

U.S. EPA Clean Energy Updates

Elizabeth Craig, Director Climate Protection Partnerships Division February 10, 2012



Learn more at energystar.gov

EPA's Climate Protection Partnerships

- Supporting Administrator's priorities
 - Taking action on climate change
 - Improving air quality
- Achieving environmental results
 - In 2010 prevented more than 345 MMTCO2e of GHG emissions (81 million vehicles emissions equivalent)
 - Cumulatively, preventing more than 5,400 MMTCO2e
- 20 years of partnership success
 - More than 23,000 partners
 - Invested about \$102 billion in energy-efficient, climate-friendly technologies during 2010
 - Net annual savings of \$21 billion to consumers and businesses



Today's Discussion Topics

- EPA's Clean Energy Strategies for Cleaner Air Update
 - Updates
 - Cross-state Air Pollution Rule (CSAPR) and Mercury and Air Toxics Standards (MATS)
 - Clean Energy in State Implementation Plans (SIPs)
 - Greenhouse Gas Reporting Program (GHGRP)
 - Industrial Boiler MACT
- EPA Clean Energy Program Updates
 - ENERGY STAR
 - Combined Heat and Power
 - Green Power Partnership
 - Methane Programs
- Tools and Resources for States



Clean Energy Strategies for Cleaner Air

- EPA's regulatory agenda reducing emissions from power plants and industry; cleaning the air while growing the economy
 - Regulations long delayed
 - Benefits greatly exceed costs
 - Investments drive new jobs, local jobs
- Employing clean energy (EE, RE, & CHP) as multiple benefits strategy
 - Lower costs
 - Support reliability
 - Reduce GHGs



Clean Energy Strategies for Cleaner Air – Working with States

- State Energy Offices play critical role in efforts to leverage clean energy in air regulatory programs
 - Expertise in policies & programs to accelerate costeffective clean energy investments
 - Engagement with environmental regulators to support least-cost compliance strategies for near and longer term
- EPA is working with states to demonstrate specific opportunities for EE/RE in air rules
 - Partnering with Minnesota on Air Rules Policy Pilot
 - Helping NARUC extend pilot approach to additional states



Updates on CSAPR and MATS

(Presented in San Antonio in September 2011)

- Cross-State Air Pollution Rule (CSAPR)
 - Finalized July 6, 2011, to reduce transported pollution that significantly affects downwind nonattainment and maintenance problems
 - On December 30, 2011, the U.S. Court of Appeals for DC
 - Stayed CSAPR pending judicial review and set April 2012 for hearing; ordered CAIR to remain in effect pending resolution
 - <u>Clean energy opportunity</u>: final rule supports States' inclusion of EE allowance set-asides for SIPs
- Mercury and Air Toxics Standards (MATS)
 - Finalized December 16, 2011 (Federal Register this spring)
 - <u>The first national standards</u> to reduce emissions of mercury and other toxic air pollutants from new and existing coal- and oil-fired power plants



Update on CSAPR and MATS (Continued)

Compliance

- EPA expects most facilities will comply with this rule through a range of strategies, including the use of existing emission controls, upgrades to existing emission controls, installation of new pollution controls, and fuel switching.
- Existing sources generally will have up to 4 years, if they need it, to comply with MATS.
- EPA also is providing a pathway for reliability-critical units to obtain a schedule with up to an additional year to achieve compliance. This pathway is described in a separate enforcement policy document. The EPA believes there will be few, if any situations, in which this pathway will be needed.
- <u>Clean energy opportunity</u>: Sensitivity analysis quantifies benefits of complementary energy efficiency policies.



Update: Incorporating Clean Energy in State Implementation Plans (SIPs)

- EPA is making it easier to account for the emission benefits of EE/RE policies and programs in State Implementation Plans (SIPs)
 - Roadmap for Incorporating EE/RE Policies and Programs in SIPs (www.epa.gov/airquality/eere.html)
 - Analysis of projected emissions impacts from existing state EE/RE policies (www.epa.gov/statelocalclimate/state/statepolicies.html)
- Next Steps
 - Coordinating release of Roadmap and Analysis March 2012
 - Conducting outreach and providing technical assistance to states



Greenhouse Gas Reporting Program

- Covers 41 source categories for reporting, accounting for 85-90% of U.S. GHG emissions.
 - Monitoring began in 2010 for 29 source categories
 - 1st reporting deadline was September 30, 2011
 - An additional 12 source categories began collecting data in 2011 to report in 2012
- For more info:
 - www.epa.gov/climatechange/emissions/ghgrulemaking.html



"Boiler MACT"

Industrial/Commercial/Institutional Boiler NESHAP

- ICI Boiler NESHAPs (National Emissions Standards for Hazardous Air Pollutants)
 - 3 separate rules addressing: major sources, area sources, and solid waste incinerators
 - Set national emissions standards for hazardous air pollutants (e.g., mercury, other metals, organics) from industrial, commercial, and institutional boilers
- Schedule
 - Proposed June 2010; final rule March 2011
 - Reconsideration proposal December 2011
 - 60 day comment period ending February 21, 2012
 - Final rule expected April 2012
- Clean energy opportunities in the reconsideration proposal
 - Alternative output-based standard
 - Credits multiple outputs of CHP
 - Efficiency credits for measures taken to reduce onsite energy consumption
 - Requirements for boiler tune-ups and facility-wide assessments (depends on size/fuel/emissions)
 - Improved economics for re-powering with CHP
- Planned technical assistance: EPA working with DOE's Regional Clean Energy Application Centers (site-specific & cost information)



EPA Clean Energy Program Updates





ENERGY STAR Qualified Products



2012 ENERGY STAR Product Program Priorities



- Implementing third-party certification and verification testing across all product types
- Maintaining strong brand identity
 - More frequent reviews / updates to ENERGY STAR criteria
 - Appliances reviewed at a minimum every 3 years OR when a 35% market share is reached for ENERGY STAR qualifying products
 - Consumer electronics updated about every 2 years, including the use of out-year criteria that anticipate improved efficiency based on market trends
- Piloting Most Efficient
- Engaging with consumers via social marketing campaigns
- Reinforcing international partnerships



Program Integrity Update



- Third-Party Certification in place across all 60 product categories
- Accreditation Bodies (AB), Certification Bodies (CB), and Labs must meet EPA criteria
- To date, 28 ABs, 21 CBs, and 411 Labs worldwide are recognized by the program
- More than 28,000 products have been third-party certified to the ENERGY STAR requirements since January 2011
- On-going verification by CBs of a percentage of all ENERGY STAR products ramping up now



New Lighting Report





- Approximately three out of four light sockets in the U.S. still contain inefficient light bulbs.
- Residential lighting programs will continue to offer cost-effective savings well into the future.
- Future lighting programs should use a portfolio approach to incorporate a variety of efficient lighting technologies.
- Increased budgets for consumer education will be needed.
- Significant savings remain in the market.



ENERGY STAR Residential Programs





ENERGY STAR New Homes Programs



Transition to New Requirements for ENERGY STAR Qualified Homes

- New, more rigorous requirements for ENERGY STAR qualified homes (called 'Version 3')
- Homes permitted as of 1/1/2012 must meet
 Version 3 to earn the ENERGY STAR label
- Homes will be at least 15% more efficient than those built to the 2009 International Energy Conservation Code (IECC) and will include additional features to deliver a performance advantage of up to 30% compared with typical new homes
- Many of the nation's leading homebuilders have committed to building to Version 3
- More than 126,000 new homes earned the ENERGY STAR in 2011, bringing the total number of qualified homes to more than 1.3 million

Market Share for ENERGY STAR Qualified New Homes Over Time







ENERGY STAR New Homes Programs



- ENERGY STAR for New Multifamily High-Rise Buildings
 - New and substantially rehabilitated multifamily high-rise buildings became eligible to earn the ENERGY STAR for the first time in 2011
 - Must meet EPA's energy-efficiency guidelines and be designed at least 15% more efficient than buildings that meet the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) energy use standard

Affordable Housing

- In 2011 more than 5,600 ENERGY STAR qualified homes were built using funding from the U.S. Department of Housing and Urban Development's (HUD) HOME program
- More than 320 Habitat for Humanity affiliates nationwide built nearly 1,700 ENERGY STAR qualified homes for low-income families in 2011







States Sponsors and ENERGY STAR Residential Programs



New Homes

- Marketing and promotional support for participating builders
- Offering strategic incentives for builders and/or home buyers
- Technical training for builders, subcontractors, Home Energy Raters
- Coordinating local 'ENERGY STAR Summits' for partners and stakeholders
- Quality assurance of qualified homes
- Measurement and evaluation of program savings and effects

Home Improvement

- Contractor recruitment, training, and certification
- Marketing and program promotion
- Providing incentives to participating contractors and home owners
- Conducting quality assurance to ensure that work meets program standards
- Measurement and evaluation of program savings and effects





ENERGY STAR Commercial Buildings



Leverage ENERGY STAR to Jumpstart State Energy Efficiency Programs



- Access flexible tools and resources to meet your state's energy efficiency goals
- Off-the-shelf platform to help keep post ARRA momentum going
- Leverage ENERGY STAR brand recognition to reach your target markets
- Deliver better energy performance information with EPA's Portfolio Manager building benchmarking tool



Benchmarking and Disclosure Policies Moving into Implementation





Policy Impact Projection on Number of Buildings by Jurisdiction

Graphic credit: Institute for Market Transformation

- Seven U.S. jurisdictions have enacted policies
 - Affect 60,000+ buildings, ≈ 4 billion
 SF
 - All policies begin phasing in 2011-2012
- Continued interest from states and cities
 - Driven by interest in existing buildings
 - Market transparency attractive to both parties
 - Policymakers want the data



New York City Seeing Results

- Requirements
 - All buildings over 50,000 square feet
 - Annually submit energy and water consumption using EPA's Portfolio Manager
- Public Disclosure
 - September 1, 2011 City government buildings
 - September 1, 2012 Non-residential buildings
 - September 1, 2013 Residential buildings
- Better Access to Aggregated Energy Data
 - Available now from Con Edison and National Grid
- Analysis of Results
 - City government buildings: analysis published November 2011
 - Private sector buildings: analysis will be published by NYC spring 2012







EPA's 2012 National Building Competition Opens Soon



- Top ten "biggest savers" from the 2011 EPA National Building Competition showed savings of 30-60% in one year!
- Applications will be accepted in Spring 2012
 - Throw your hat in the race and submit qualified state buildings
 - Promote the competition to local governments, schools, commercial and multifamily buildings' owners in your state
- EPA will recognize
 - Overall winner
 - Top finishers by building type
 - NEW ! All buildings with improvements of 20% or more

www.energystar.gov/BattleoftheBuildings

Portfolio Manager Upgrade





- What's getting upgraded?
 - Database architecture
 - System processing
 - Web services (automated benchmarking services, etc.)
 - User Interface
 - Simpler, more streamlined functionality
 - Easier-to-generate graphical reports
 - Improved sharing feature

| 2010 | | 2011 | | 2012 | | 3 |
|----------------------------|----------------------|---------------|------------|-------------------------------------|-----------------|------------|
| Conduct user interviews | Specify requirements | Design and de | evelopment | Testing and final development | Migrate data | Rollout 25 |



ENERGY STAR Industrial



Leverage ENERGY STAR Industrial Sector



- Access industrial energy efficiency tools and resources to meet your state's energy efficiency goals
 - Visit: www.energystar.gov/industry
 - Cost-effective, widespread energy management system utilized by thousands of U.S. corporations
 - Guidelines for Energy Management
 - Sector-specific energy management tools
 - Facility EE benchmarks, Energy Guides, facility certification
 - Engaging campaigns to build industry participation
 - ENERGY STAR Challenge for Industry
 - 18 trillion Btu saved to date and growing
- Leverage ENERGY STAR brand recognition and market penetration to influence your target industries



Cement Sector Results





Source: EPA, Duke University

ENERGY STAR® Certified Industrial Plants



As of September 23, 2011

mergy

ENERGY STAR

Celebrating 20 Years of ENERGY STAR



- 20 Years of Partnership, Promise, and Progress
 - Together we have achieved meaningful reductions in greenhouse gas emissions
 - Utility bill savings have grown to nearly \$230 billion over the last two decades
 - Today, more than 80% of Americans recognize the ENERGY STAR
 - Thank you for your partnership





EPA's Energy Supply and Industry Programs



Combined Heat & Power (CHP) Partnership

- Supporting development of new CHP projects
- Recognizing CHP's pollution-prevention benefits in federal air regulations
 - Output-based standards (OBS) (e.g., Boiler MACT)
 - SIP development guidance
- Raising awareness on key CHP permitting issues with EPA region offices and states
 - CHP's treatment in the NSR process
 - Use of OBS in regulations and permits
- New! Program of cooperation with NASEO to develop tools and resources
 - Potential for CHP to achieve state energy objectives
 - State policies and programs to advance CHP deployment
 - Case studies on state CHP efforts



Green Power Partnership (GPP)

- Increasing U.S. green power supply by harnessing voluntary market demand
 - EPA provides market criteria, technical assistance, performance benchmarks and high-visibility recognition
 - More than 1,300 partners utilizing 21+ billion kWh of green power annually
 - National Top 50 list of the 50 largest green power users in the U.S.
- Green Power Communities provide a platform for community-wide participation
 - More than 30 nationwide, led by Washington, DC; Portland, OR; and Alamo Heights, TX and others
 - Includes commercial, institutional and residential stakeholders
- Green Power Partners help bring new generation projects online
 - University of Pennsylvania, Steelcase, University of Oklahoma, others



EPA's Methane Programs



Domestic Methane Programs

- Methane is potent GHGs and a source of clean energy
 - Mitigation costs are lower than for CO2 and can yield near-term climate benefits
 - Reductions also yield significant co-benefits (energy, air quality, efficiency, safety)
- EPA has expertise that is unique and widely recognized
 - Strong relationships with key industry sectors
 - Robust technical knowledge of mitigation options and deployment challenges
- Programs, including AgStar, Coalbed Methane Outreach, Landfill Outreach, Natural Gas STAR, and Economic Analysis, are:
 - Partnering with companies, governments, communities, and organizations to achieve cost-effective emissions reductions
 - Helping partners implement GHG-reducing technologies, processes, and bestmanagement practices – yielding economic and environmental benefits
- Accomplishments: Reduced GHG emissions by 71 MMTCO2e in 2010









Global Methane Initiative



- International public-private partnership to advance the capture and use of methane as a clean energy source, cost-effectively and in the near-term
 - October 2010 launch built on success of the Methane to Markets Partnership
 - 41 Partner countries; over 1100 Project Network Members, including companies, development banks, NGOs, financial institutions
 - EPA is USG lead; coordinate with State, USAID, DOE, USDA, and USTDA
- Implements cost-effective methane projects that enhance economic growth, strengthen energy security, improve air quality, improve industrial safety, and reduce GHG emissions
 - Target sectors oil and gas, coal mining, landfills, agriculture, and wastewater
 - Share US know-how and experience leading to profitable reductions
 - Results in exports of US goods and services
- Recent Accomplishments
 - Support over 600 projects and activities that have reduced GHG emissions by over 128 MMTCO2E since 2005
 - US is leveraging significant investment and engagement from the private sector over \$397 million

Clean Energy and Energy Efficiency Tools and Resources for States

- State and Local Energy Efficiency Action Network (SEE Action)
- State and Local Climate and Energy Program
- ENERGY STAR





SEE Action

- EPA co-sponsors the State and Local Energy Efficiency Action Network (SEE Action)
 - Executive Group Co-Chair
 - Staff on all Working Groups and Measuring Progress
- Focus on assistance to state and local governments in their implementation of energy efficiency policies and programs
- Update: All eight issue-focused Blueprints/Roadmaps now available at www.seeaction.energy.gov
- NASEO has a critical role throughout the effort



State & Local Climate and Energy Program Resources



- NEW! State and Local Clean Energy Financing Tool and Guide
 - www.epa.gov/statelocalclimate/state/activities/financing.html
- Develop and Implement Local Government Programs
 - Energy Efficiency in Local Government Operations: A Guide to Developing and Implementing Greenhouse Gas Reduction Programs www.epa.gov/statelocalclimate/documents/pdf/ee_municipal_operation s.pdf
- Estimate the economic (energy, air and health) benefits of new clean energy investments
 - Assessing the Multiple Benefits of Clean Energy: A Resource for States www.epa.gov/statelocalclimate/resources/benefits.html
 - Past webinar transcripts on jobs and workforce development: http://www.epa.gov/statelocalclimate/web-podcasts/forum.html
- Enhance workforce development
 - www.epa.gov/statelocalclimate/state/topics/workforce.html

ENERGY STAR Resources for State and Local Programs

Commercial Buildings

- National Buildings Competition: www.energystar.gov/BattleoftheBuildings
- Portfolio Manager: www.energystar.gov/benchmarking
- Building Upgrade Manual: www.energystar.gov/bldgmanual
- Models of Success: www.energystar.gov/success
- Web-based Training: www.energystar.gov/businesstraining
- College/Workforce Training Course: www.energystar.gov/course
- Portfolio Manager update webinars: energystar.gov/PMUpgrade

Industrial Facilities

- www.energystar.gov/industry
- Challenge for Industry
- Guidelines for Energy Management
- Industrial Focus Sector Resources

Homes

- Home Energy Advisor: Recomm www.energystar.gov/homeadvisor
- Home Energy Yardstick: www.energystar.gov/yardstick
- Consumer home improvement information: www.energystar.gov/homeimprovement







ENERGY AND POLLUTION PREVENTION



•

•









Clean Energy Resources for State and Local Programs

Green Power Partnership

- Guide to Purchasing Green Power:
 www.epa.gov/greenpower/documents/purchasing_guide_for_web.pdf
- State-level Green Power Locator: www.epa.gov/greenpower/pubs/gplocator.htm
 - Green Power Equivalency Calculator: www.epa.gov/greenpower/pubs/calculator.htm
 - Green Power Communities webinars and presentations: www.epa.gov/greenpower/communities/resources.htm#past
 - Green Power Incentives: www.epa.gov/greenpower/pubs/incentives.htm

CHP Partnership

- Emissions calculator: www.epa.gov/chp/basic.calcul ator.html
- Funding resources database:
 - www.epa.gov/chp/funding/fun ding.html
- Technical assistance for candidate sites

Domestic Methane Programs

- AgStar: project development guidance, industry directory, funding and market opportunities: www.epa.gov/agstar/tools/index.html
- <u>CMOP</u>: current & potential coal mine methane recovery projects, project cash flow model: www.epa.gov/cmop/resources/index.html
- <u>LMOP</u>: landfill gas energy benefits calculator, potential project locator tool: www.epa.gov/lmop/publications-tools/index.html
- <u>Natural Gas STAR</u>: recommended technologies and practices, service & technology provider directory: www.epa.gov/gasstar/tools/index.html

