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Easy Money!

Leveraging Energy Projects With Ratepayer-Funded
Incentives for Energy Efficiency, Renewables and Demand
Response



Ratepayer-funded Incentives Overview

Overview – EE Programs

- **State-based incentives for EE now ~ \$5B**
 - nearly \$1B for both RE & DR/LM, too
- **Strong expansion expected to 2020**
 - total expected to reach \$7.5-12.4B (EE only)
- **It's not just the usual suspects anymore**
 - new entrants: NM, MI, NC, AR, VA, OH, PA ...
- **Drivers and trends**
- **How to identify these funds:**
 - DSIRE: www.dsireusa.org
 - FEMP: www.eere.energy.gov/femp/financing/energyincentiveprograms.html

Current Picture – EE Funding

- ~ 45 states have ratepayer-funded EE
- 2009 budget (EE only) was ~ \$4.4B (source: CEE)
 - up from \$3.1B in 2008 and \$0.8B in 1998
 - ~ 80% (\$3.5B) on electric side; ~ \$0.9B for gas EE
- 2009 LBL study ID'd ~ 15 leaders, spending 1%+ of revenues from electric sales
 - New England, west coast, NY, NJ, WI, MN, IA, ID, UT
 - Besides leaders, two other categories: “up-and-comers” (~ 15) and “uncommitteds” (~ 20)
- Grade inflation (one year later - 2010):
 - Several up-and-comers would now qualify as leaders
 - 6-8 uncommitteds would now be up-and-comers

Current Picture – RE Funding

- (to be completed)

Types of EE Incentives

- **Most common: rebates for EE equipment**
- **“Custom” programs**
 - unusual equipment or multiple measures producing “whole building” savings
- **Design assistance (e.g., for new construction)**
- **Free or subsidized audits**
- **Re-/retro-Commissioning**
- **Incentives for performance contractors**
- **Load management programs (focus on kW)**

Types of DR Incentives

- Typical DR program parameters
- Variations
 - TOU, CPP, capacity bidding, etc.
- Typical DR equipment requirements
- New California Programs
 - E.g., PG&E offering incentives for DR in new construction
 - Auto-DR brings “smart grid” to federal facilities
- (more tbd)

Types of DG Incentives

- **Common renewables: rebates for PV and solar thermal for hot water heating**
- **Increasing funding for other renewables**
 - **Wind, geothermal, small hydro**
- **CHP**

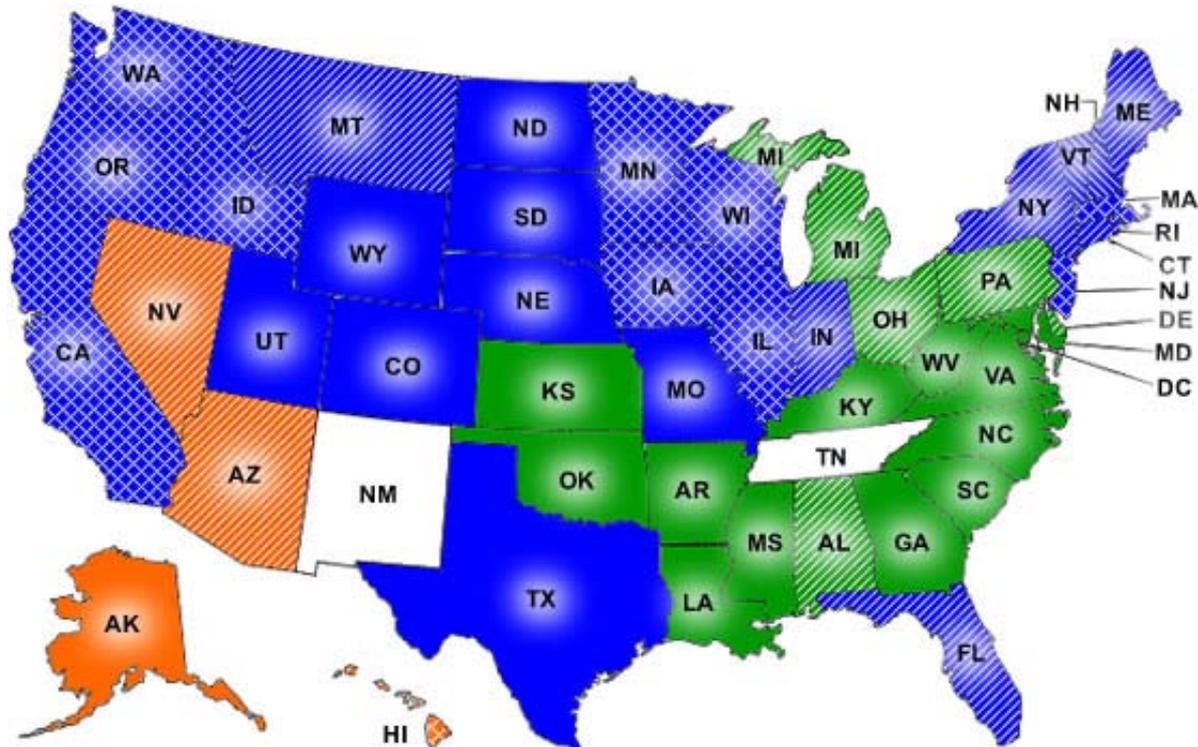


Trends and Projections

Changing Landscape

- Public purpose and/or utility EE programs + DR/load management
- DR/load management programs
- Public purpose and/or utility EE programs
- ▨ Distributed energy resource options
- ▨ Gas energy efficiency programs
- No energy management programs

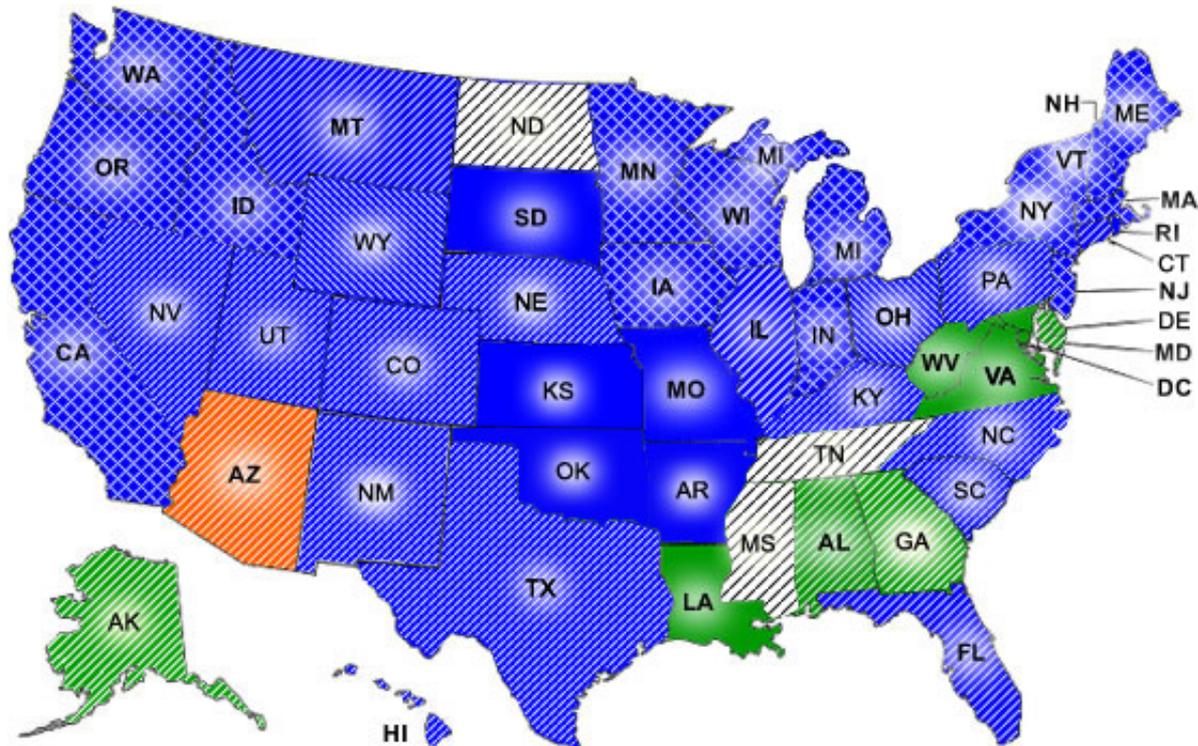
2008



Changing Landscape

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2009



Outlook to 2020

- **LBL Study scenarios: low, medium, high**
 - **Low Case: funding holds at current levels or increases to meet EE portfolio standard (EEPS)**
 - **High Case: Leaders at 3-6% of electric revenues, Uncommitteds reach 0.8% of revenues by 2020**
- **Projections do not include**
 - **Carbon Auctions (e.g., RGGI, big source of revenue for 10 Northeastern states)**
 - **Forward Capacity Markets (big source of revenue for New England states and PJM coming on strong)**
 - **ARRA funds (\$3B to State Energy Programs)**
 - **National EE Portfolio Standard**
 - **Study found that 15% national EEPS would require savings increase of 18-68% (from high to low cases)**

Trends

- **Growth, growth, growth!**
- **Some SE states starting to see EE as resource**
 - 2009 saw fast growth in spending (but starting point was very low)
- **EX: RI and MA both recently passed “least cost procurement” legislation**
 - i.e., efficiency should be driven until marginal cost of avoided kWh = marginal cost of generating kWh
- **EX: PA going from “0 to 60” in 2010**
 - Driver: Act 129 kWh and kW targets for utilities
- **EX: NJ’s “20 by 20” goal**
 - 20% reduction in growth, per state master plan

Why the Generosity?

- **Ultimate driver: EE is cheaper than generation**
 - EE programs, *en masse*, cost ~ 2-5¢/kWh and 30-60¢/therm avoided (source: ACEEE, others)
- **And easier**
 - no siting, permitting, or transmission issues
- **Proximate drivers:**
 - EE Portfolio Standards and mandatory savings targets passed by states (inc. PA)
 - Statutory requirement that utilities acquire all cost-effective EE (e.g., in MA and RI)
 - Integrated Resource Plans (IRP) and Demand Side Management plans required by PUCs
 - RE Portfolio Standards



Specifics for Federal Agencies

(still need to flesh out/organize this section – will be more than one slide)

- **Incentives can be used with UESC, ESPC and appropriations-funded projects**
- **Encouraging integrated projects; using shorter payback to cover longer-payback (give examples)**
- **Discuss authorization to accept incentives – EPACK**
- **Agencies are allowed to take advantage of tax incentives for EE and RE by assigning to the taxpaying service provider or system owner (in the case of a PPA)**
- **Differences between utility and non-utility entities**
- **Limited reliability – funds sometimes exhausted before end of the year**
- **Additional legal information (consult with Julia)**



Case Studies

Naval Post-Graduate School Monterey, CA

- **UESC Contract, PG&E / NORESKO expedited approach**
 - ECMs natural extension of previous projects
- **\$3.5 million in 14 buildings**
 - Lighting upgrades – over 4,600 fixtures
 - 300 HP boiler improves recently upgraded central plant
 - EMCS expansion connects multiple building systems
 - Steam system upgrades improves function and reliability
- **~\$270,000 in utility rebates and incentives**
- **~ 23,700 MMBtu annual energy savings**
 - 14% reduction over current usage
- **~\$325,500 annual cost savings**
- **4.2 million lb. annual carbon reduction**

Fort Dix

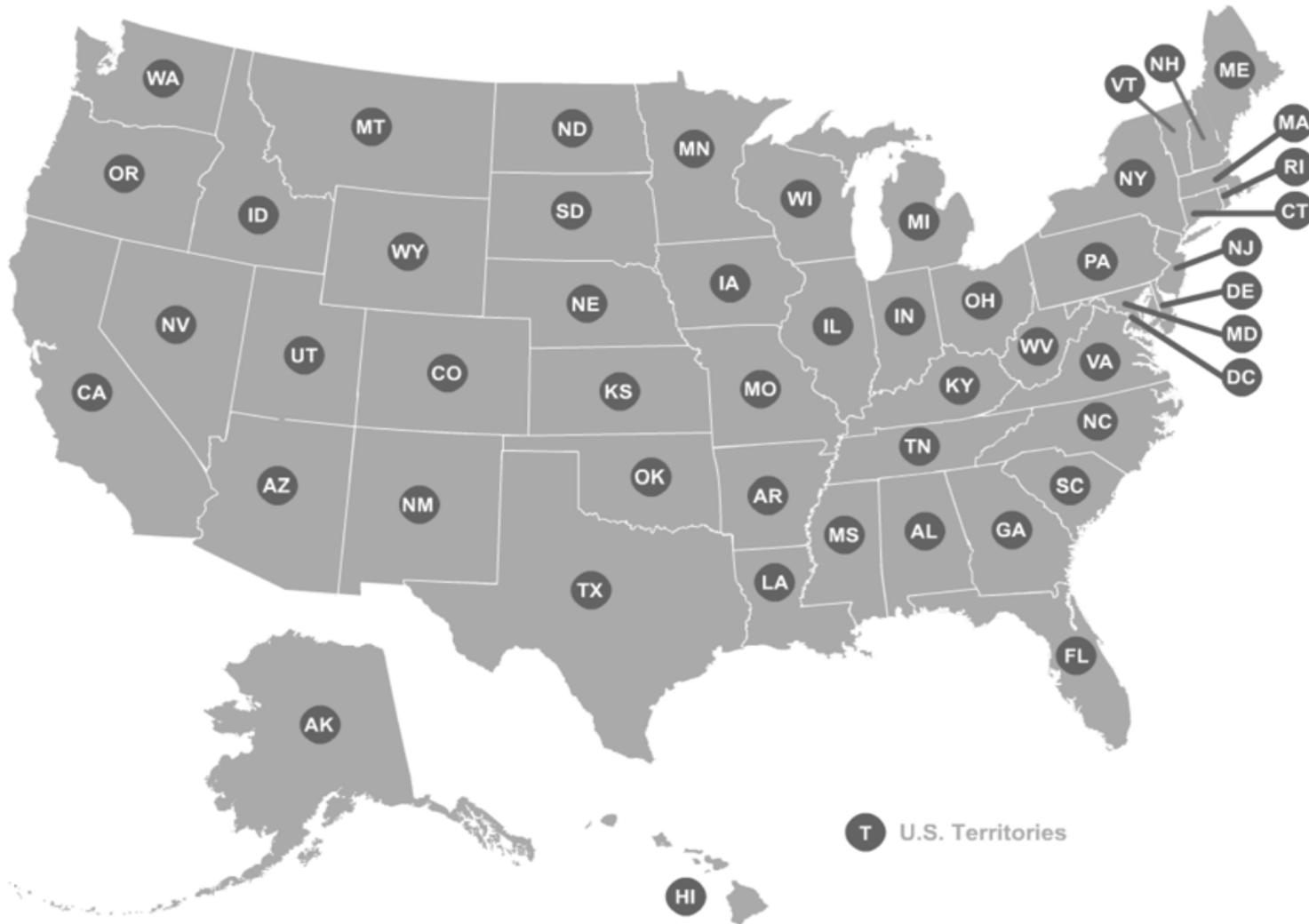
- **ESPC - Honeywell**
- **\$23 million in X buildings**
 - **Lighting upgrades – over 48,000 fixtures**
 - **HVAC replacements (Phil – is there a number?)**
 - **156 boiler controllers**
 - **EMCS – 520 new points, 3400 repairs**
 - **1400 kWDC Solar Photovoltaic**
- **~\$1.8 million in utility rebates and incentives**
- **~ X MMBtu annual energy savings**
 - **x% reduction over current usage**
- **Estimated ~\$3.6 million average annual cost savings**
- **\$685,000 annual SRECs**
- **X million lb. annual carbon reduction**

Project 3 (TBD)



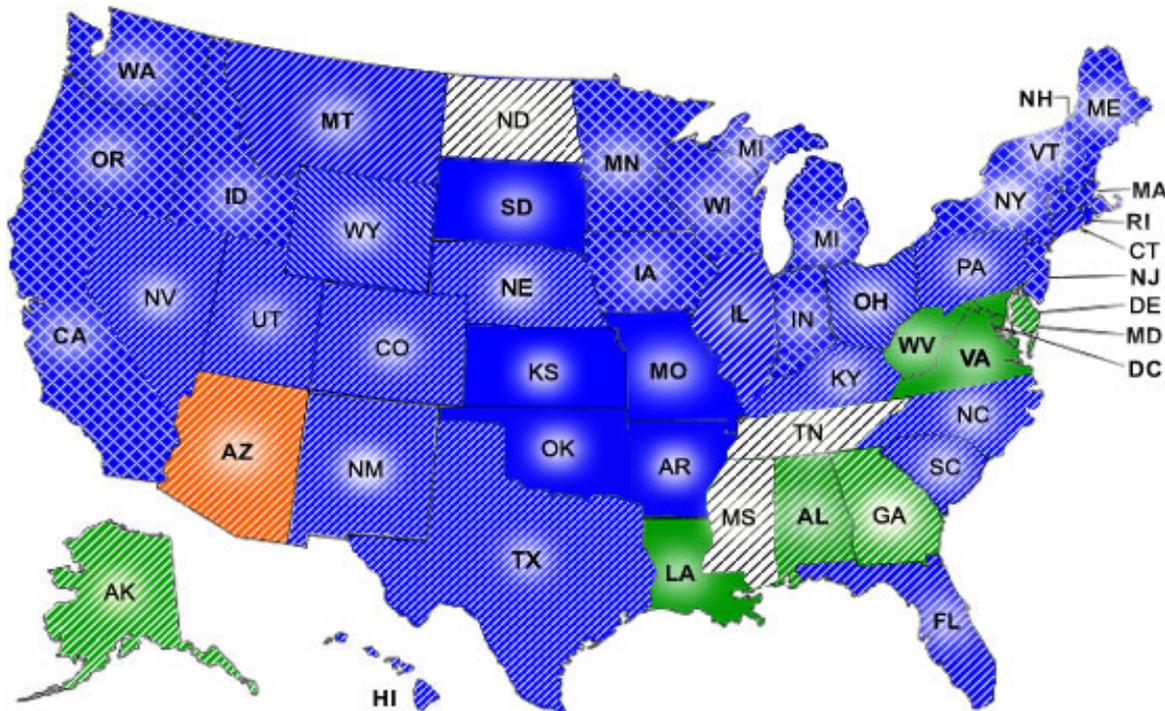
Resources

DSIRE site: www.dsireusa.org



FEMP Incentives Website

www.eere.energy.gov/femp/energyincentiveprograms.html



- Electric and gas EE, demand response, and distributed generation (DG) programs
- Programs sponsored by Utilities, Public Benefits Fund Administrator, State Agencies, ISOs; summary description and Web link for each program

Additional Links

- **FEMP UESC page**
 - <http://www1.eere.energy.gov/femp/financing/uescs.html>
 - Includes links to laws and regulations, contracts/model agreements, cost-saving best practices and case studies
- **FEMP ESPC page**
- **(more to be added)**

Conclusion

- Ratepayer-funded EE has grown rapidly in past decade in U.S. and will continue to do so
- Big driver is low cost: 2-5¢/kWh avg.
- ~ 45 states have at least some participation
 - And Mid-Atlantic states all now offering broad program portfolios statewide
- DSIRE and FEMP provide simple access to help customers assess what's available