolio-wide energy savings of 20% and collective cost savings of more than $250 million a year

Formal launch TBD (potentially late 2020), based on COVID-19 and state considerations

*For more information, contact* Alice.Dasek@ee.doe.gov (Announced Summer 2020)

# Available Toolkits



## Energy Savings Performance Contracting (ESPC) Toolkit

Best practices that partners used to establish and implement ESPC, including a host of M&V resources

https://betterbuildingssolutioncenter.energy.gov/energy-savings-performance-contracting-espc-toolkit

## Clean Energy for Low Income Communities Accelerator (CELICA) Toolkit

Case studies, issue briefs, data tools, and templates on advancing energy affordability and equitability for low-income households

https://betterbuildingsinitiative.energy.gov/CELICA-Toolkit

## Outdoor Lighting Toolkit

Decision tools, lessons learned, and other resources on upgrading street lights to modern, high-performance systems

https://betterbuildingssolutioncenter.energy.gov/outdoor-lighting-toolkit

# Resource Highlights

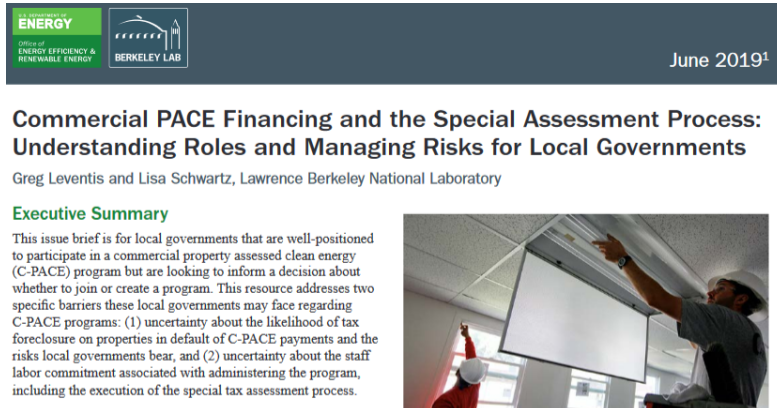
## Commercial Property Assessed Clean Energy (C-PACE) Working Group

C-PACE Working Group: Year in Review

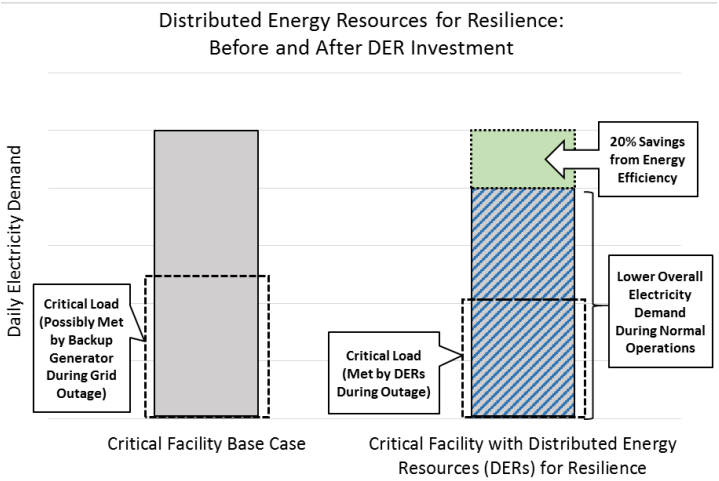
C-PACE Financing and the Special Assessment Process

Lessons in C-PACE Leadership: The Path from Legislation to Launch

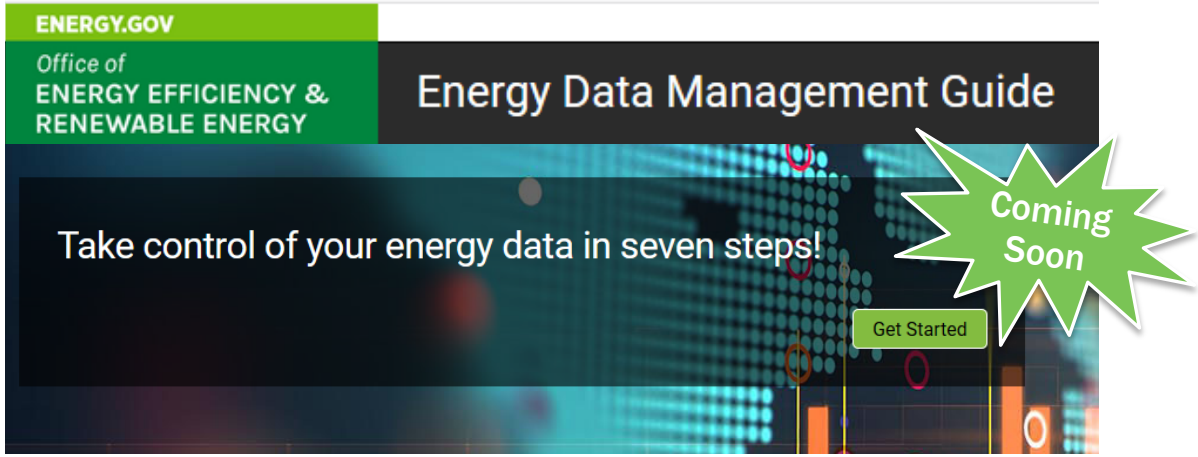
Toolkit: C-PACE Financing for Resiliency




## How Distributed Energy Resources Can Improve Resilience in Public Buildings: Three Case Studies and a Step-by-Step Guide




## Energy Data Management Guide

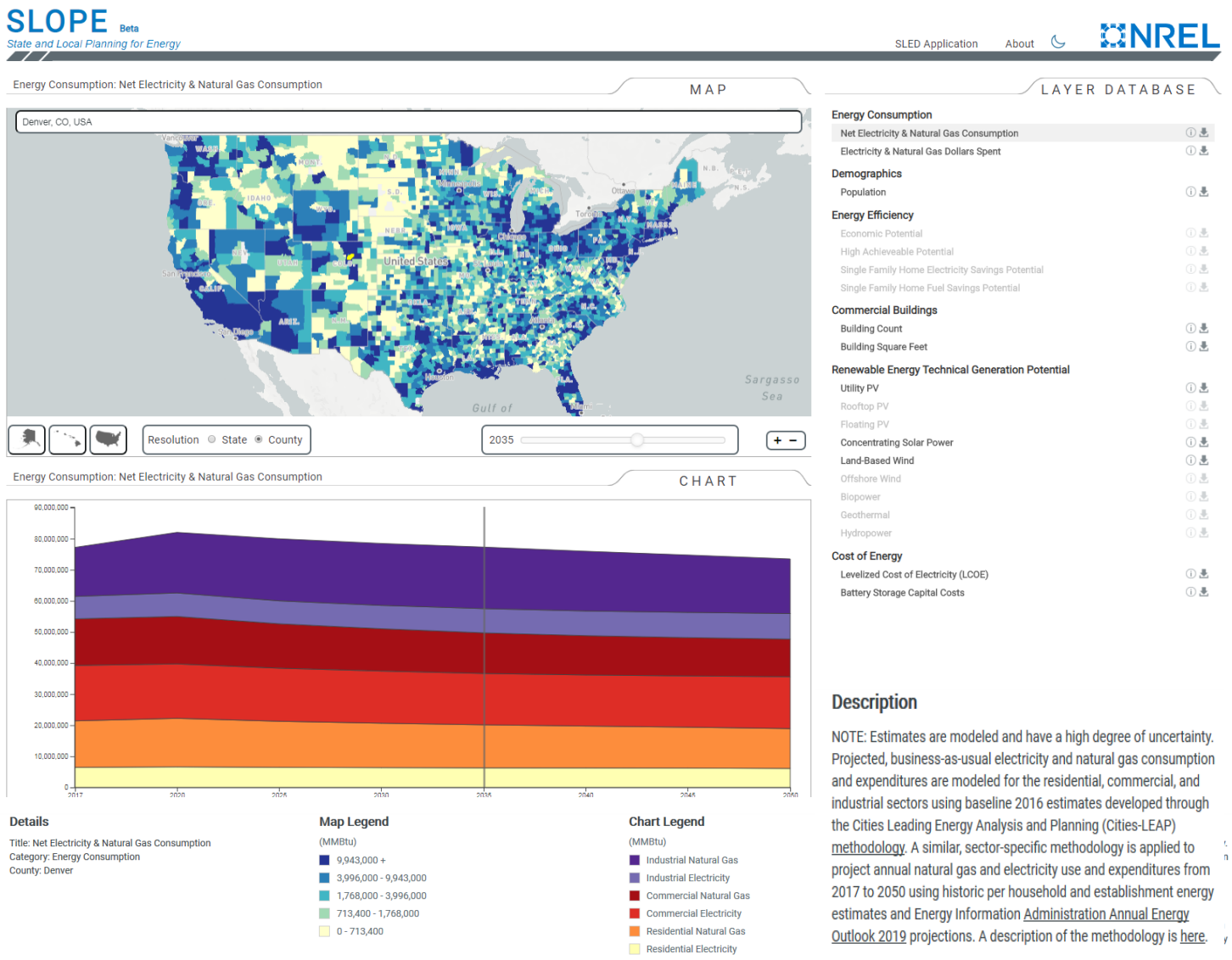


# State and Local Planning for Energy (SLOPE) Platform

A DOE-led collaboration across 8 EERE technology offices and NREL to create a *dynamic, comprehensive energy planning platform* of integrated, localized data for state and local decision makers

- **Phase I:** Includes electricity and natural gas consumption, projected population, energy efficiency potential, renewable energy technical generation potential, and levelized cost of energy (Beta launched Jan. 2020)
- **Phase II:** Adding transportation and generation mix data; enabling user-saved settings (under development in 2020)

Access the Platform:
https://gds.nrel.gov/slope
Comments or Questions?
slope@nrel.gov



# Virtual Better Buildings Summit: June 8-11

**No cost to register; already 1,500+ registrants! Sessions potentially of interest to state attendees:**


**The Road to Resilience: Setting Energy Savings as a Strategic Priority for Wastewater Treatment Plants** (Tuesday, June 9; 1:00–2:30 p.m.)

**Building a Clean Energy Workforce** (Tuesday, June 9; 11:00–12:30 p.m.)

**Distributed Energy Resources for Cost Savings and Resilience** (Tuesday, June 9; 1:00–2:30 p.m.)

**What's New in Energy Efficiency Finance?** (Tuesday, June 9; 3:00–4:30 p.m.)

**Stump the Chumps: How to Optimize Critical Facilities** (Wednesday, June 10; 3:30–4:30 p.m.)

**Approaches for Achieving Zero Energy Ready: Maximizing Efficiency and Controlling Costs** (Thursday, June 11; 11:00–12:30 p.m.)

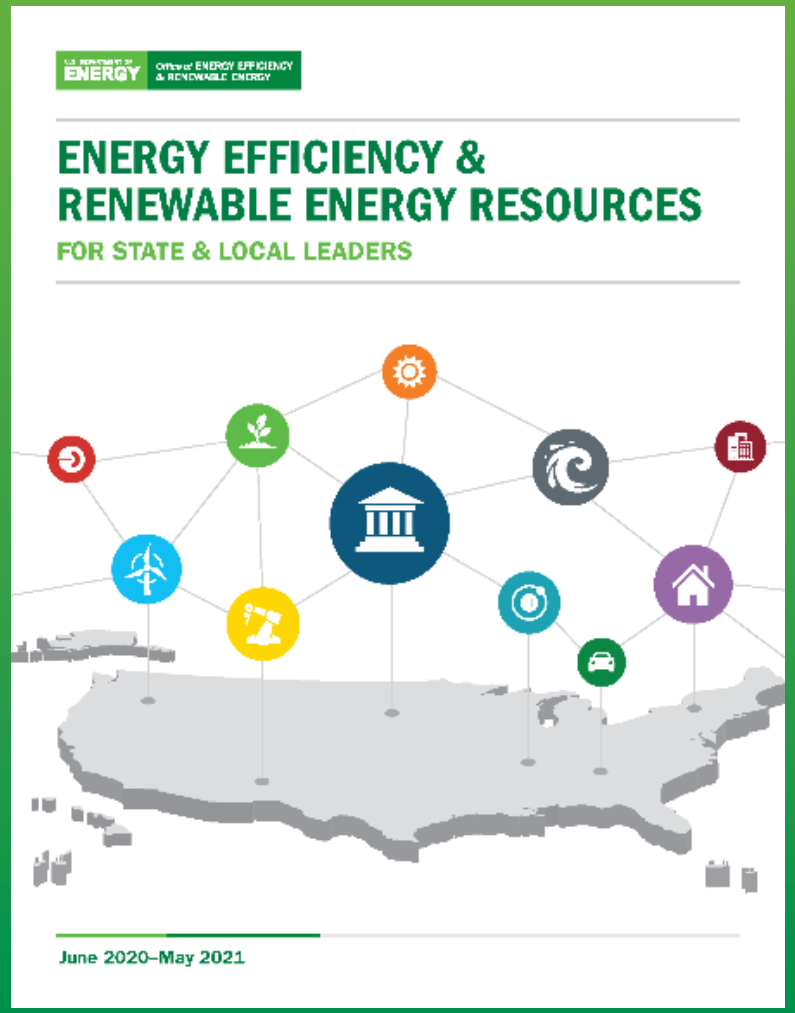
**Measuring Up to the Equity Challenge: Energy Affordability and Equity Planning** (Thursday, June 11; 3:00–4:30 p.m.)

# Stay Connected

- **State and Local Solution Center**
  - More than 400 tools, resources, and best practices
- **State and Local Spotlight**
  - Monthly newsletter with ~32,000 subscribers

**Subscribe:**
http://energy.gov/eere/slsc

**Contact WIP:**
stateandlocal@ee.doe.gov




https://www.energy.gov/eere/slsc/downloads/energy-efficiency-and-renewable-energy-resources-state-and-local-leaders-june

# Clean Energy for Low-Income Communities Accelerator (CELICA) Toolkit

- Product of Better Buildings Initiative and 2-year partnership with over 30 stakeholders from public, private, and non-profit sectors

- CELICA partners successfully leveraged resources to commit **up to $335 million to help 155,000 low income households** access energy efficiency and renewable energy benefits, and demonstrated promising program models

- Types of resources in CELICA Toolkit:
  - Case Studies/Promising Practices
  - Issue Briefs
  - Data Tools
  - Templates

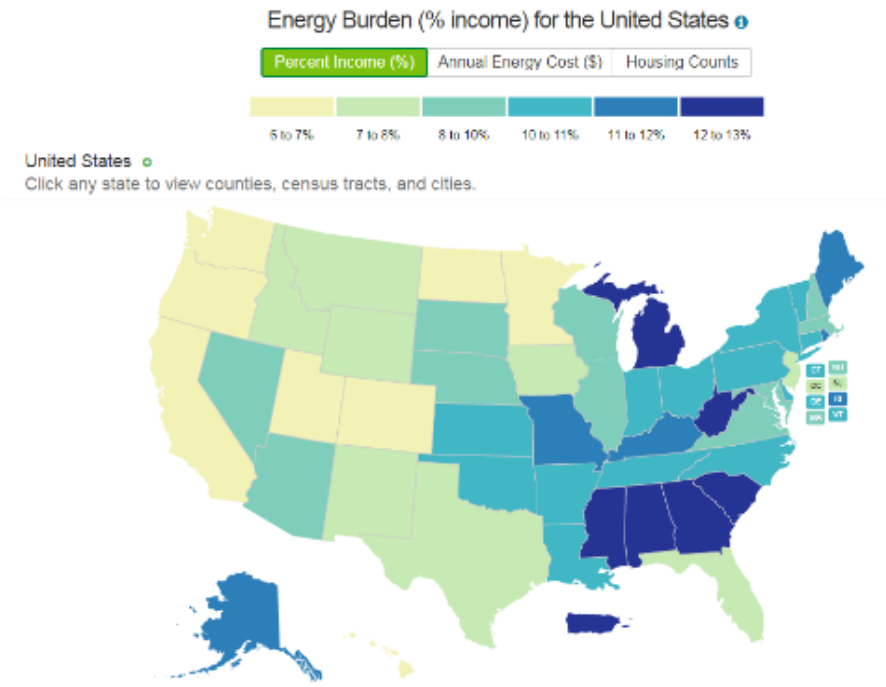
CELICA Toolkit: https://betterbuildingssolutioncenter.energy.gov/CELICA-Toolkit

# Low-Income Energy Affordability Data (LEAD) Tool

- **Goal:** Help communities make data-driven decisions by improving understanding of low- and moderate-income household and energy characteristics

- A web-based interactive tool with national, state, city, census tract level maps, and data for all 50 states plus PR and DC

- Since its launch (Summer 2019) over 4,000 users, including:
  - National Grid utility (NY)
  - State of Kentucky
  - Texas Energy Poverty Institute




LEAD
LOW-INCOME ENERGY AFFORDABILITY DATA
TOOL
U.S. DEPARTMENT OF ENERGY

LEAD Tool: https://www.energy.gov/eere/slsc/maps/lead-tool