Energy Efficiency's Critical Role in Climate Policy

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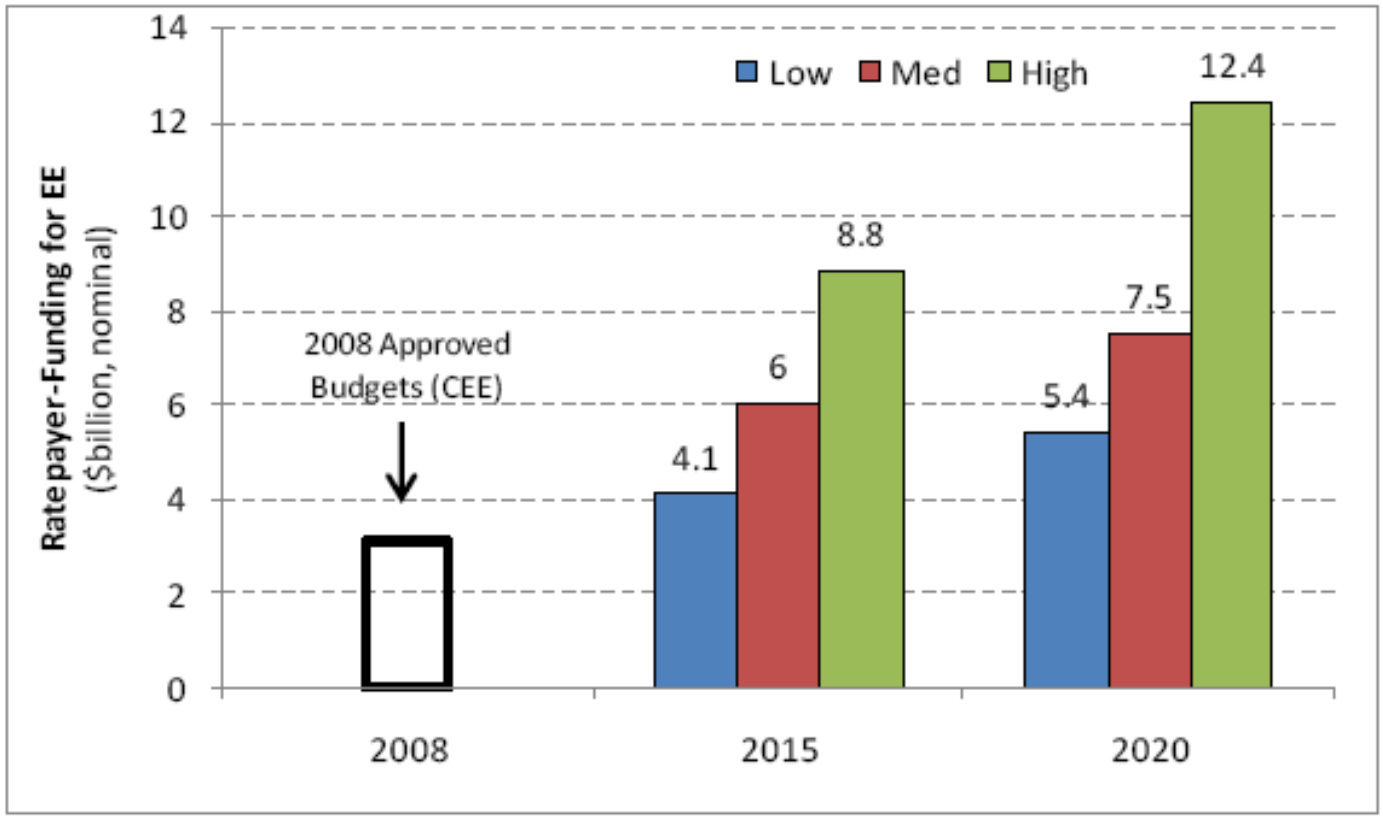
Topics

- Setting the Context
  - Federal climate and energy policy
  - Administration's support for clean energy
  - Critical ongoing contribution of state efforts
- Energy Efficiency and Climate Policy
  - The opportunity, barriers, and policy options
- EPA's Energy Efficiency Priorities
  - ENERGY STAR and voluntary programs
  - Support to State efforts
  - Integrating EE into Clean Air Act programs

Setting the Context

- Support for clean energy is a priority of the Administration
- States continue to lead the way
  - Progress continues in funding for EE programs and adoption of supporting policies

Energy Efficiency Program Funding and Electricity Savings Projected to Grow Substantially



LBNL forecasts a 250% to 400% increase (Med/High cases) in EE program funding by 2020

Cumulative savings by 2020 equal 6.1% (med) to 8.6% (high).of EIA's forecast 2020 electricity demand

Source: LBNL's The Shifting Landscape of Ratepayer-Funded Energy Efficiency in the U.S. (October, 2009) by Galen Barbose, Charles Goldman, and Jeff Schlegel

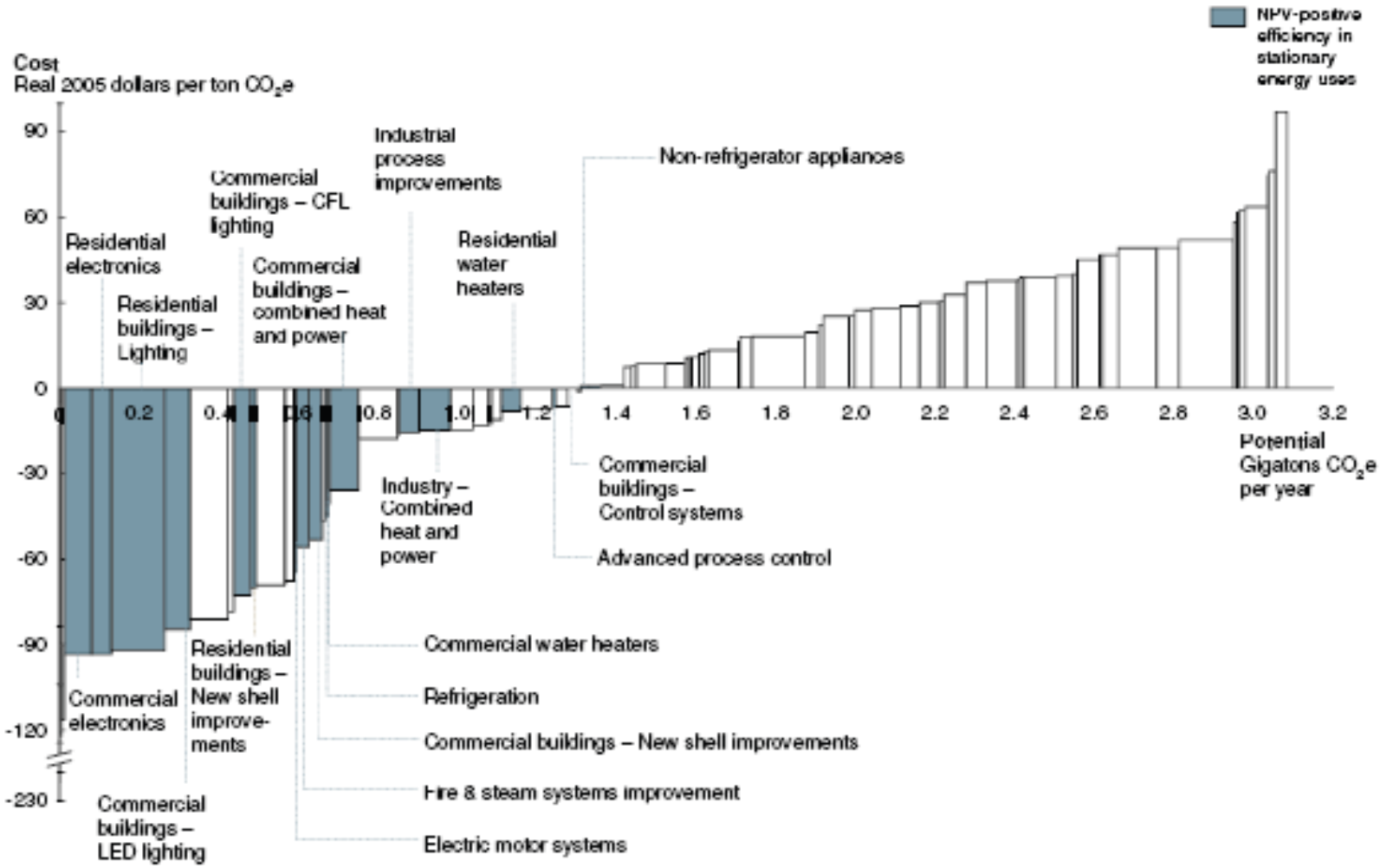
Energy Efficiency

An Essential GHG Reduction Resource

- Basic story
  - EE potential is large and cheaper than alternative energy supply
  - Tapping EE resource dramatically lowers the cost of achieving GHG objectives
  - Barriers (e.g., information, landlord-tenant) limit capture of EE resource
  - Portfolio of proven EE policies are available and required at various levels (federal, state/local) to address these well known barriers

- Studies demonstrate the critical role of EE in GHG abatement
  - International Studies
    - IPCC, 4th Assessment Report, Working Group III (2007)
    - McKinsey Global Institute (May 2007)
  - National Studies
    - McKinsey & Company (2007, 2009)
    - EPRI (2009)
    - NAS/NAE/NRC (2009)
  - Regional/State/Utility Studies
    - Numerous: including CA, VT, NY, Northwest (NWPPC), and Northeast (NEEP)

U.S. Mid-range GHG Abatement Curve – 2030



Source: McKinsey analysis

Barriers to Energy Efficiency

FUNDAMENTAL ATTRIBUTES OF ENERGY EFFICIENCY

- **Requires outlay:** Full capture would require initial outlay of approximately $520 billion, plus program costs
- **Fragmented:** Potential is spread across more than 100 million locations and billions of devices
- **Low mind-share:** Improving efficiency is rarely the primary focus of any in the economy
- **Difficult to measure:** Evaluating, measuring and verifying savings, is more difficult than measuring consumption, impairing investor confidence

OPPORTUNITY-SPECIFIC BARRIERS

Structural	• **Agency:** Incentives split between parties, impeding capture of potential • **Ownership transfer issue:** Owner expects to leave before payback time • **Transaction barriers:** Unquantifiable incidental costs of deployment* • **Pricing distortions:** Regulatory, tax, or other distortions
Behavioral	• **Risk and uncertainty:** Regarding ability to capture benefit of the investment • **Lack of awareness/information:** About product efficiency and own consumption behavior • **Custom and habit:** Practices that prevent capture of potential • **Elevated hurdle rate:** Similar options treated differently
Availability	• **Adverse bundling:** Combining efficiency savings with costly options • **Capital constraints:** Inability to finance initial outlay • **Product availability:** Insufficient supply or channels to market • **Installation and use:** Improperly installed and/or operated

OPPORTUNITY-SPECIFIC SOLUTION STRATEGIES

- **Information and education**
- **Incentives and financing**
- **Codes and standards**
- **Third party involvement**

COMPONENTS OF AN OVERARCHING STRATEGY

- **Recognize energy efficiency as an important energy resource** while the nation concurrently develops new energy sources
- **Launch an integrated portfolio** of proven, piloted, and emerging approaches
- Identify methods to **provide upfront funding**
- **Forge greater alignment** among stakeholders
- **Foster development** of next-generation energy efficient technologies

* Financial transaction barriers and actual quality trade-offs are factored into the initial NPV-positive potential calculation as real costs.

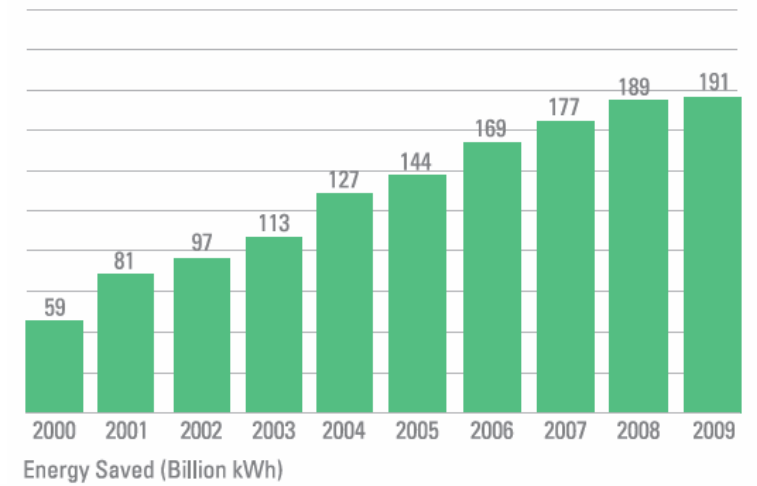
Source: McKinsey analysis

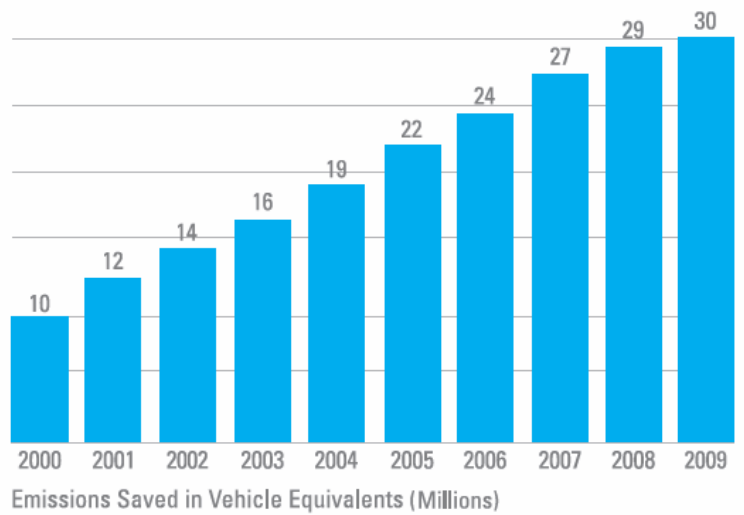
Policy Options to Capture the EE Resource

- EE incentive programs for buildings & industry
  - Ratepayer-funded EE (e.g., EERS, system benefits fund)
  - Allowance-funded EE (e.g., RGGI)
  - Taxpayer-funded EE (e.g., weatherization, EE community block grants)
- Regulations for minimum efficiency levels
  - Building energy codes
  - Appliance standards
- Standardized energy use information
  - Define/recognize high performance buildings and products
  - Disclosure information on energy use of buildings
- Energy Prices
  - GHG pricing
  - Rate design
- EE Financing programs (e.g., revolving loans, on-bill)
- EE Research & Development

ENERGY STAR To Date

- Significant savings
  - In 2009 alone, Americans, with the help of ENERGY STAR, prevented 46 MMTCE—equivalent to the annual emissions from 30 million vehicles—and saved $17 billion on their utility bills.
- National brand for efficiency
  - > 75% awareness
  - Strong brand based on expert review
- Important policy tool at Federal level





EPA Results

Enhanced Qualification & Verification for ENERGY STAR products

- Moving away from self-certification
- Over last 6 months, many strategic changes
  - Worked with stakeholders
  - New certification process
- Third-party certification of product performance prior to labeling including:
  - Qualification testing in EPA-recognized laboratories
  - Ongoing verification testing of products to ensure they continue to meet ENERGY STAR requirements regardless of changes in production process
- Effective for new products by the end of the year

For more information visit energystar.gov/testingandverification

"Top Tier": Goal and Challenge

- Goal: Within the ENERGY STAR program framework, drive more efficient products into the market more quickly
- Challenge: Avoid consumer confusion or harm to the ENERGY STAR brand
- Action to date:
  - Completed research phase
  - Proposed draft approach for stakeholder input (closed October 29th)
  - Proposed announcing final plan December 2010/early 2011

ENERGY STAR Qualified New Homes

- New specification (version 3.0)
  - Phased in during 2011. In place in 2012
- Taking steps to improve quality assurance
  - Working with RESNET to adopt ver. 3 checklists and enhance Provider QA
- Expanding to multi-family high rise
  - Expert meetings this Fall—Final planned in 2011
- Educating home appraisal industry on the value and lower operating costs of ENERGY STAR qualified homes
- Pilot “Concept Home” – ES Version 4.0

Home Performance w/ ENERGY STAR

- Initiating program sponsor quality assurance reviews
- Considering program changes to enhance effectiveness
  - Redefining Home Performance with ENERGY STAR (HPwES)
  - Establishing minimum credentials for participating contractors
  - Promoting “No Net Energy Increase” remodels with HPwES

Programs Leveraging ENERGY STAR Commercial Building Tools

- Policies and programs leverage ENERGY STAR tools, outreach resources, and recognition opportunities to enrich programs across the US, including:
  - State and Local Voluntary Energy Efficiency Campaigns
  - Commercial Building Grant and Incentive Programs
  - State and Local Commercial Building Benchmarking and Disclosure Mandates
  - Utility Programs

Portfolio Manager Enhancements

- Develop new benchmarking opportunities
  - New space types: Datacenters (complete), Senior Centers
  - Benchmarking groups: Stadiums, Multifamily
- Build automated data transfer features to grow utility/market users
- Implement new tracking features
  - Currently: water, onsite renewables, RECs, federal sustainability
  - Future: waste tracking, CHP, other greenhouse gases
- Begin requirements for new database architecture and improvements

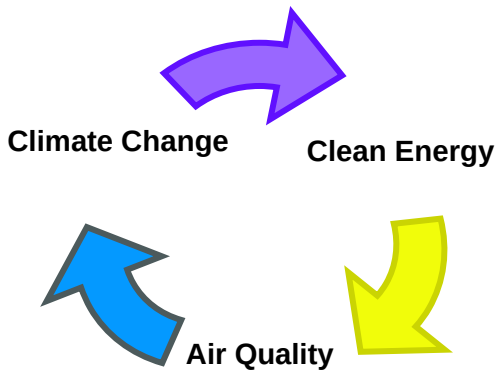
State and Local Legislation

Summary of States Leveraging Portfolio Manager

Jurisdiction	Public Buildings	Private Buildings	Disclosure	Utility Data Requirement
California	√	√	Transactional	√
Washington	√	√	Transactional	√
Michigan	√			
Ohio	√			
Hawaii	√			
D.C.	√	√	Annual	
Austin, TX	√	√	Transactional	
Denver, CO	√			
West Chester, PA	√	√		
Seattle, WA	√	√	Transactional	√
City of New York	√	√	Annual	

State and Local Climate & Energy Program

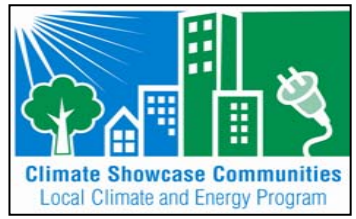
- **Co-benefit approach**
  - Reduce greenhouse gas emissions
  - Improve air quality and public health
  - Enhance energy system (increase EE, lower costs, improve security/reliability)
  - Help achieve economic development goals
  - Support quality of life initiatives
- **Program Offerings**
  - Best Practice approaches
  - Tools, guidance and outreach support
  - Measurement and evaluation expertise
  - Peer exchanges



Clean Energy: Energy Efficiency, Renewable Energy, Combined Heat and Power

www.epa.gov/statelocalclimate

Climate Showcase Communities Grant



- **$10 million competitive grant program**
  - showcases documentable, replicable GHG reductions that build community capacity and address multiple benefits
  - Local and tribal government climate projects
- **Program Framework**: build networks and peer exchange to share approaches; document and 'showcase' for all communities
  - Regular training webcasts for grantees
  - Grantees featured in routine communications forums
  - Annual Conferences
  - Tech support
- 2009 – 1st round
  - Huge Response - 444 eligible applicants
  - Twenty-five Showcase Communities Awarded, including 3 tribes
- 2010 – 2nd round
  - Received 288 eligible applications
  - Expect to award 20-30 grants
  - Anticipate funds will be available to grantees February 2011

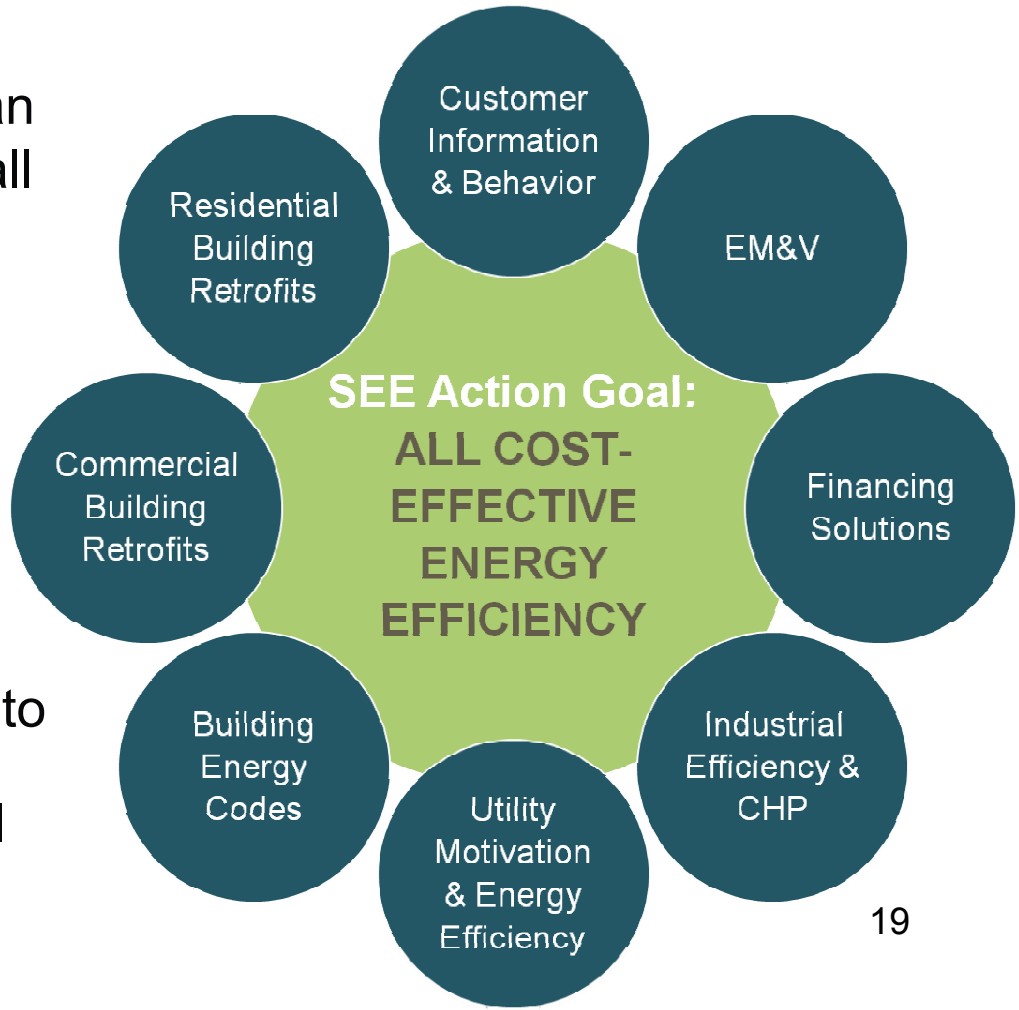
www.epa.gov/statelocalclimate/local/showcase

EPA United States Environmental Protection Agency

SEE Action

STATE ENERGY EFFICIENCY ACTION NETWORK

- Phase II of the National Action Plan
- Goal: To help the nation achieve all cost-effective energy efficiency by 2020 through assisting state and local governments implement energy efficiency policies and programs.
- Overseen by Executive Group of diverse stakeholders from across the country, chaired by DOE/EPA
- 8 Working Groups tackling issues common across states necessary to take EE to scale
- DOE/EPA continue state technical assistance



State Energy Efficiency Policies

Measuring Progress Under the NAPEE Vision Framework

- DOE/EPA continue to measure state energy efficiency policy progress
  - Based on National Action Plan for Energy Efficiency Vision Framework methodology
  - Exploring modifications and additional policy steps via SEE Action Network
  - Tracking progress of each state against 10 implementation goals and 28 key steps
- States continue to make strong progress in establishing energy efficiency as a high priority, zero-emissions energy resource
  - State-wide energy savings goals advancing across the country
  - Midwest and Southeast demonstrated greatest progress across policy framework
- Over half the states are advancing cost-effective efficiency programs
  - Offering programs across customer classes
  - Establishing robust measurement and verification
  - Providing incentives to program administrators
- Progress slowest in non-programmatic approaches for energy efficiency
  - Routine building energy code updates
  - Customer rate design to encourage energy savings
  - Combined heat and power

www.epa.gov/eeactionplan

Integrating Energy Efficiency into Clean Air Act Programs

- Ozone State Implementation Plans ("SIPs")
  - Revising electricity sector baseline projections to reflect adopted state energy efficiency policies
- Federal Transport Rule
  - Evaluating opportunities to encourage investment in energy efficiency
- Hazardous Air Pollutant Rule for Industrial/Commercial/Institutional Boilers ("Boiler MACT")
  - Proposed rule requires facility assessments and boiler tune-ups
  - Potential outreach to support options evaluation and provide information on private financing and government or utility incentives

Impact of EPA's Air Rules for Power Plants

Energy Efficiency Can Play a Key Role

- EPA is in the process of implementing several rulemakings that will reduce air emissions from power plants including
  - Interstate Pollution **Transport Rule** for existing PM and ozone NAAQS
  - **Utility MACT** (CAA Section 112/hazardous air pollutants)
  - **Utility NSPS** (CAA Section 111/criteria pollutants)
  - Interstate Pollution **Transport Rule** (#2) for 2010 reconsidered ozone NAAQS
- These rules may at times present difficult decisions and real opportunities for plant owners, state regulators, and other stakeholders
  - For example, whether to make large investments in controls or choose alternative cleaner resource options (e.g., new generation, energy efficiency, demand response)
- As states & regions grapple with these rules, energy efficiency has much to offer
  - Reduced costs for complying with EPA's rules
  - Avoidance or deferral of need for investment in new generation
  - Lower bills for ratepayers
  - Reduced reliability challenges
  - Reduced CO2 emissions

Guiding Principles

- **Promoting common-sense strategies that encourage investment in energy efficiency and updated technologies**
- **Using similar strategies to capture multiple pollutants**
- Setting clear, achievable standards while maintaining maximum flexibility on how to get there
- Seeking input from the citizens, industry, affected entities, other stakeholders, as well as our partners in state, local and tribal governments.
- Setting the standards that make the most sense – focusing on getting the most meaningful results through the most cost-effective measures.