



PA Residential Energy Opportunities from a National Perspective

ACI Home Energy Forum: Saving Energy at Home
Why PA Needs Effective Policies Now

Stephen Cowell, CEO
Conservation Services Group
September 5, 2007



Conservation Services Group



CSG

- Founded in 1984
- Nonprofit corporation
- More than 300 staff
- 14 offices nationwide
- Over 1.2 million homes and facilities served
- Manage the delivery of over 250 million dollars in energy efficiency and renewable energy programs and projects per year



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Forces pushing us to act

- Volatile energy costs
- National security & energy reliability
- Jobs, economic growth
- Global environment impacts
- Equity: lower-income households bear a greater burden of energy costs
- Need for peak power is rising faster than energy





PA: Are we doing all we can?

- How do current programs measure up to the need?
- How do plans compare with other Northeast states?
- Will Pennsylvania be ready to address its increasing energy and capacity costs?





In the news

The New York Times

Maine Law Caps Carbon Dioxide Emissions

By KATIE ZEZIMA

BOSTON, June 18 — Gov. John Baldacci Monday establishing how the state will power plant emissions in a regional effort to reduce carbon dioxide output.

Maine is one of 10 Eastern states in the Regional Greenhouse Gas Initiative, or R.G.G.I. (pronounced "Reggie"), which aims to lower carbon dioxide output from power plants.

Governor Patrick Sets Ambitious New Energy Standards for State
Boston Globe

Efficiency, Not Just Alternatives, Is Promoted as an Energy Saver
New York Times

Burning money

The Department of Energy should raise the efficiency standard for furnaces
Albany Times-Union

Seven Northeast States Launch Regional Greenhouse Gas Initiative
Environment News Service



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In the news

boston.com

Patrick plans conservation to meet rising energy needs Aim is to avoid building new power plants

The Boston Globe

By Peter J. Howe, Globe Staff | June 25, 2007

Hoping to make Massachusetts a national showcase for energy conservation, Gov. Mitt Romney plans to offset the state's annual increases in electricity demand with energy efficiency and conservation measures by 2010.

As the economy has grown and as many homeowners have replaced old appliances, electricity usage has been increasing at about 1 percent annually, US Energy Department data show.

But Patrick contends that the state can conserve energy indefinitely, for much less than the cost of building new power plants.

Patrick's policy will include legislation to require that energy efficiency efforts that, in cost per unit of power saved, are less expensive than building new power plants include subsidizing the cost of customers installing energy-saving appliances.

“plans . . . to offset the state's annual increases in electricity demand with equivalent energy-efficiency and conservation measures by 2010”



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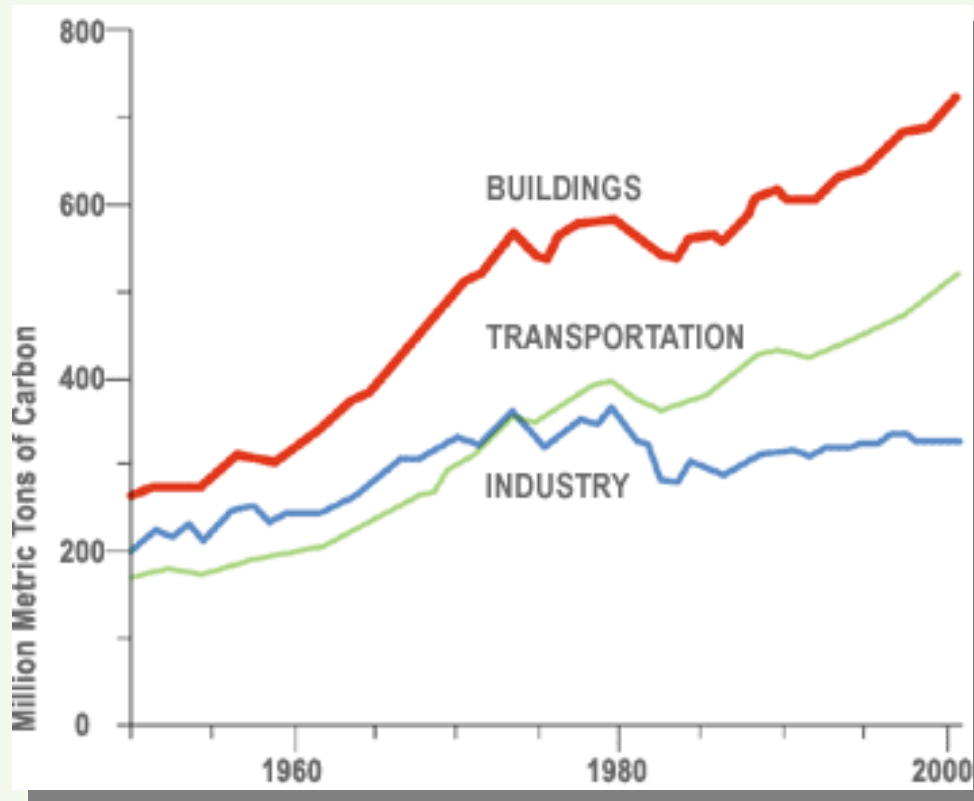
Thomas Friedman - *NY Times*

- “Green is the next Red, White and Blue”
- “The war on terror is the first war where we are funding both sides. Our side with tax dollars and their side with our oil dollars”





Buildings add to greenhouse gas



Buildings are responsible for almost half of all greenhouse gas emissions annually – 47%

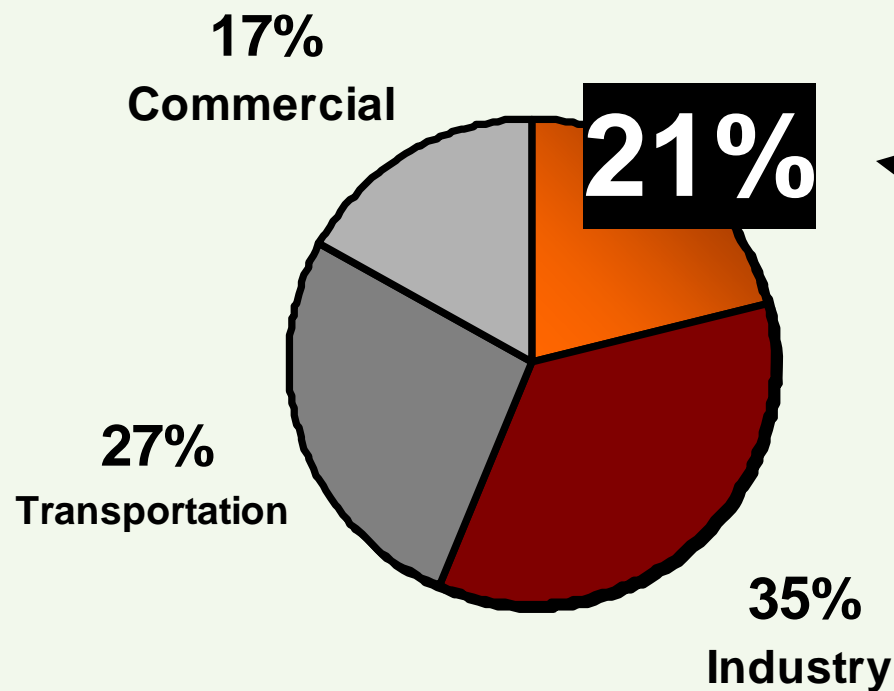
Source: Architecture 2030; U.S. Energy Information Administration statistics



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Buildings add to greenhouse gas



Residential buildings are responsible for nearly a quarter of all emissions



Residential buildings

- Major source of energy efficiency that should not be ignored
- Residential efficiency investments can produce benefits for 50+ years
- Increased resale value and improved comfort help make a better value proposition





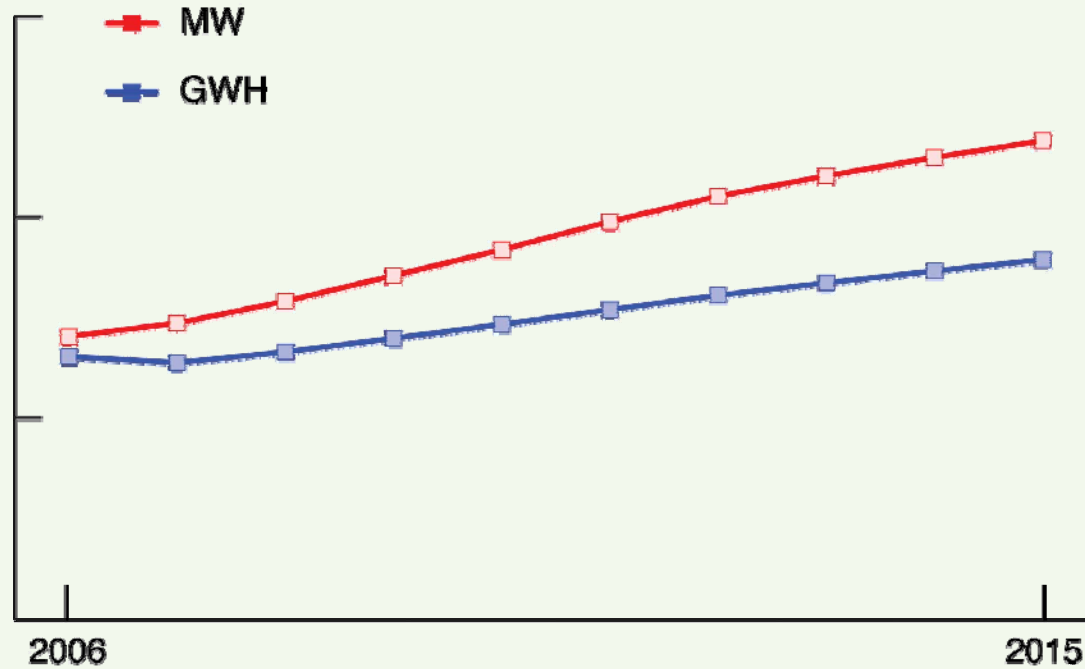
Benefit 1: Reducing capacity needs at the system level

- PJM system (PA, NJ, MD, DE) in need of increased capacity
- FERC recently ordered PJM to consider New England model that includes efficiency as a resource





Peak vs Average energy growth





Settlement Agreement: New England

- Agreement to incorporate Demand Resources into market
- Forward Capacity Auction
 - Three years forward
 - Existing capacity gets one year commitment
 - New capacity to select 1 to 5 year commitment
 - Opportunities to de-list or retire by bids
- Demand resources fully participate and have special treatment
- Measurement and Verification required





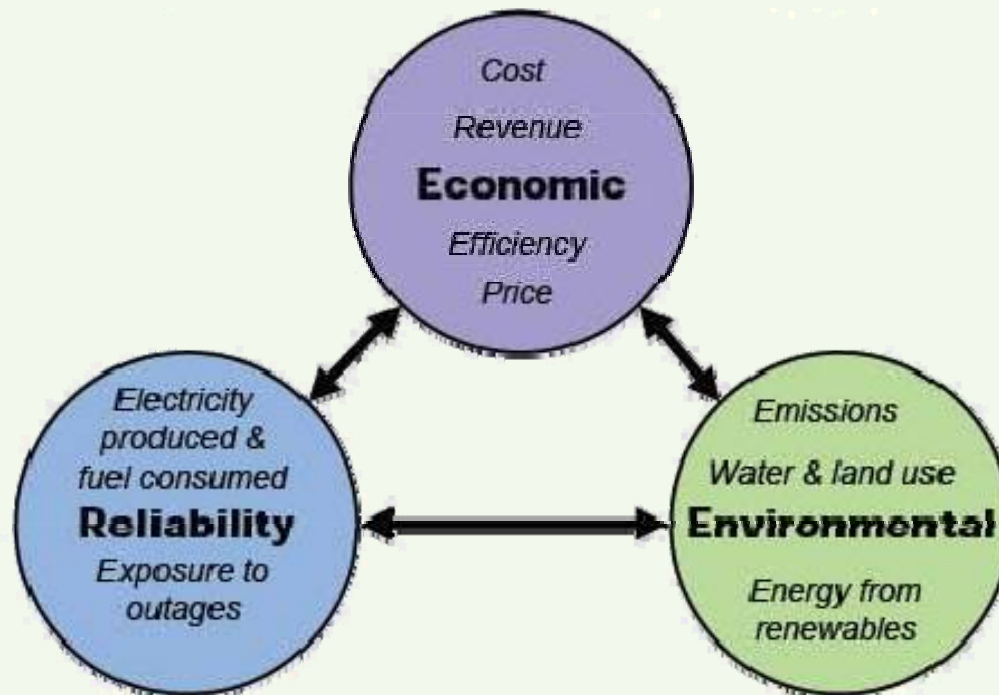
Forward Capacity Market: NE

- FERC approved settlement 6/16/06
- Stakeholders negotiate Demand Resource rules, procedures and manuals
- FERC approved rules 4/07
- 2,400 MW of DR submitted letters of intent
- 2,000 MW of DR qualification packages 6/1/07





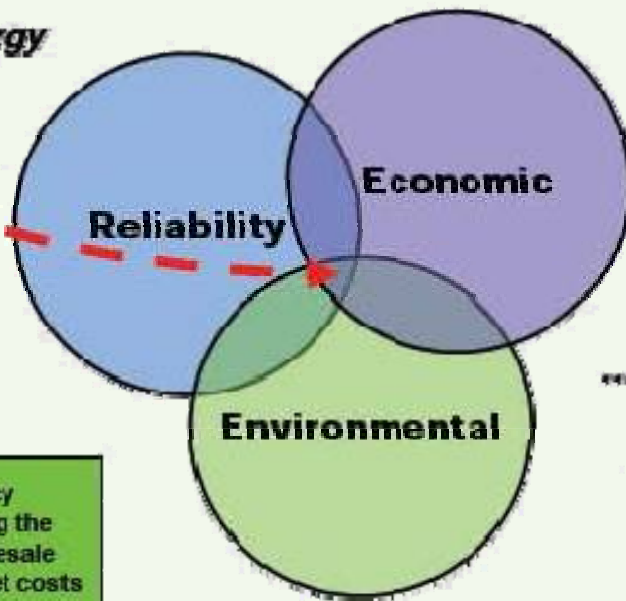
20 sets of performance metrics developed in three policy categories





But policy categories overlap, metrics should be considered together

Example: Energy efficiency scenario...



Energy-efficiency scenario has among the lowest annual wholesale electric energy market costs

...has positive economic, reliability and environmental outcomes.



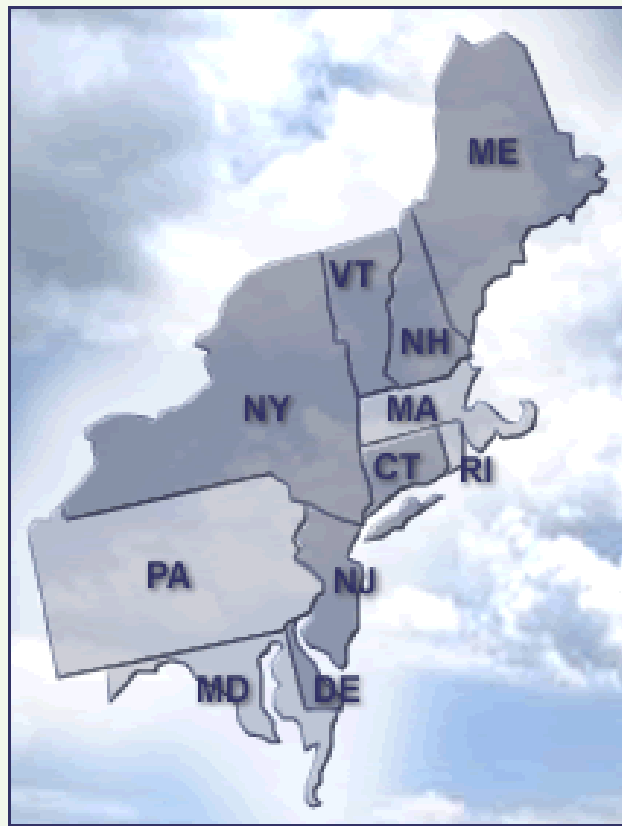
Benefit 2: Environmental compliance using Demand Resources

- NO_x : Cap and trade systems
- CO_2 : Offset markets; cap and trade systems anticipated
- Attribute-based certificates for RPS compliance for Demand Resources





Regional Greenhouse Gas Initiative



- First mandatory Cap and Trade in U.S.
 - How many allowances will be controlled by RGGI?
 - MA share = 26 million tons
 - Expected price per allowance: \$1 to \$5 per ton
\$26-130 million
 - SBC in MA currently = \$120+ million





Benefit 3: Energy Efficiency can lower Transmission and Distribution costs

- Avoid T and D as a resource benefit
- Reduce demand in transmission constrained areas
- Eliminate or defer transmission investments
- Defer distribution system upgrades
- Reduce O&M costs for distribution system components





T & D cost reduction: recent program and policy initiatives

- ISO-NE transmission relief in SW Connecticut using RTDR and EE
- DG collaborative in Massachusetts negotiating use of DG to defer Distribution upgrades
- Con Edison in NY has done several bids for distribution relief using Demand Resources
- Pilot programs in Massachusetts:
 - Brockton, MA using RTDR (National Grid)
 - Everett, MA using DR (National Grid)
 - Marshfield, MA using DR (NSTAR)





Benefit 4: Energy Efficiency is the lowest cost energy resource

- Latest Massachusetts evaluation is that Energy Efficiency is being delivered at 3.2 cents per kWh
- Latest energy costs for delivered resources are over 9 cents per kWh





Demand Resources: meeting state and regional energy policy objectives

- Efficiency reduces customer energy costs: System Benefit Charge (SBC) funded programs
- Efficiency meeting Environmental Compliance in NO_x Allowance market
- Efficiency, DR, DG meeting transmission constraints: SW Connecticut
- Demand Resources Qualification Packages to meet all regional capacity growth needs





Models and possibilities

- Procurement
 - CA utilities mandated to acquire 1% of load from EE
- Loading order strategies
- Expand/increase SBC funds
- Establish EE Portfolio Standard





States – taking action

- **Rhode Island:** passed 2006 legislation for “Least-Cost Procurement”
 - requires that all cost-effective efficiency, distributed generation, demand response, and renewable energy are utilized before more expensive energy sources
- **New York:** Governor proposed EE Portfolio Standard: 15% by 2015
- **California:** Energy Action Plan (2005) establishes EE as top priority procurement resource
- **Massachusetts:** Stakeholder teams rewriting legislation introduced in March 2007 to focus on SBC plus supplemental markets to reach 25% by 2020





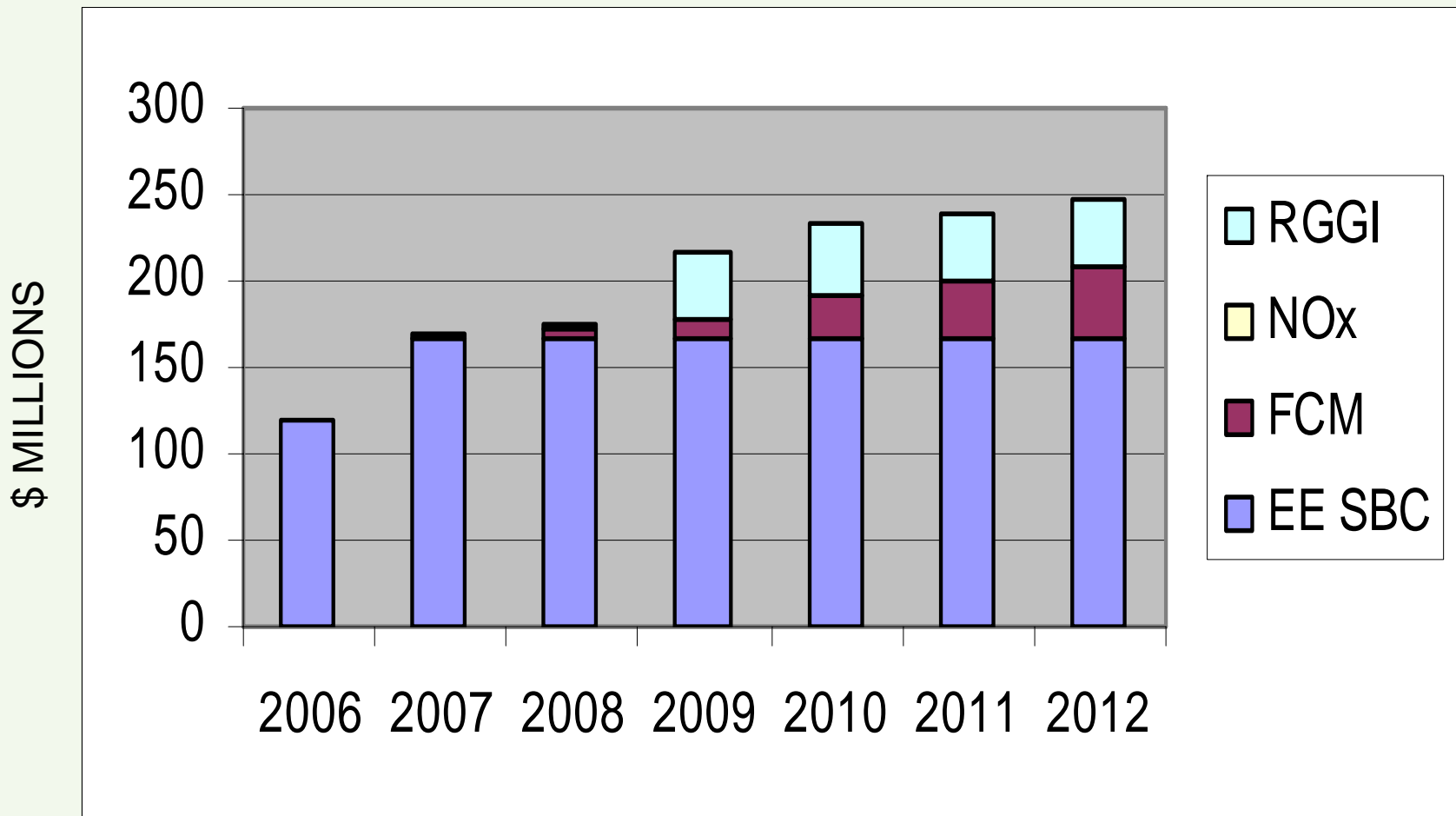
Procurement

- Mandates that utilities procure or purchase a certain amount of energy efficiency
- Standards based on either:
 - % of load growth (Texas)
 - % of total load (California-1%)
 - “All available cost effective efficiency” based on technical potential study and regulatory determination
 - pre-defined amount such as 2.5 mills/kwh





Example: MA proposed combination of sources





New Jersey clean energy leadership

- Clean Energy Program – \$200 million in funds each year to promote energy efficiency & renewable energy for all New Jersey ratepayers
 - EE and RE will provide for energy growth by 2012
 - 20% annual increase in savings
 - 785,000 MWh, 0.6 billion cf of gas savings by 2012
 - 300 MW of Class I RE facilities by 2008
 - 90 MW PV by 2008





Summary

- Northeast States and regional power operators are moving aggressively to increase efficiency spending
- Lowest cost source of power
- Most environmentally responsible
- Comprehensive residential treatments can provide long term, reliable and cost effective resources





What path will Pennsylvania take?

- Will PA embrace or reject the most effective energy cost cutting strategy available?
- You can help determine that path

