

## Energy Efficiency in New England and New Jersey

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Forum on Energy Efficiency

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## Overview

### Energy Efficiency in New England and New Jersey

- A Brief History of Efficiency Policy & Funding
- The Really Big Remaining Potential for Cost-Effective Efficiency
- Strategic Energy Efficiency Program Portfolios
- Emerging Trends and Issues

## A Brief History of Efficiency

- **The Past:** Energy efficiency based on resource acquisition in Northeast between 1985-1995
- **The Present:** Efficiency as a public benefit program in Northeast states 1995 - 2005
- **Recent Developments:** Renewed interest in efficiency as a resource – potential to double energy savings requires *policy leadership!*

## Ratepayer Efficiency Funding 1995 - 2005

### Historical High:

\$450 million plus 1994  
New England + New Jersey

### Post Industry Restructuring

\$220 million 1997  
\$350 million 2004  
New England + New Jersey

## Efficiency as a Resource 1985-1995

- **The Policy Drivers**
  - Economic growth – 3% annual
  - Increased fossil fuel prices
  - Increased cost recovery risk for new supply
  - Clean Air Act
- **The Policy Objectives**
  - Acquire least cost resource – primarily electricity
  - Equitable distribution of benefits
  - Serve low income



## Efficiency as a Resource 1985-1995

### DSM Policy Framework in Northeast:

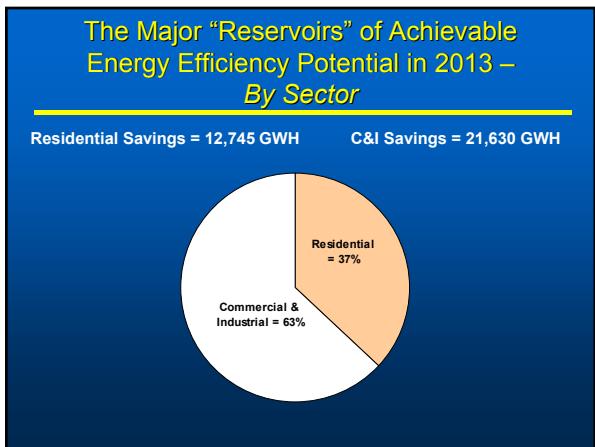
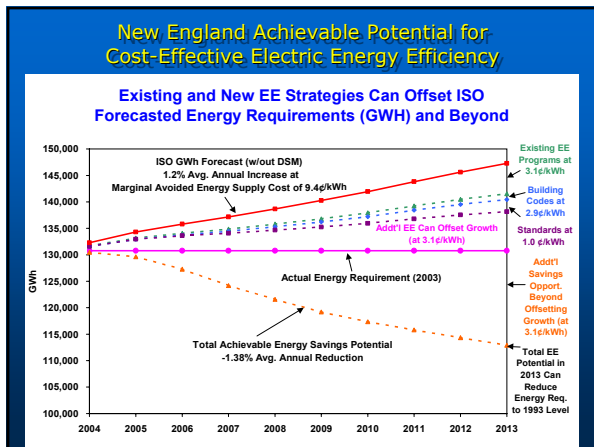
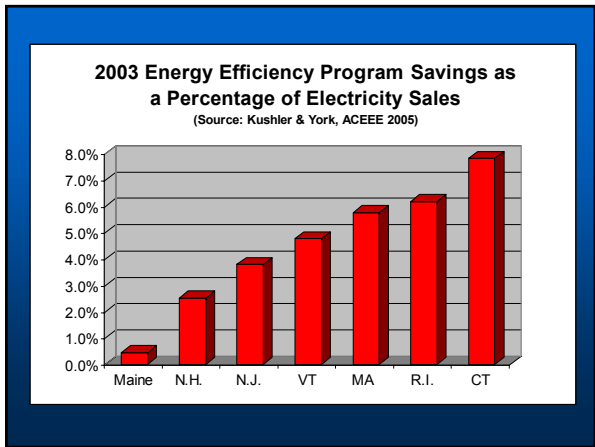
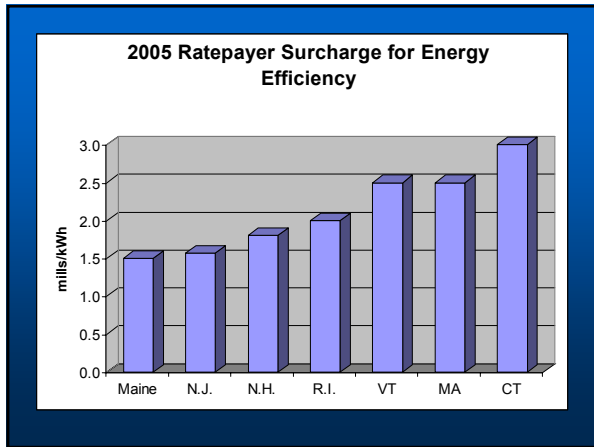
- **Utility Least Cost Plan**
  - Required every 2-3 years or when new supply proposed
  - Goals for demand-side and supply-side resources
- **Demand-Side Management Plan**
  - Program designs, evaluation plans, and budgets
  - Cost-effectiveness analysis
- **Cost Recovery**
  - Dollar-for-dollar recovery for approved plan
  - Lost base revenues
- **Shareholder performance incentives** → tied to results
- **Program Evaluation**
  - Annual reports
  - True-up estimated energy savings

# Industry Restructuring 1995 - Present

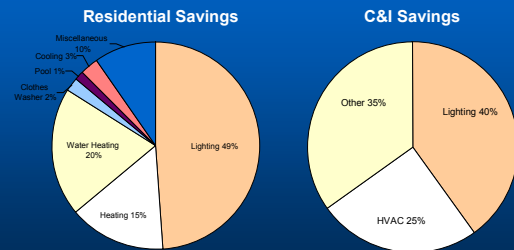
## Public Benefit Funds 1995 - 2005

**Public Benefits Funds replaced DSM Planning – *not tied to resource need!***

- **Purpose** – maintain economic and environmental benefits of energy efficiency until competitive market for energy efficiency services develops.
- **Policy Objectives:**
  - Economic benefits – CT, ME, MA, VT, RI, NH, NJ
  - Environmental benefits – CT, ME, MA, VT, RI, NJ
  - System reliability – peak constraints – CT
- **Efficiency Funds Reduced or Capped**
  - Capped – Vermont and New Jersey
  - Reduced – Most of New England
  - Eliminated – Maryland and Pennsylvania
  - Exception – Vermont capped was recently removed



## The Major "Reservoirs" of Achievable Energy Efficiency Potential in 2013 - By End Use



## Program Design Evolution to Increase Cost Effectiveness

- **First Generation**
  - Information and loans, e.g., Audit programs  
*Cheap but not cost-effective – low savings!*
- **Second Generation**
  - Rebates and performance contracting
  - Focus on retrofit  
*Cost-effective savings but not cheap!*
- **Third Generation → NJ, MA, RI, CT, VT, NH**
  - Strategic market interventions – overcome market barriers – incentives, tech assistance, target marketing
  - Priority to new construction and equipment replacement
  - Discretionary retrofit
  - Near-term savings and long-term market transformation  
*Cost-effective and cheap!*

## Third Generation Program Portfolio

- | Commercial & Industrial   | Residential  |
|---|--|
| <ul style="list-style-type: none"> <li>■ New Construction</li> <li>■ Equipment Replacement</li> <li>■ Discretionary Retrofit                             <ul style="list-style-type: none"> <li>• Small C&amp;I</li> <li>• Large C&amp;I</li> <li>• Government</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>■ New Construction</li> <li>■ ENERGY STAR HVAC</li> <li>■ ENERGY STAR Lighting and Appliances</li> <li>■ Discretionary Retrofit                             <ul style="list-style-type: none"> <li>• Low Income</li> <li>• Home Energy Performance</li> <li>• Multifamily Services</li> </ul> </li> </ul> |

## Third Generation Program Portfolio

### Commercial & Industrial *New Construction*

**Strategic objective** - capture lost opportunities, efficient economic development

- **Target market** – construction, renovation, tenant build outs
- **Incentives and services** – technical assistance, prescriptive and performance-based incentives, commissioning
- **Marketing approach** – design community outreach & training, customer outreach – field staff, coordinate with economic development and local communities, coordinate gas and electric efficiency programs
- **Results** – able to reach 30 – 50% of construction, 10-20% above code in MA, RI, CT, VT
- **Long-term goal** – change design practices, update building energy codes

## Third Generation Program Portfolio

### Commercial & Industrial *Equipment Replacement*

**Strategic objective** - capture lost opportunities

- **Target market** – customers purchasing new or replacement:
  - Lighting equipment and controls
  - HVAC equipment and controls
  - Motor systems
  - Refrigeration equipment and systems
- **Incentives and services**
  - Prescriptive incentives + technical info at the time and place of purchase
  - Technical assistance and customer training
- **Marketing approach** – industry outreach & training (designers, engineers, specifiers, distributors); customer outreach – field staff; national and regional programs and promotions to engage trade allies
- **Results** – able to reach 30–50% of market
- **Long-term goal** – improve purchasing decisions, update building energy codes and appliance standards

## Third Generation Program Portfolio

### Commercial & Industrial *Discretionary Retrofit*

**Small Commercial and Industrial Retrofit**

- **Target market** - average monthly demand ≤ 200 kW
- **Services** – Free audit, recommended improvements, contractor arrangement
- **Financial incentives** – 25% to 80% of cost to install energy efficient equipment, finance the balance at low or no interest

**Large Commercial and Industrial Retrofit**

- **Target market** – customers with average monthly demand ≥ 200 kW
- **Services** – technical information for specific market segments, assistance and referrals to qualified service providers, equipment vendors and financing agents, ENERGY STAR benchmarking, building operation and maintenance info and training
- **Financial incentives** - Prescriptive and custom incentives,

**Municipalities and Schools**

- **Target market** – local and state government buildings and facilities
- **Services** – Technical information and assistance, audits, referrals to qualified service providers and equipment vendors, building operator training and certification
- **Financial Incentives** - prescriptive and custom incentives, on-bill financing

## Third Generation Program Portfolio

### Residential *New Construction*

**Strategic objective** - capture lost opportunities

- **Target market** – new home construction
- **Incentives and services** – technical assistance – design review, prescriptive and performance-based incentives, inspections, home energy rating
- **Marketing approach** – ENERGY STAR; design community and builder outreach & training, customer outreach – field staff, coordinate with local communities, coordinate gas and electric efficiency programs
- **Results** – able to reach 20 - 40% of construction, cost-effectiveness improved by including lighting, appliances, and gas and oil savings
- **Long-term goal** – raise design practices and update building energy codes

## Third Generation Program Portfolio

### Residential *Heating, Ventilation, Cooling*

**Strategic objectives** - capture lost opportunities – reinforce best practices for equipment installation

- **Target market** – new and replacement heating and cooling equipment
- **Incentives and services** – incremental cost incentives tied for properly installed high efficiency HVAC equipment; customer information, contractor referrals
- **Marketing approach** – ENERGY STAR, trade ally outreach & training, customer education, coordinate gas and electric efficiency programs, regional and national coordination and promotions
- **Results** – able to reach 20 - 50% of equipment replacement market
- **Long-term goal** – raise industry baseline, update building energy codes and appliance standards

## Third Generation Program Portfolio

### Residential *Lighting and Appliances*

**Strategic objective** - capture lost opportunities

- **Target market** – new and replacement lighting and appliances
  - Compact Fluorescent lamps and fixtures
  - Clothes washers, refrigerators, room air conditioners, dishwashers,
- **Incentives and services** – incremental cost incentives tied for properly installed ENERGY STAR HVAC equipment; customer information, contractor referrals
- **Marketing approach** – trade ally outreach & training, customer education, coordinate gas and electric efficiency programs
- **Results** – able to reach 20 - 50% of equipment replacement market
- **Long-term goal** – increase ENERGY STAR purchases, update building energy codes and appliance standards

## Third Generation Program Portfolio

### Residential *Discretionary Retrofit*

#### *Low Income Retrofit*

- **Target market** - low income customers
- **Services** – Free audit, install cost-effective measures, appliance replacement, bill counseling, arrearage forgiveness, coordination with CAPs
- **Financial incentives** – no customer charge

#### *Single Family Retrofit*

- **Target market** – customers in detached single family homes
- **Services** – Audit with direct install of low cost measures, contractor arranging; home energy ratings
- **Financial incentives** – Prescriptive incentives, loans and referrals for financing

#### *Multifamily Retrofit*

- **Target market** – condos and apartments (4 units+)
- **Services** – Audits, direct install no-cost and low cost measures, contractor arranging, home energy ratings
- **Financial Incentives** - Prescriptive incentives, loans and referrals for financing

## Keys to Strategic Program Marketing

- **Long-term customer relationships**
  - Serve customers over time to make efficiency improvements – *market driven!*
  - Flexible program services to address customer needs – overcome barriers
  - Customer database to support marketing and track savings
- **Strategic Industry partnerships**
  - Work with trade associations to define best practices
  - Recruit, training and tech support for program participation
  - Program continuity, consistent messages
- **Regional & National Coordination**
  - Leverage resources and market attention (e.g., ENERGY STAR)
  - Develop common product specifications – consistent messages
  - Joint promotions to gain participation of major market channels
  - Joint research and coordinated pilot tests

## Emerging Trends and Issues

- **Policy: Efficiency as the most cost-effective, readily available resource to meet regional power needs and achieve carbon emission reductions.**
  - Increased interest in short-term demand response programs
  - Increased interest in gas efficiency policies
  - New interest in minimum portfolio requirements for efficiency in default service
  - 5 Northeast states have adopted appliance efficiency standards
- **Program: Emerging Opportunities and Strategies**
  - New Technologies – LED Lighting, Heat Pump Water Heating
  - ENERGY STAR home electronics (telephony, TVs, VCRs, external power supplies)
  - Increased focus on overall building and home performance
  - Coordination of ratepayer funded programs with state programs
    - High Performance Schools
    - ENERGY STAR procurement

## **Thank You!**

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