Weatherization & Intergovernmental Programs Office

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

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October 27, 2015

WIP Mission & Strategic Objective

WIP is part of EERE's balanced research, development, demonstration, and deployment (RDD&D) approach to accelerate America's transition to a clean energy economy.

- WIP's **mission** is *to catalyze the deployment of energy efficiency and renewable energy technologies and practices by a wide range of government, community, and business stakeholders, in partnership with State and local organizations.*

- WIP supports DOE's **strategic objective** to "**deploy the clean energy technologies we have**."
  - These typically near-term activities produce almost immediate results in the form of greater energy efficiency, lower energy use, expanded renewable energy capacity, and economic development.

WIP Role

- **Reduce energy demand** through programs in the buildings, industry, and utility sectors and fuels substitution for vehicles.
- **Advance a national and self-sustaining market** for energy efficient building upgrades.
- **Expand the clean energy supply** through state and local programs and policies to deploy renewable energy technologies.
- **Develop solutions to barriers** - Including innovative and integrated financial structures, business models, and implementation/production methods which transform energy efficiency effectiveness.
- **Economic development and job creation** from successful clean energy technology deployment.
- **Develop the workforce** to expand career opportunities in residential and commercial energy retrofit and other energy-related fields.

State & Local Govts: Key Partners

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Unlocking the potential for EE in state and local buildings alone = $49 B in energy savings, according to the 2008 McKinsey analysis

- Demonstrated leadership in effective development and implementation of energy efficiency and renewable energy solutions.
- Establish clean energy policies using executive orders, legislation, utility commissions, and local ordinances.
- Other EERE programs utilize State Energy Offices to meet their specific deployment objectives (e.g., BTO, Solar).
- States and local governments can partner with each other and local communities to broaden networks, increase access to commercial sector and continue the momentum initiated with one-time community block grants made in 2010.
- Between 2006 and 2015 States have worked to help collectively increase:
  - Utility or ratepayer funded efficiency investments from $1.9B to over 5.5B;
  - American Council for an Energy-Efficient Economy (ACEEE) EE "scorecard" by 50%;
  - The number of energy efficiency resource standards from 8 to 24; and
  - The number of renewable portfolio standards from 19 to 29.

State/Local Deployment Pathways

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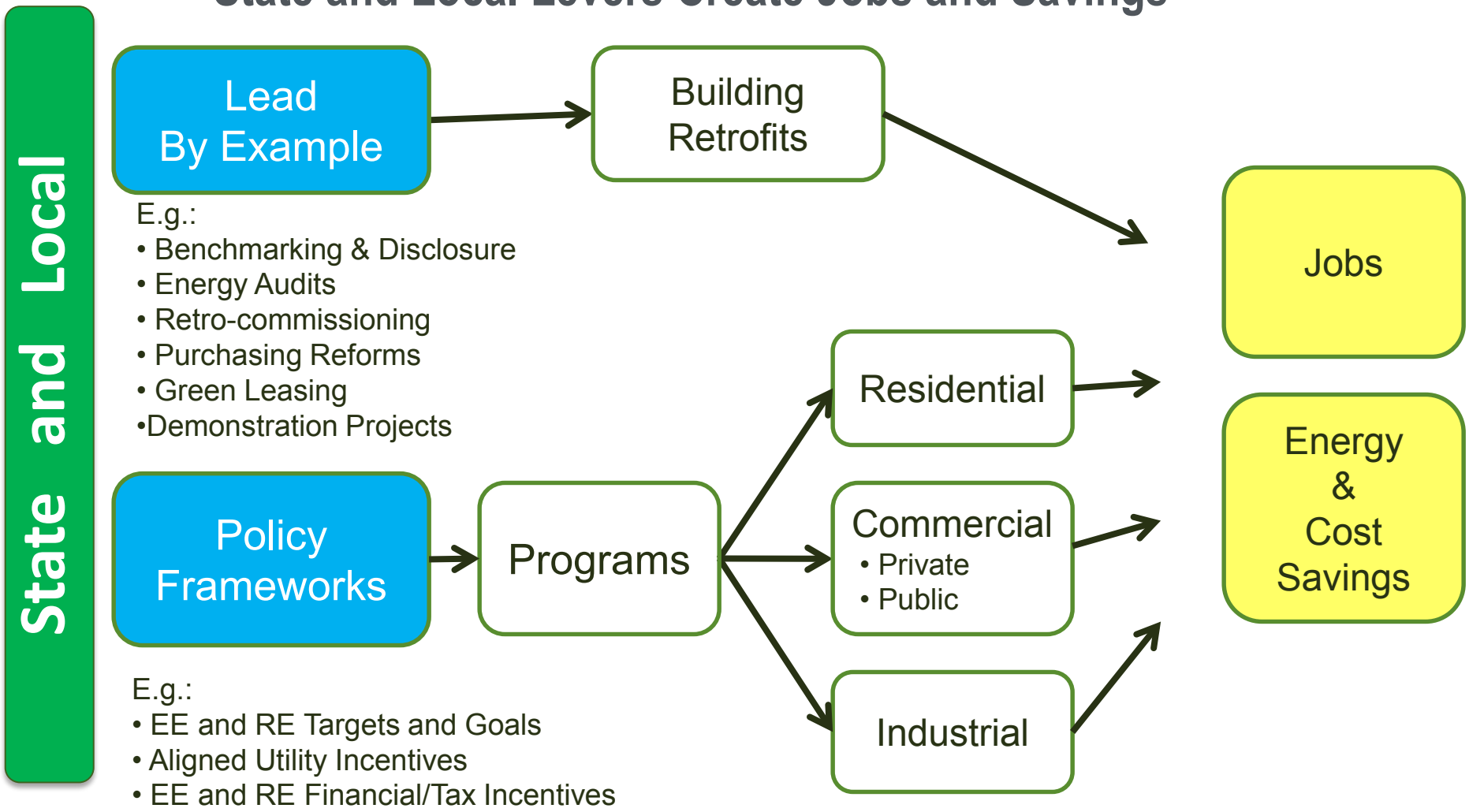
State and Local Levers Create Jobs and Savings



WIP Deployment Pathways

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Ensure strong **state energy and weatherization networks** with core capabilities to advance adoption of energy efficiency and renewable energy technologies are actively maintained across the country.

(Formula Funding)

↓

Catalyze a **strategic set of innovative state and local best practices**, including clean energy programs, policies and projects that are high impact and self-sustaining.

(Competitive Funding)

↓

Help **state and local innovations achieve scale** by applying "best practice tools", "lead by example" methods, peer to peer forums and strategic partnerships. (Technical Assistance, BB Challenge, Solution Center, Other Initiatives)

↓

MARKET IMPACT

WIP - Three Program "Pillars"

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WIP

Weatherization Assistance Program

59 state & tribal grants to retrofit low- income homes

~30,000+ retrofits/year

Training & TA

Health & safety

Work quality standards

Worker certifications

Technology demos

State Energy Program

56 state formula grants

- Codes implementation
- Rebates & incentives
- Energy audit programs
- Revolving loan programs
- Alternative fuels programs

40+ competitive projects

- Energy Planning
- ESPC & Financing Models
- LBE & Innovation Models

TA/Stakeholder Engagement

- NASEO, NGA, NCSL
- Labs & REEOs

Policy & Technical Assistance

Better Bldgs – Public

- States, locals, K-12 Schools
- Accelerators – ESPC, Outdoor Lighting

Policy Frameworks

- Benchmarking & Disclosure
- Data Access & Mgmt

Solution Center/TA

- IMs (SEP Comp & BBC)
- Local Planning Guidance
- Policy & Program Examples
- Peer Exchange Events
- Labs & REEOs - TA

SEP Formula Funding

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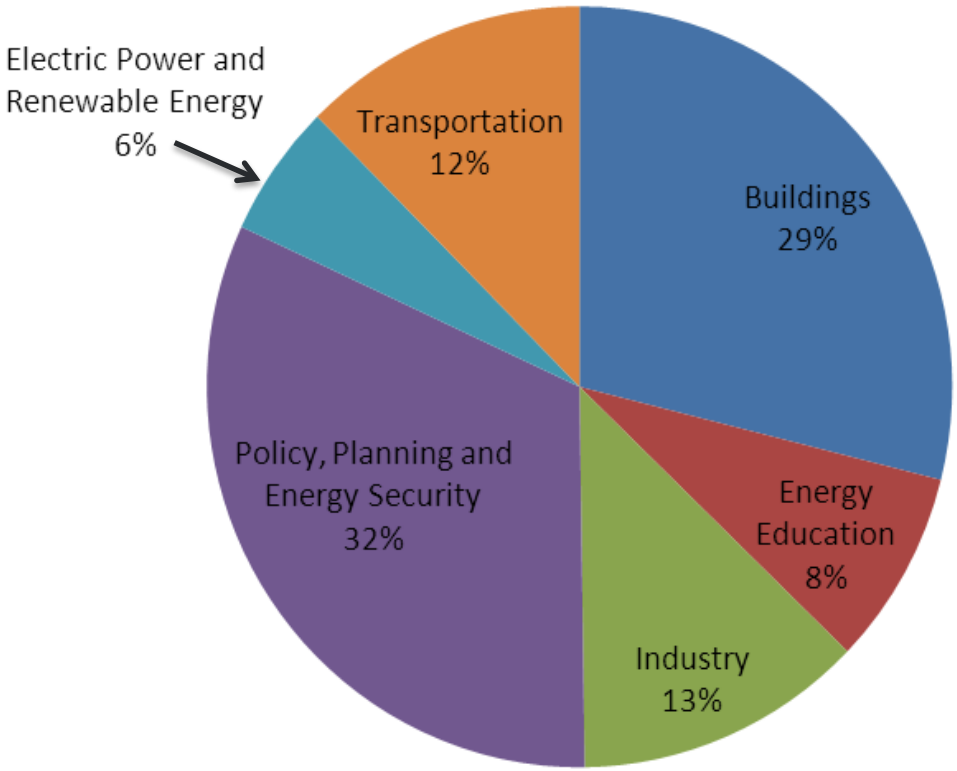
Eligible Activities

- Demonstrations of EE & RE technologies
- Public education on EE & RE
- Increasing transportation efficiency
- Financing for EE & RE projects
- Energy audits & retrofits of buildings and industrial processes
- Demand reduction
- Training & incentives for builders & building designers
- Energy Emergency/Assurance Planning

Ineligible Activities

- Research
- Utility rate demonstrations
- New construction
- Purchase land or buildings
- Loan guarantees

Formula Grant Program Areas 2010-2014



Approximately $39 M per year allocated to 50 states, DC, and 5 U.S. Territories

State Energy Program Competitive
(Approximately $5 Million Per Year)

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2010 through 2013	2014/2015

Areas of emphasis:
• Statewide energy efficiency targets/goals
• State lead by example programs for public buildings
  • Performance contracting
  • Market segments:
• Policies and programs for industrial energy efficiency and distributed resources.
• Clean energy economic development roadmaps
	Areas of emphasis:
	• State energy planning
	• Statewide energy efficiency and renewable energy targets/goals
	• Policies and programs for distributed resources
	• Frameworks for evaluation, measurement and verification of energy and emission reductions
	• Public facilities – financing mechanisms
	• Partnerships with local governments and others to remove barriers, including developing financing mechanisms
	• Building energy performance information for decision-making, including benchmarking and disclosure, aggregation of whole building usage data and data access

Policy & Technical Assistance Team

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Taking clean energy to scale through high impact efforts, by. . .

Catalyzing and assisting ***state and local leadership***

- Facilitating public sector ***deployment*** *of EERE technologies*
- Coordinating public sector efforts for broader ***agency initiatives***

Promoting ***standardized approaches***

- Connecting to subject matter ***expertise*** in support of public sector clean energy efforts
- Identifying and disseminating ***best practices & models***

Addressing ***specific market barriers***

- Serving as a ***technical assistance*** source to the public sector, when appropriate
- Engaging in ***strategic partnerships*** with public sector stakeholders

Assistance for Local Governments

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Area	Key Strategies	EERE Efforts
Lead by Example	• Savings targets for public facilities • Use of alternative financing (e.g., ESPCs, QECBs) • Procurement of high efficiency products • Public disclosure of building energy performance information • Programs to address other municipal energy use	• **Better Buildings Challenge and Accelerators** – Assistance to BBC partners – Test/produce Best Practice models – Recent expansion to Multifamily – Barrier busting through Accelerators • **WIP Best Practices / Solution Center**
Other Municipal EE financing and incentives	• PACE; commercial and/or residential • Favorable real estate tax treatment for EE buildings • Favorable permitting, etc. for efficient buildings • Support for alternative utility financing / billing • Opportunities for local bonds	• **WIP Best Practices / Solution Center** • **SEE Action Best Practice Materials**
Municipal fleets and community deployment	• Municipal fleets and alternative fuel infrastructure • Incentives/best practice policies for adoption of EVs	• **Clean Fleets** • **Alternative Fuel Vehicle Data Center** • **Clean Cities Technical Assistance (Tiger Teams)** • **Community EV Scorecard**
Renewable energy (RE) assistance	• Technical assistance for renewable energy issues • Renewable energy incentives • Information on state & local experience with RE	• **Database for State Incentives for Renewables & Efficiency**
Community EE Upgrades	• Community district heating and other opportunities for CHP (and distributed energy such as solar roofs)	• **Combined Heat & Power Technical Assistance Partnerships (for CHP projects)**

Financial Mechanisms -- Sustaining Efficiency into the Future

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Revolving Loan Funds

- SEP and EECBG Grantees placed over **$800 M** of their ARRA funds into Revolving Loan Funds (RLFs) in an effort to create self sustaining programs that will support EE/RE into perpetuity.

Energy Savings Performance Contracts

- DOE is actively disseminating best practices around standardized processes and contracts, financing, data collection and benchmarking, through the work done on SEP Competitive Awards and the BBC.

Qualified Energy Conservation Bonds

- Over 100 issuances for $670 million of project funding for building retrofits, renewables projects, and for residential and commercial loan programs.

Linking to Other Mechanisms

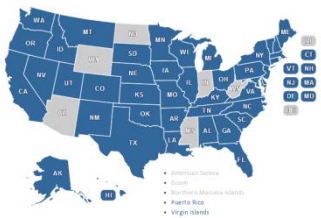
- There is growth in PACE financing, on-bill financing, and the use of green banks and engagement of secondary markets.

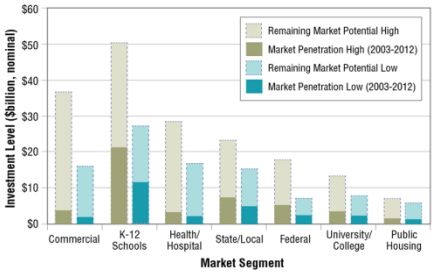
Revolving Loan Funds and Loan Loss Reserves Prevalent in Most States

NASEO SELF database

NASEO has tracked a total of 79 programs in 44 states, representing a total of over $2 billion in available state financing for energy efficiency and renewable energy projects in a variety of sectors.

LBNL's forthcoming paper on ARRA-funded RLFs and LLRs, a collaboration with NASEO, will add to understanding of RLF and LLR programs.





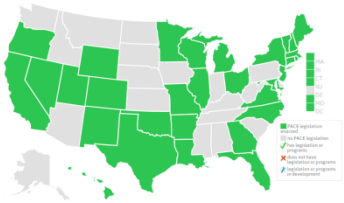
- **Remaining investment potential in facilities typically addressed by this industry ranges from ~$71 to $133 billion.**

Up to $2.1 Billion across 50 States in remaining opportunity

PACE Programs Spreading

National PACE Landscape Today (PaceNow)

- 31 states and D.C. have enabled commercial PACE
- 25 active commercial PACE programs/platforms are ready to fund projects
- 7 active residential PACE programs
- PACE is available in over 500 municipalities nationwide
- Over $75 million is PACE financing extended to more than 250 commercial property owners
- More than $250 million in applications from commercial property owners



Source: PaceNow.org

Better Buildings Initiative:

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Leaders Developing Replicable Models

Better Buildings CHALLENGE
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- 190+ partners and allies
- Represent 3+ billion square feet; $2+ B
- 70+ showcase projects
- 40+ implementation models
- Saving more than 2% / year

20% Savings Goal
- Establish baseline
- Showcase project
- Implementation model
- Report results

Better Buildings Accelerators
- 60+ participants
- 3 focus areas: Energy Data, Performance Contracting, Industrial SEM

Problem-Focused
- Demonstrate specific innovative approaches,
- Improve consistency
- Accelerate investment

Better Buildings Alliance
- 200+ public & private sector members
- Control 10+ billion square feet
- States, local govts, higher ed, K-12, commercial real estate, hospitality, retail, food service, grocery, healthcare

20% Savings Goal
- Participate in at least one Alliance activity each year
- Share successes with peers

Better Buildings, Better Plants
- 120+ companies; 1,800 plants
- Companies represent 8% of total US manufacturing footprint
- Saving more than 2.5% / year

25% Savings Goal
- Establish baseline
- Energy management plan
- Report results

State and Local Energy Efficiency Action Network

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- Network of 200+, led by state and local policymakers, bringing EE to scale
- Provides best practices and recommended approaches on key EE policy/program areas based on state/local experience
- Facilitated by DOE and EPA

Recent Highlights

Credit Enhancement Strategies Webinar

Greater Energy Savings Through Building Energy Performance Policy: Four leading policy and program options

Coming Soon

Energy Efficiency Finance Programs

Insights from Smart Meters: The Potential for Peak-Hour Savings from Behavior-Based Programs

Sign up for news alerts
www.seeaction.energy.gov

Potential Drivers/Areas for Action

- Planning and Measurement (Quantification/EM&V; Registries)
  - Recent environmental regulations, including Clean Power Plan and the proposed new ozone standards are a potential driver for states and local governments who wish to include EE and RE as solutions

- Key sectors for WIP and FCTO to partner and engage with state and local agencies to advance deployment of fuel cell technologies
  - Wastewater treatment facilities
  - State and local infrastructure
  - Energy assurance/distributed generation

- Individual or regional state/local roadmaps for fuel cell technology and economic advancement

Planning and Measurement

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State Energy Planning - $2.9M

FY14

Idaho (*CA, CO, MT, NV, OR, UT, WA*)
- Framework for comprehensive planning across Western Interconnection to increase RE and EE deployment, improve system reliability and resiliency, and address environmental goals
- DOE Share: $500K

Illinois
- Roadmap will identify EE and RE potential as compared to expected coal plant retirements in Midwest
- DOE Share: $300K

Michigan
- Utility business model focus
- DOE Share: $256K

Minnesota
- Achieve 80-100% clean energy by 2030 and 2050
- DOE Share: $300K

South Carolina (*NC*)
- Coordinated model for measuring, tracking and verifying EE and RE energy savings
- DOE Share: $425K

FY15

New York (*ME, MA, RI*)
- Promote offshore wind and create Regional Offshore Wind Roadmap
- DOE Share: $593K

Maine
- Facilitate achievement of state goals of reducing electricity and oil use by 30% by 2030
- DOE Share: $284K

Virginia
- Achieve Governor's EE goal of 10% energy savings by 2020
- DOE Share: $300K

Quantification of EE; EM&V -$1.1M Registry - $800,000

FY14

Virginia (*KY and GA*)
- Develop a methodology to calculate and track carbon emissions reductions from non-ratepayer funded ESPCs
- DOE Share: $498K

Kentucky
- Create an EMV framework for tracking and verifying carbon emissions reductions achieved through EE
- DOE Share: $300K

FY15

Missouri
- Create a technical reference manual and a vision for EM&V 2.0
- DOE Share: $268K

Tennessee (*GA,MI, MN, OR,PA*)
- Develop registry for tradable EE credits using consensus EM&V protocols
- DOE Share: $800K

Key Sectors

- Wastewater
  - NE: benchmark 60-100 municipal plants; achieve 20% or more savings in at least 24 lowest performing facilities; loan program
  - NH: reduce energy use at 74 municipal plants through education, information exchange, energy audits and direct technical assistance
  - NM: achieve 20% annual energy savings in 5 WWT facilities in low-income communities
  - TN (with AL): advance EE improvements in 24 municipal facilities through onsite energy assessment and management support
  - MN (2014): Decrease energy use by 5 M KWh per year and explore distributed generation opportunities at wastewater facilities
- Other State and/or Local Infrastructure
  - BB Outdoor Lighting Accelerator: Partnering with 3 states. 12 cities and 4 Regional Energy Networks, providing TA to achieve retrofits of over 1.5 1 million fixtures over 2 years
- Energy Assurance/Distributed Energy Resources
  - ID: Roadmap to advance RE and EE solutions across the Western Interconnection with 7 other states (CA, CO, MT, NV, OR, UT, WA) and the Province of British Columbia)
  - NY: Offshore Wind Roadmap with 3 other states (ME, MA, RI)
  - VT (2014):Modernize state's primary interconnect standard to facilitate 100 MW of small renewable and CHP DR, streamline permitting and interconnection applications

Technology & Economic Roadmaps

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- SEP FY 2013 awards made to MI, NC and WA to develop Clean Energy Economic Opportunity Roadmaps
  - Baseline clean energy assets (production facilities, services providers, supply chains, R&D capacity and workforce development)
  - Align clean energy market opportunities with regional manufacturing capabilities
  - Identify key areas of regional competitive advantage
- Sector focus for each award
  - MI (with OH): Energy Efficient Building Technologies
  - NC (with VA, SC, GA): Battery Storage Technologies
  - WA (with OR): Smart Grid Technologies
- Roadmaps are anticipated to be completed in 2016

More Examples/Opportunities

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Transportation

- ZEV Standards
  - CA, CT, MD,MA ME,,NY, NJ,OR, RI, VT
- Fueling Stations – CA
- Hydrogen and electric battery rebates – CT
- Hydrogen Plans, Working Groups, Programs, etc.
  - HI, MN, TX
- FC Tax Exemption - SC

Stationary

- Microgrids w/FCs – CT
- Battery storage projects - NY
- Energy Assurance Plans
  - 2009 NASEO/NARUC guidelines on diversifying/improving resiliency with EE, RE and CHP
- WWT
  - King County, WA South Treatment Plant – FCs with anaerobic digester gas

Next Steps?

- Follow up with FCTO on ideas from today's discussion
- Talk to SEOs about CPP, key sectors and roadmaps and get their input on these and other issues to examine
- Identify critical barriers to FC adoption where state and local government policies are essential
- More ideas??

Thank You!

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