



The Parker Ranch installation in Hawaii

Effective O&M Policies in Public Buildings

Presenters: Ed Londergan, NEEP; Carolyn Sarno, NEEP;
Susy Jones, NEEP; and Carol Chafetz, City of
Newton, Mass.

Date: November 4, 2010

Today's Presenters



**Ed Londergan,
NEEP**



**Carolyn Sarno,
NEEP**



**Susy Jones,
NEEP**



**Carol Chafetz,
City of Newton. MA**

DOE's Technical Assistance Program (TAP) supports the Energy Efficiency and Conservation Block Grant Program (EECBG) and the State Energy Program (SEP) by providing state, local, and tribal officials the tools and resources needed to implement successful and sustainable clean energy programs.



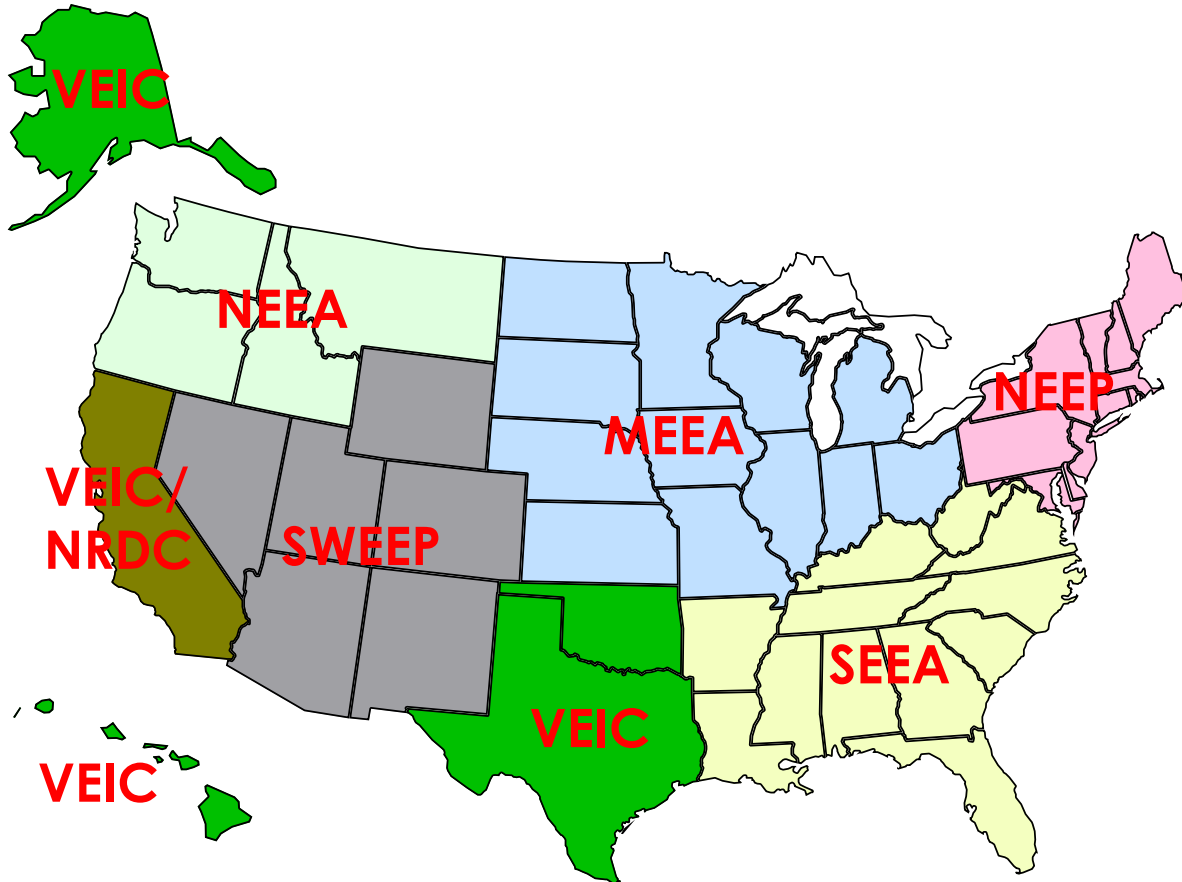
TAP offers:

- One-on-one assistance
- Extensive online resource library, including:
 - Webinars
 - Events calendar
 - TAP Blog
 - Best practices and project resources
- Facilitation of peer exchange

On topics including:

- Energy efficiency and renewable energy technologies
- Program design and implementation
- Financing
- Performance contracting
- State and local capacity building

Who We Are: Team 4



ACEEE, NRDC: National Support

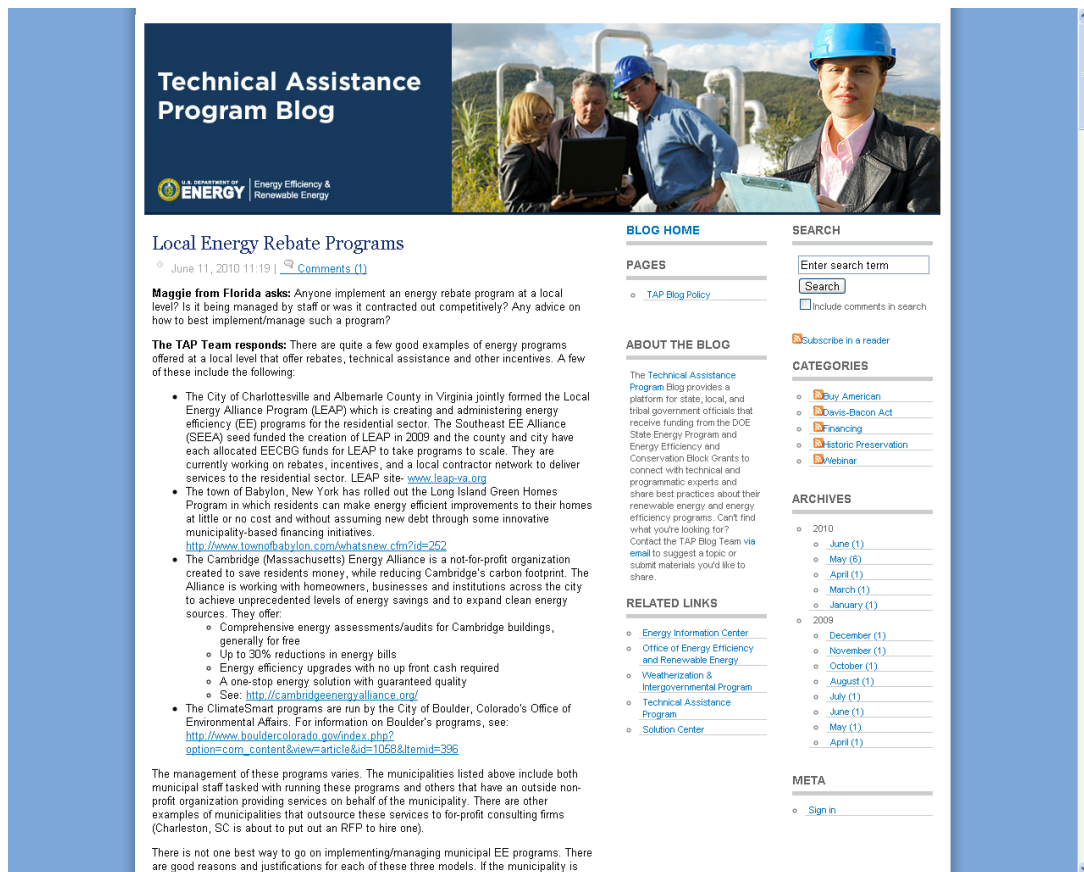


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Access the TAP Blog!
<http://www.eereblogs.energy.gov/tap/>

Provides a platform for state, local, and tribal government officials and DOE's network of technical and programmatic experts to connect and share best practices on a variety of topics.



Technical Assistance Program Blog

U.S. DEPARTMENT OF ENERGY Energy Efficiency & Renewable Energy

Local Energy Rebate Programs

June 11, 2010 11:19 | [Comments \(1\)](#)

Maggie from Florida asks: Anyone implement an energy rebate program at a local level? Is it being managed by staff or was it contracted out competitively? Any advice on how to best implement/manage such a program?

The TAP Team responds: There are quite a few good examples of energy programs offered at a local level that offer rebates, technical assistance and other incentives. A few of these include the following:

- The City of Charlottesville and Albemarle County in Virginia jointly formed the Local Energy Alliance Program (LEAP) which is creating and administering energy efficiency (EE) programs for the residential sector. The Southeast EE Alliance (SEEA) seed funded the creation of LEAP in 2009 and the county and city have each allocated EECBG funds for LEAP to take programs to scale. They are currently working on rebates, incentives, and a local contractor network to deliver services to the residential sector. LEAP site- www.leap-va.org
- The town of Babylon, New York has rolled out the Long Island Green Homes Program in which residents can make energy efficient improvements to their homes at little or no cost and without assuming new debt through some innovative municipality-based financing initiatives. <http://www.townofbabylon.com/whatsnew.cfm?id=252>
- The Cambridge (Massachusetts) Energy Alliance is a not-for-profit organization created to save residents money, while reducing Cambridge's carbon footprint. The Alliance is working with homeowners, businesses and institutions across the city to achieve unprecedented levels of energy savings and to expand clean energy sources. They offer:
 - Comprehensive energy assessments/audits for Cambridge buildings, generally for free
 - Up to 30% reductions in energy bills
 - Energy efficiency upgrades with no up front cash required
 - A one-stop energy solution with guaranteed quality
 - See: <http://cambridgeenergyalliance.org/>
- The ClimateSmart programs are run by the City of Boulder, Colorado's Office of Environmental Affairs. For information on Boulder's programs, see: http://www.bouldercolorado.gov/index.php?option=com_content&view=article&id=1058&Itemid=336

The management of these programs varies. The municipalities listed above include both municipal staff tasked with running these programs and others that have an outside non-profit organization providing services on behalf of the municipality. There are other examples of municipalities that outsource these services to for-profit consulting firms (Charleston, SC is about to put out an RFP to hire one).

There is not one best way to go on implementing/managing municipal EE programs. There are good reasons and justifications for each of these three models. If the municipality is

BLOG HOME

PAGES

- [TAP Blog Policy](#)

ABOUT THE BLOG

The Technical Assistance Program Blog provides a platform for state, local, and tribal government officials that receive funding from the DOE State Energy Program and Energy Efficiency and Conservation Block Grants to connect with technical and programmatic experts and share best practices about their renewable energy and energy efficiency programs. Can't find what you're looking for? Contact the TAP Blog Team via email to suggest a topic or submit materials you'd like to share.

RELATED LINKS

- [Energy Information Center](#)
- [Office of Energy Efficiency and Renewable Energy](#)
- [Weatherization & Intergovernmental Program](#)
- [Technical Assistance Program](#)
- [Solution Center](#)

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META

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Problems facing communities



Existing buildings don't come with instructions



NE-CHPS O&M Guide: What is it?

- A pathway for existing schools to adopt high performance strategies
- Many low cost ideas
- Eleven sections, from Policies to Recycling
- Currently being adapted for all public buildings
- One of many available guides
- Download at www.neep.org





**Reduce your energy
use first**



Supports your community's energy reduction goal

Should include:

- **Teamwork!**
- Seasonal temperature settings for HVAC
- Lighting levels
- Maintenance schedules
- Retrofit and construction planning
- Utility use & procurement
- **Training**
- **Occupant Behavior**
- **Benchmarking**

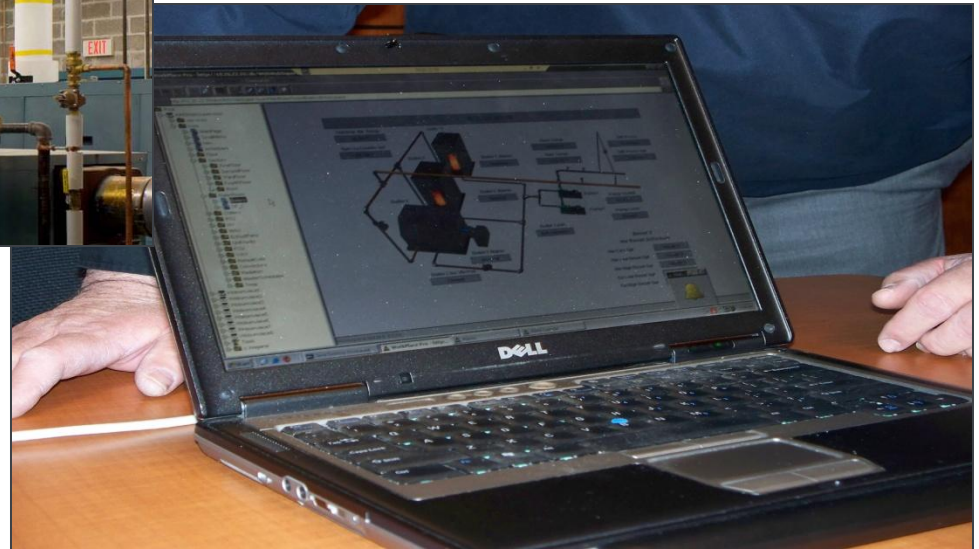




Some systems look like this....

- Preventive Maintenance
 - Opportunity for savings !

And others like this...



Moving beyond technology

“Behavior is clearly a cornerstone of energy efficiency. Behavior affects the purchases we make, the buildings and systems we design, and how we use energy-consuming equipment.”

-American Council for an
Energy Efficient Economy



Energy saving policies for occupant behavior

- Lighting
- Heating and cooling
- Water
- Transportation
- Office equipment
- Procurement and materials management
- Waste/Recycling



The City of Austin's Climate Protection Program



- Interactive employee training seminar
- Participants receive education credit towards annual requirement
- Key employees trained to deliver seminar to their departments
- CoolAustin.org

Photo by Bob Parker <http://www.ci.austin.tx.us/images/places/plimage8.htm>

Success Story – Newton, Mass.

Overview

- Population of 85,000
- 85 buildings, 2.5 million sq. ft
 - 22 School buildings
 - Size range: 40,000 sf 410,000 s.f
 - 11,500 students
 - Two high performance green schools
- 7,500 work orders are processed each year
- First community to adopt a **“stretch code”** in the nation



Why benchmark?

It's the only way to know for sure what is broken, what can be fixed and at how much it will cost.

What do we benchmark?

- Utilities
- O&M costs and cost centers – using CMMS

Who can be your champion to get this started?

Staff support, volunteers from local senior center were trained and used!

- Training & support
 - NGRID/NEEP
- Identify Improvements
 - Energy audit
- Goal Setting/Action Plan
 - Set Investment Priorities
- Goal implementation
 - Verify & Track Progress
 - EPA Energy Star **Portfolio Manager**
- Manage energy & water
- Building's energy Performance

NORESCO

Detailed Energy Audit for

City of Newton - Phase 2

August 21, 2009



- Data tracking tends to be useful no matter what!
- Energy performance contract (EPC) requires 3 years of energy data.
- You can connect the dots between energy consumption and deferred maintenance.
 - A great argument for defending budget requests.

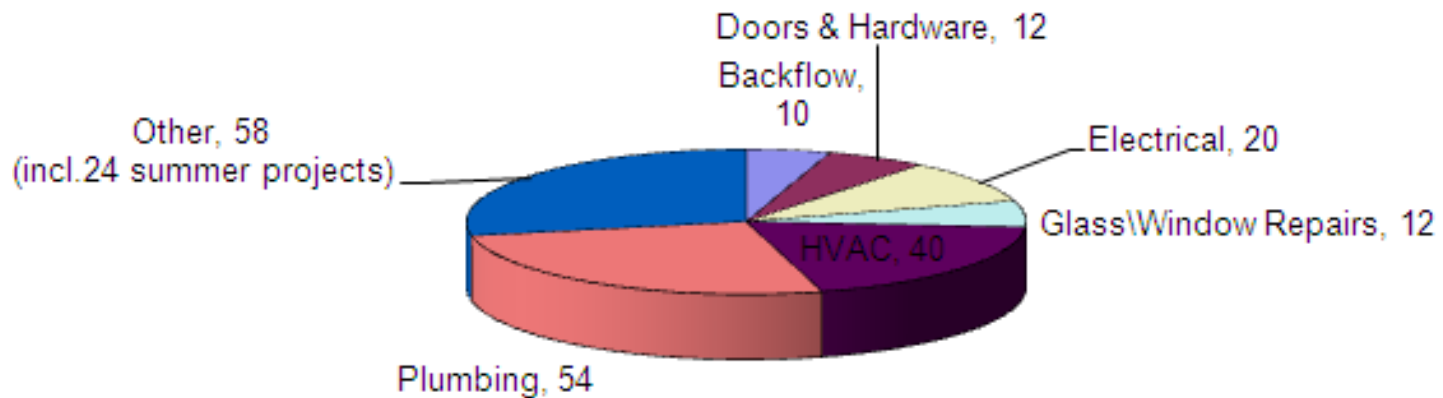
Then: 10 years ago (No CMMS)

- Paper work orders;
- Lack of tracking
- Paper billing long lag time
- O&M budget chronically in the red!



Now: 2007 to present (With CMMS)



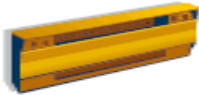




- Faster repairs
- Accountability at all levels
- Forecast spending and stay with budget
- Monthly reports to School Committee
 - Justify need for increased budget**
- Expands base of support and stakeholders



Teamwork

- Create collaborative teams, they are your champions!
- EMT is an interdepartmental team including:
 - Fire, Health, Teacher’s Union, Operations, City Buildings, DPW/recycling, Science Departments, Custodial Union, PTO rep.
- Develops policies and procedures
- “Train the trainer” approach
 - Each school has it’s own EMT.
- Change occupant behavior through awareness and responsibility.
- Work with any community groups they are your advocates

NPS Environmental Management Program Classroom Poster

<p>Pest Sightings - fill out pest sighting form located in IPM Notebook in Main Office, and report to head custodian.</p>	
<p>Food in Classroom – when possible, do not bring or store food in the classroom. If you must have food, seal it in plastic containers, restrict eating areas (no eating on rug) and clean-up food and spills immediately.</p>	
<p>Ventilation System in the Room - Maintain a three foot clearance space around any mechanism in your classroom that brings in or removes air or heat from the room (univentilator, air supply, and air return).</p>	
<p>Plants and Animals - No plants and animals should be in rooms where students have documented or suspected allergies and asthma. If you do have them, locate them away from the air supply grates, air returns and unit ventilators to prevent their byproducts from being circulated throughout the room and building. Clean cages and drip pans regularly.</p>	
<p>Health Reactions - be aware of and report student and staff health reactions to allergens, products, air quality, etc. to the school nurse.</p>	
<p>Classroom Cleaners - Use only the “green” cleaner supplied by NPS and approved for classroom use. Spray cleaner into the cloth, (not air) and then wipe. Store in a secured place in an upright position.</p>	
<p>Recycling – Use those blue and green recycling bins!!</p>	

What I wish I had known

- Band-Aids don't work
- Mind shift - maintenance , equipment and energy
- Complicated software programs are not necessary
- Take the risk of collaborating with community advocates.

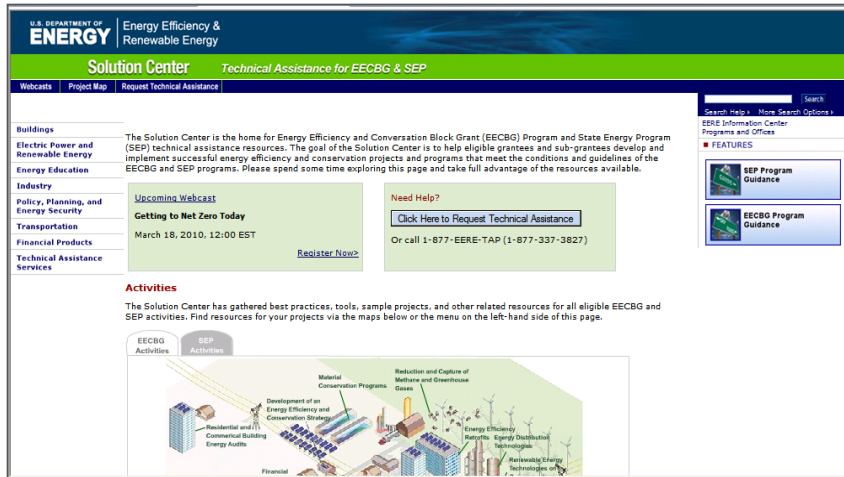
- Efficiency first
- Develop a policy / plan
- Can't manage what you haven't measured
- Train building staff / occupants
- Preventive maintenance works
- Free resources are available

Additional Resources

- Department of Energy O & M Best Practices
http://www1.eere.energy.gov/femp/program/operations_maintenance.html
- DSIRE – Database of State Incentives: <http://www.dsireusa.org/>
- Energy Star: <http://www.energystar.gov/>
- Energy Smart Schools Guide to O & M
http://www1.eere.energy.gov/buildings/energysmartschools/o-and-m_guide.html
- EPA LBE Guide http://www.epa.gov/cleanenergy/documents/epa_lbe.pdf
- Facilities Operating Plan
<http://www.vtvs.org/files/Facility%20Operating%20Plan%20Template%20Version%201.0.doc>
Solutions Center
- <http://www1.eere.energy.gov/wip/solutioncenter/default.html>
- Northeast Energy Efficiency Partnerships: www.neep.org
- Your local utility & energy efficiency program providers

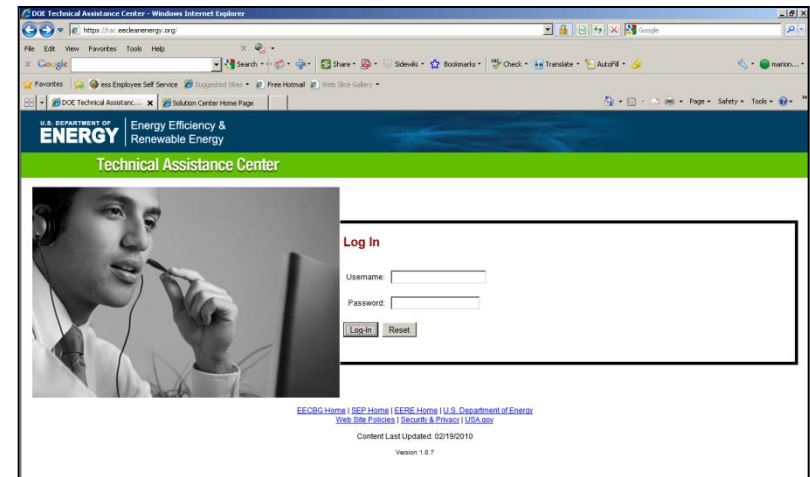
We encourage you to:

1) Explore our online resources via the [Solution Center](#)



The screenshot shows the 'Solution Center' website for the U.S. Department of Energy. The header includes the department logo and the text 'Energy Efficiency & Renewable Energy'. Below the header, there are navigation tabs for 'Webcasts', 'Project Map', and 'Request Technical Assistance'. The main content area is divided into several sections: 'Buildings' with a description of the Solution Center's purpose; 'Energy Education' with a link to 'Upcoming Webcast' for 'Getting to Net Zero Today' on March 18, 2010; 'Industry' with a 'Need Help?' section and a 'Click Here to Request Technical Assistance' button; and 'Activities' with a description and a diagram showing various energy efficiency and conservation strategies like 'Material Conservation Programs', 'Reduction and Capture of Methane and Greenhouse Gases', and 'Energy Efficient Retrofits'.

2) Submit a request via the [Technical Assistance Center](#)



The screenshot shows the 'Technical Assistance Center' website in a Windows Internet Explorer browser window. The browser address bar shows 'https://ee.eere.energy.gov'. The website header includes the U.S. Department of Energy logo and 'Energy Efficiency & Renewable Energy'. The main content area features a 'Log In' section with 'Username:' and 'Password:' input fields, and 'Log In' and 'Reset' buttons. Below the login section, there are links for 'EERE Home', 'SEP Home', 'EERE Home | U.S. Department of Energy', 'Web Site Policies | Security & Privacy | USA.gov', and 'Content Last Updated: 02/19/2010'. The footer indicates 'Version 1.0.7'.

3) Ask questions via our call center at 1-877-337-3827 or email us at solutioncenter@ee.doe.gov

Please join us again:

Title: **Local Power Empowers: CHP and District Energy**

Host: Jay Wrobel, MEEA

Date: November 8, 2010

Time: 2:00-3:00 EST

Title: **Driving Demand: Working with and Learning from Contractors**

Host: Merrian Fuller, LBNL

Date: November 9, 2010

Time: 2:00-3:15 EST

Title: **EM&V101: General Approaches to Tracking Data and Estimating Savings**

Host: Julie Michals, NEEP

Date: November 10, 2010

Time: 2:00-3:00 EST

Title: **Energy Efficiency Rebate Programs 101**

Host: Catul Kiti, Senior Manager Energy Efficiency Programs, ICF International

Date: November 15, 2010

Time: 12:00 - 2:00 PM EST

Title: **State Clean Energy Policy Impact**

Host: Liz Doris, NREL

Date: November 17, 2010

Time: 3:00 - 4:15 PM EST

Title: **Negotiating and Entering Into an ESPC**

Host: Meg Giuliano, ICF International and Sentech

Date: November 18, 2010

Time: 1:30 - 2:30 PM EST

Title: **Community Renewables Projects**

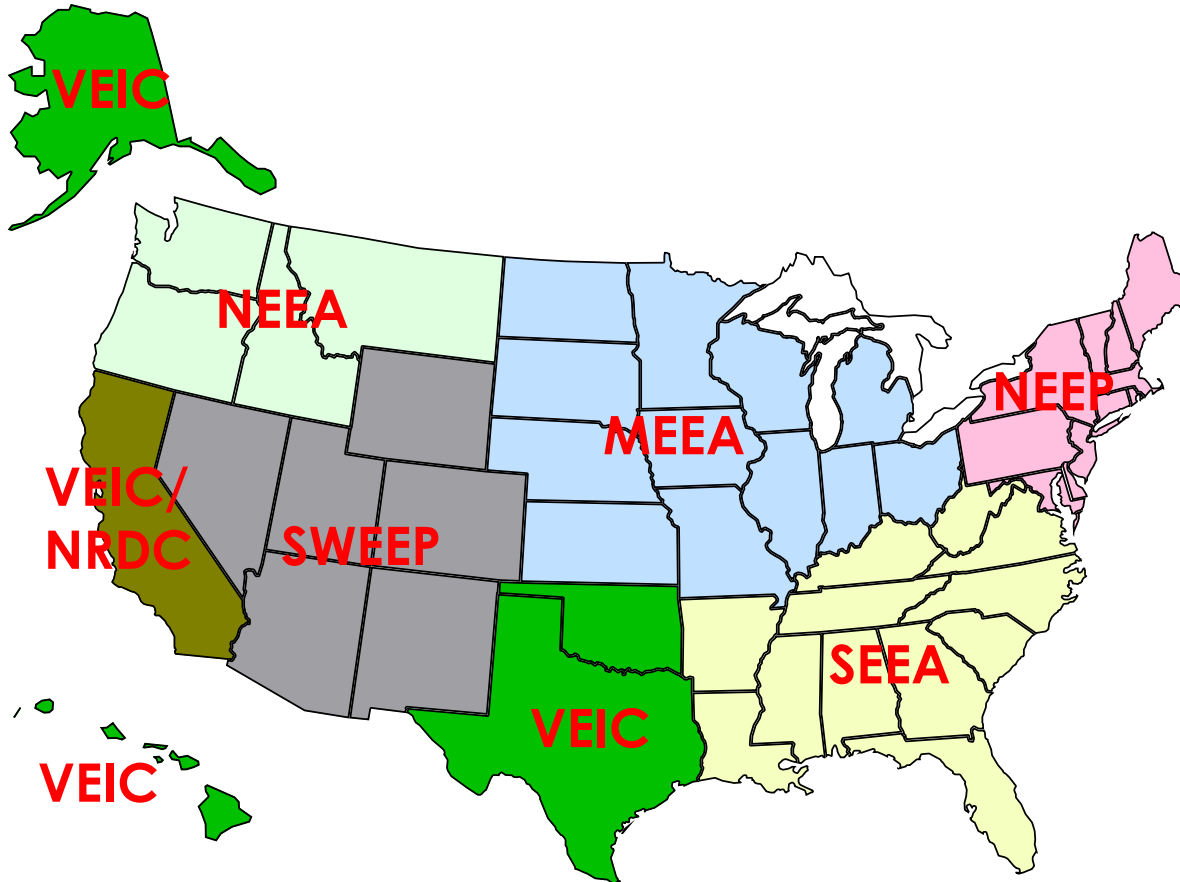
Host: Cheryl Jenkins, VEIC

Date: November 30, 2010

Time: 2:00 - 3:00 PM EST

For the most up-to-date information and registration links, please visit the Solution Center webcast page at www.wip.energy.gov/solutioncenter/webcasts

Who We Are: Team 4



ACEEE, NRDC: National Support



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