
How **Energy Savings Performance Contracting** Can Support State Climate and Energy Planning

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This short presentation is intended give states and their stakeholders a vision for what it would look like to include energy savings performance contracting in their climate and energy plans.

Energy Savings Performance Contracting as an Emissions Reduction Approach



Activities	EM&V
Energy Savings Approaches	
<ul style="list-style-type: none"> • State energy or general services office, building owners, ESCOs, utilities generate energy savings from: <ul style="list-style-type: none"> - Direct energy management - Capital improvements - Technical assistance - Training - Metering - Utility incentives 	<ul style="list-style-type: none"> • Recent resources provide guidance, including: <ul style="list-style-type: none"> - <u>Federal Energy Management Program M&V Guidelines Version 4.0</u>
State Policy Options	
<ul style="list-style-type: none"> • Could include: <ul style="list-style-type: none"> - Energy efficiency resource standard (EERS) - Executive Order or legislation to create ESPC program w/target savings or investments - State financing for ESPC projects - State admin. rules to support ESPCs 	
Low-Income Opportunities	
<ul style="list-style-type: none"> • Energy savings projects in low-income neighborhoods (e.g., schools, community centers, facilities, multifamily housing) 	

Why Energy Savings Performance Contracting?

How Energy Savings Performance Contracting (ESPC) Works

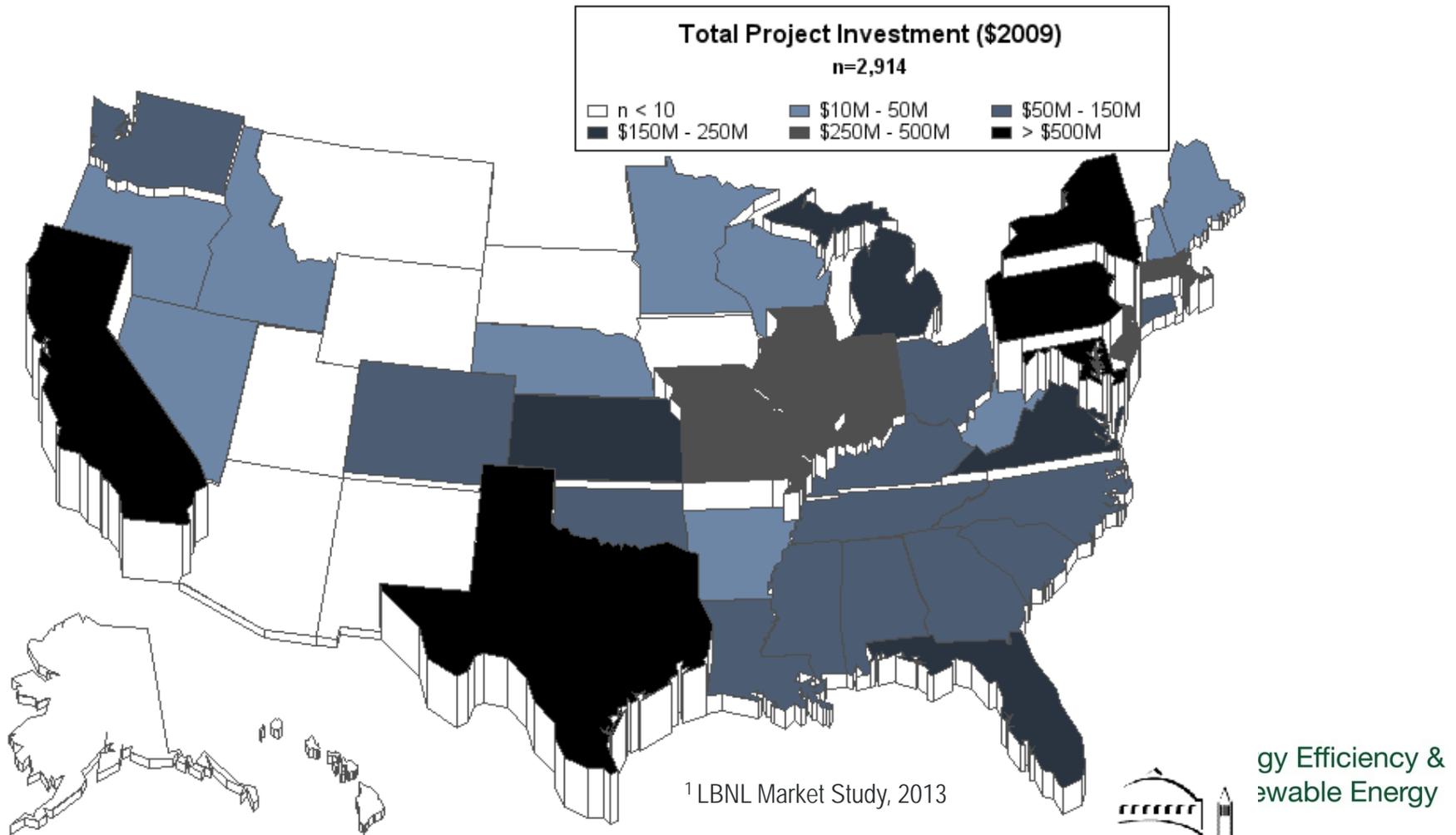
- ESPC is a mechanism that provides upfront capital for energy efficiency projects that is repaid by the energy savings generated by the project.
- ESPC mobilizes energy efficiency projects that might not otherwise move forward in the face of limited budgets for upfront project costs.
- ESPC enables more comprehensive retrofits that can include major energy-consuming equipment upgrades as well as water conservation and infrastructure improvement.

Benefits of ESPC

- Guaranteed project performance: ESCOs responsible for any shortfall in guaranteed project savings.
- A typical ESPC project in the municipal/university/schools/hospitals (MUSH) market saves approximately 13-31% annually, compared to its baseline consumption.²
- ESPCs active in 2012 saved 34 million TWh and 224 million MMBtu or approximately 1% of total US commercial building energy consumption¹

Current Status of ESPC

- All 50 states have ESPC-enabling legislation
- MUSH market represents about 64% of industry revenues¹
- More ESPC activity in states with energy savings goals
- ESPCs active in 2012 saved 34 million TWh¹



¹ LBNL Market Study, 2013



State and Local Role in ESPC

ESPC pathway requires state and local action

- Legislation enabling ESPC is adopted at the state level; all 50 states have legislation allowing ESPC.
- Decision or approval to use ESPC is made at the individual state or local agency, department, council, or facility level.

Policy Actions

- The most effective state-level ESPC policy includes establishing a state-level program to provide technical assistance to entities pursuing ESPC projects.
- State and local debt and financing policy impacts the way ESPC projects are structured. A state legislature, governor, administrative agency, or local government can support ESPC by:
 - Establishing or leveraging a statewide savings goal
 - Establishing or leveraging an energy savings goal or EE standard specific to state or local building stock (often set by the governor or local elected official)
 - Establishing training or certification programs/requirements for building operators
 - Establishing or accessing an internal financing mechanism that can provide a regular, low-cost funding stream for ESPC projects
 - Establishing a state chapter of the Energy Services Coalition; chapter meetings bring together public and private ESPC stakeholders.

Best Practices in ESPC Implementation

Implementation Actions

- Sound project development and implementation are critical to realizing actual energy savings from ESPC projects.
- Some states use in-house expertise to develop ESPC contracts; others look to external owner's agents for such support.
- Best practices in project implementation include:
 - Engage an owner's agent to oversee project development and management
 - Partner with Energy Services Companies (ESCOs) pre-qualified to perform the project
 - Use standardized contracts and documents to streamline the project development process and cut transaction costs
 - Plan and apply formal measurement & verification (M&V) to ensure project is yielding the expected savings
 - Benchmark, track, and report project data to effectively gauge project results

ESPC Savings Examples from Select States

- Since 1986, **Washington State** has completed more than \$350 million in public facility efficiency projects, received \$442 million in utility rebates, and now saving \$22 million in annual energy costs.
- Since the mid-1990s, **Colorado's** ESPC portfolio has included 182 active and completed construction projects, totaling \$447.4 million in investments and \$28.8 million in annual utility cost savings.
- Over 15 years, **Illinois** oversaw the implementation of over \$491 million in energy-efficient capital improvements through ESPC, resulting in over \$35 million in combined annual savings.
- Since 2002, 183 local **Massachusetts** governmental bodies (municipalities, schools, regional schools) contracted for ESPC with contracts valued at over \$364 million. These projects will provide guaranteed energy cost savings of \$17.8 million annually. Since 2012, Massachusetts has invested an additional \$470 million in energy projects across 58 million square feet of state buildings, resulting in a 25% energy reduction and a decrease in greenhouse gas emissions of 135,000 metric tons.
- Since 2009, **New Jersey** has had 65 ESPC projects for \$300 million in contracts, resulting in \$40 million in annual savings.

ESPC Is Cost-Effective

- ESPC projects register 15-31% energy savings per project.¹
- The average ESPC project in the state and local market pays back its investment in approximately 8-10 years.²
- ESCOs provide an energy savings guarantee for the project. With a properly set-up project and contract, the ESCO bears the costs of covering the shortfall if the project savings do not materialize.

¹ LBNL Market Study, 2013

² LBNL ESPC Project Performance Benchmarking Sheet: State & Local Governments, c. 2010

EM&V Methods for ESPC

- ESPC projects require quantification of energy savings on a project-by-project basis (M&V).
- ESCOs use standardized M&V approaches, primarily the International Performance Measurement and Verification Protocol (IPMVP).
 - It provides four M&V options and addresses issues related to the use of M&V in third-party-financed and utility projects. Best practice is to add third-party verification to ESCO measurement.
- Other options include:
 - FEMP (Federal Energy Management Program) M&V Guidelines – Many state & local governments use these Guidelines, which contain specific procedures for applying concepts originating in the IPMVP.
 - ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers) Guideline 14 – Measurement of Energy and Demand Savings -- The ASHRAE guideline specifies three engineering approaches similar to the options provided in IPMVP.
 - Uniform Methods Project -- The measure protocols are based on a particular IPMVP option and provide a more detailed approach to implementation.

DOE Support for ESPC

- Two program offices in DOE support the implementation and expansion of access to ESPC:
 - The [Office of Weatherization & Intergovernmental Programs](#) (WIP) works with state and local governments.
 - [State & Local Solution Center](#) includes:
 - ESPC model contract and companion documents
 - 5-module webinar training series on ESPC
 - ESPC state legislation database
 - ESPC fact and project benchmarking sheets
 - The [Federal Energy Management Program](#) works with federal government agencies (FEMP).
 - [FEMP's M&V Guidelines 4.0](#)

Additional Resources for State & Local Governments

- Individual states support ESPC programs. Start with the [State Energy Office](#).
- Additional educational and informational resources are available through the [Energy Services Coalition](#), a public-private partnership promoting the benefits of, providing education on, and serving as an advocate for the widespread use of energy performance contracting in public and private facilities.
 - [ESC State Chapters](#)
 - [ESC Project Case Studies](#)
- Additional Key Documents
 - [*Current Size and Remaining Market Potential of the U.S. Energy Service Company Industry*](#)
 - [NAESCO ESPC Project Case Studies](#)

On the Horizon

DOE will publish six new ESPC-related resources in 2016:

- *Energy Savings Performance Contracting Guidelines for Developing, Staffing, and Overseeing a State Program*
- *Performance-Based Contracting: A Primer for K-12 Schools*
- *Energy Savings Performance Contracting for Wastewater Treatment Facilities*
- *Implementation Models for Encouraging ESPC in an Underserved Market*
- Decision trees for ESPC financing options and data tracking tools
- Transition toolkit for state and local managers & elected officials

New Release from SEE Action

Guide for States: Energy Efficiency as a Least-Cost Strategy to Reduce Greenhouse Gases and Air Pollution, and Meet Energy Needs in the Power Sector

- For state air regulators and other state policy makers / administrators and their stakeholders
- Practically-oriented, covering:
 - Established policy and program options to advance demand-side energy efficiency (both ratepayer-funded and non-ratepayer-funded)
 - Case studies of existing regional, state, and local policies and programs with sources for where to go for more information
 - Tools and methods that allow states to understand the range of expected savings from energy efficiency and common protocols for documenting savings