

# Market Transformation as Tool to Meet Natural Gas Savings Targets

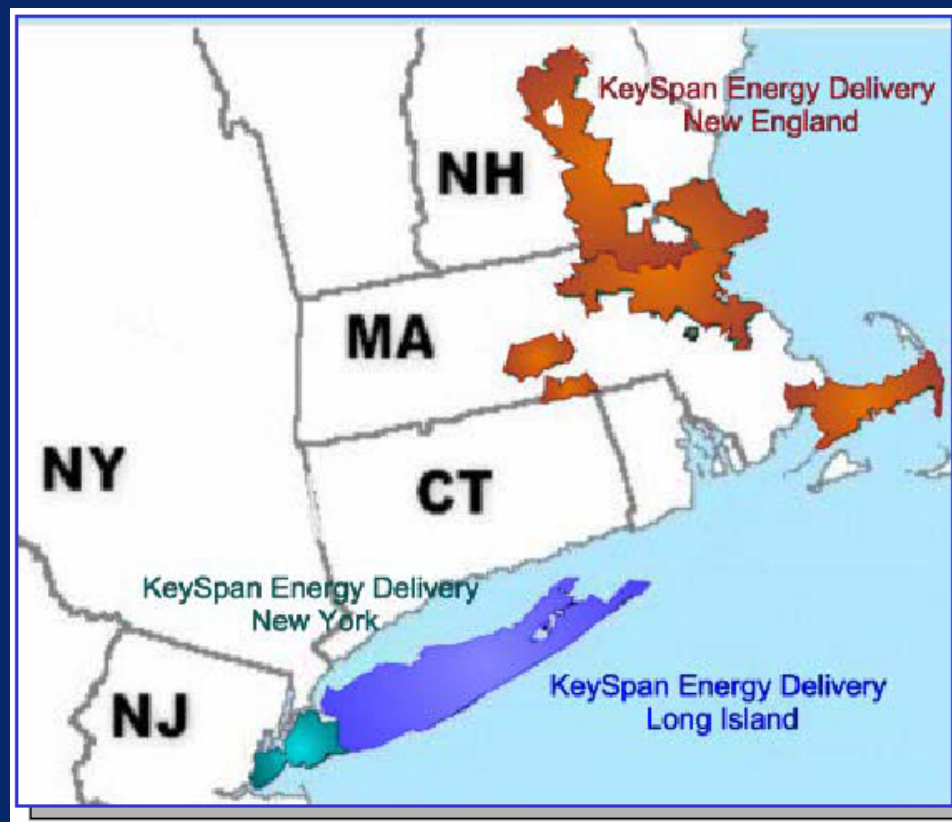
2006 National Symposium on Market Transformation

Washington, D.C.  
March 21, 2006

Bruce Johnson  
KeySpan Energy Delivery

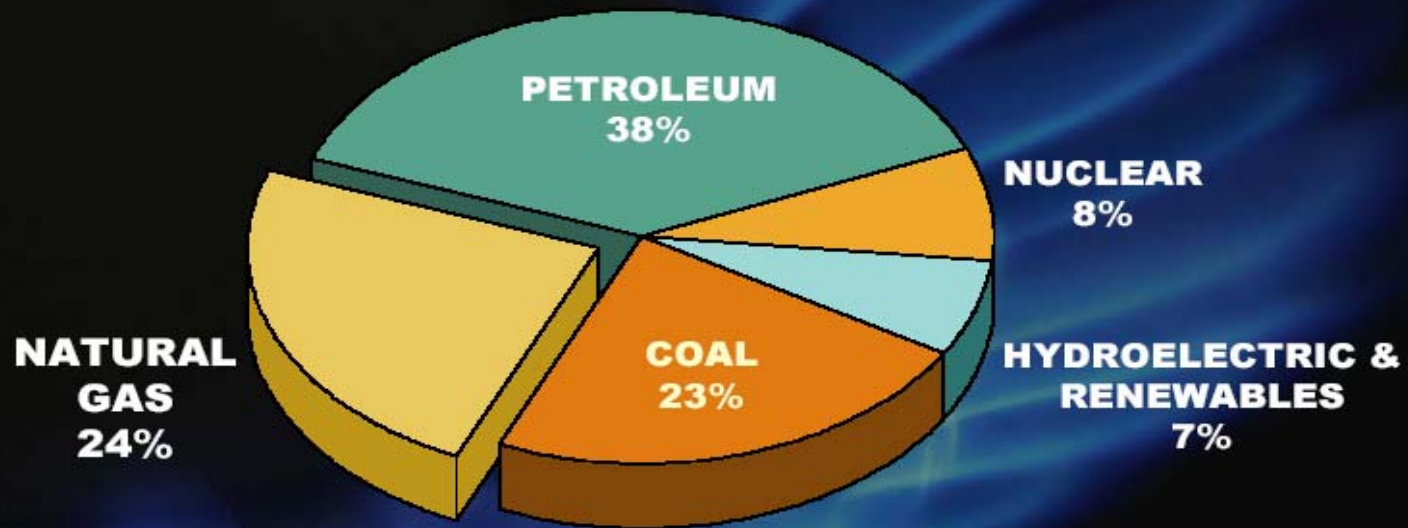
# KeySpan Distribution

- Largest LDC in the Northeast
- 1,100,000 Gas Customers in New York
- 920,000 Gas Customers in New England
- 520,000 Gas Customers on Long Island



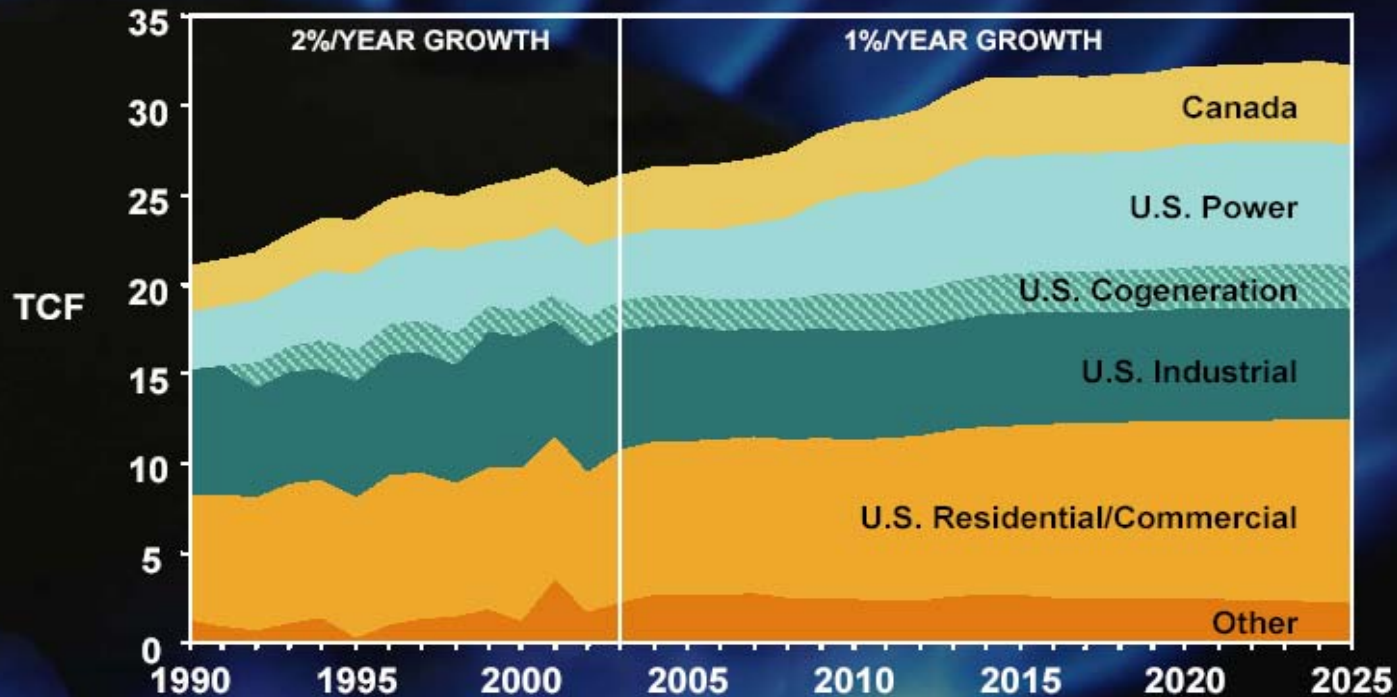
## Natural Gas is Important to Our Economy

Average Annual U.S. Energy Use  
97 TCF (equivalent)



NPC

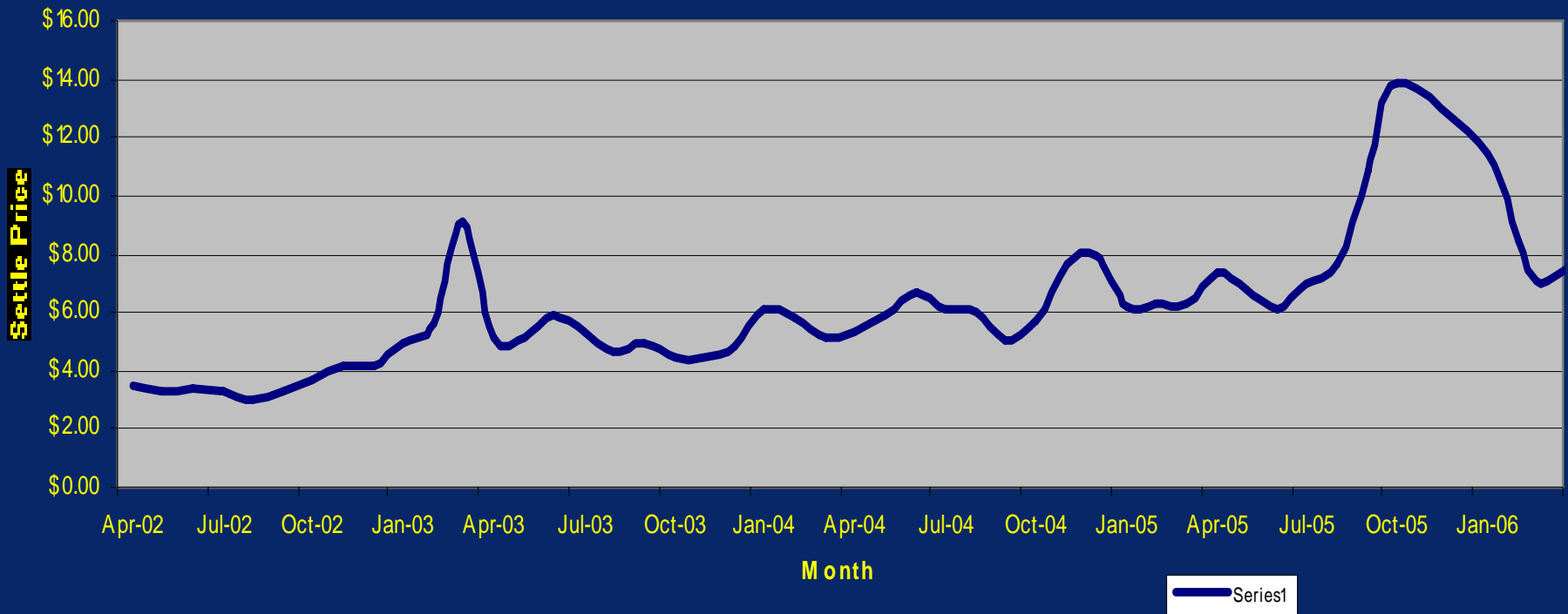
## Overall Demand Growth Will Moderate, While the Power Sector Drives Growth



NPC

# Spot Gas Prices Have Become More Volatile

NYMEX Natural Gas Monthly Settlement Prices 2002-2006



# Market Transformation

- Market Transformation is a result or a desired outcome in a market.
- A program that has a lasting effect on the structure or operation of a market.
  - Types of product or services offered.
  - Basis upon which purchase decisions are made.
  - Type or number of players in the market.
- Traditional DSM programs can be an important element of an overall Market Transformation strategy.

Source: Market Transformation in a Changing Utility Environment: National Association of Regulatory Utility Commissioners

# Market Transformation Program Design

- Documentation of how the target market operates
- Collection of baseline information
- Identification of key market barriers
- Development of plans to eliminate market barriers
- Specific implementation timelines and goals
- Estimate of program cost-effectiveness
- A program evaluation strategy
- An exit strategy

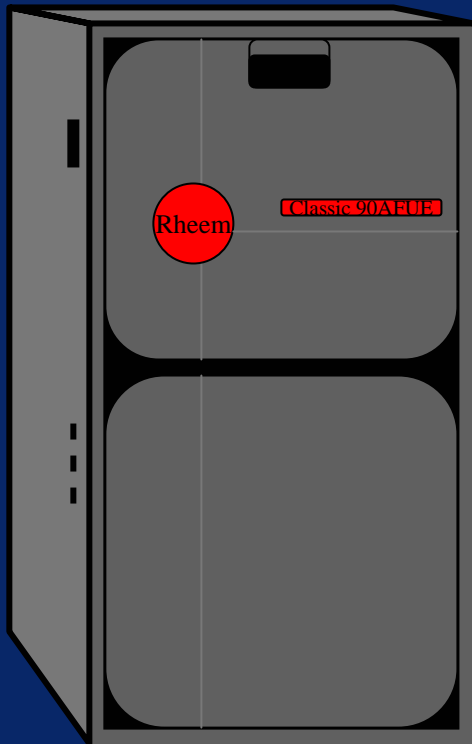
# KeySpan Residential Programs

- Residential Conservation Services
- Home Analyzer Internet Audit Service
- ENERGY STAR® Windows
- ENERGY STAR® Programmable Thermostats
- ENERGY STAR® Homes
- High-Efficiency Heating Equipment
- High-Efficiency Indirect Water Heating Equipment
- Tankless/On Demand Water Heating
- Weatherization
- Low-Income Weatherization
- Building Practices and Demonstrations





# Residential High-Efficiency Heating Program

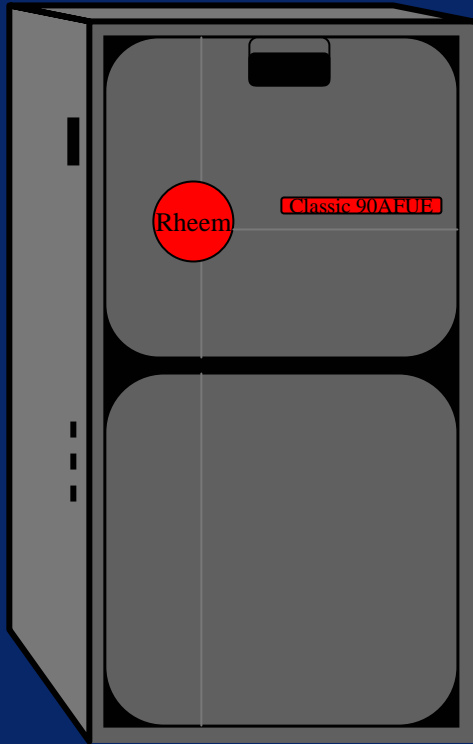


- **\$150** rebate on Furnaces (forced hot air) 90%+ AFUE\* Rating.
- **\$400** rebate on Furnaces (forced hot air) 92%+ AFUE\* Rating and ECM motor.
- **\$200** rebate on Steam Boilers (steam with electronic ignition) 82%+ AFUE\* Rating
- **\$500** rebate on Hydronic Boilers (forced hot water) 85%+ AFUE\* Rating.

High-Efficiency furnaces and boilers can save 25 to 40% on annual fuel bills in addition to reducing air pollution.

\*Annual Fuel Utilization Efficiency

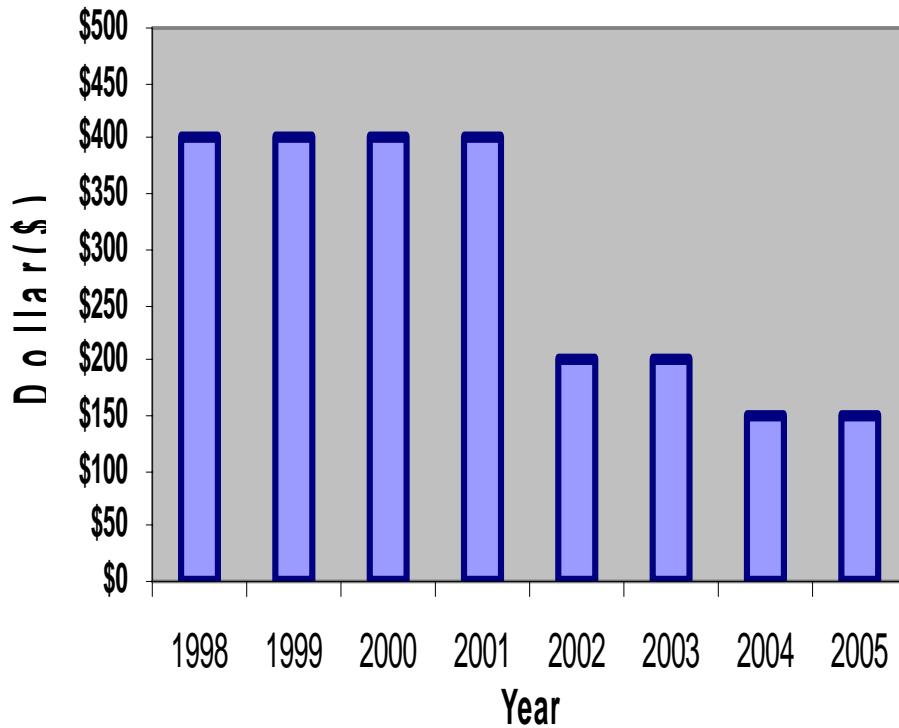
# Residential Heating Program Key Developments



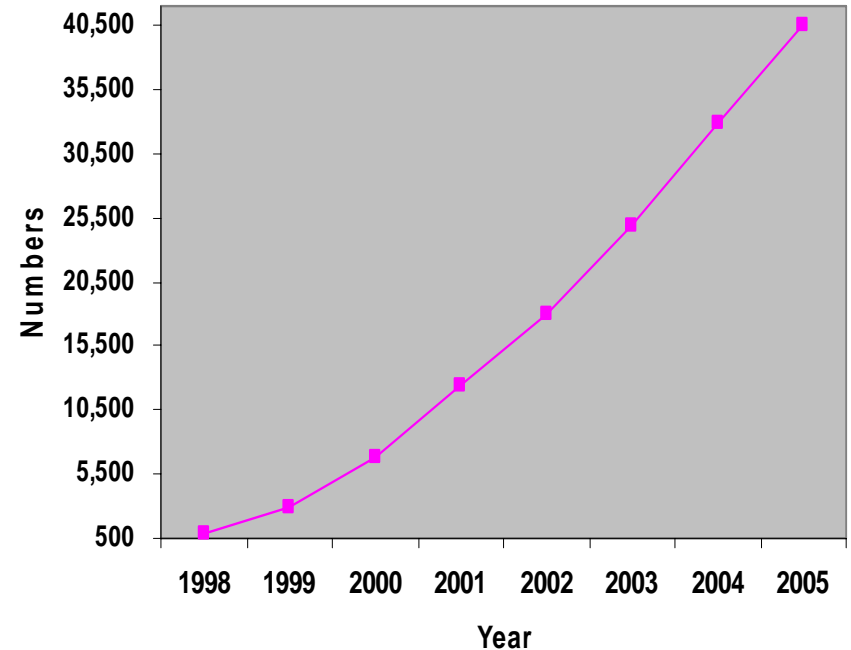
- 1997 – Program Launched
- 1997 – Formation of GasNetworks
- 1998 – CEE High Efficiency Heating Initiative
- 2000 – Instant Rebate to Conversion Customers
- 2003 – ECM Motor Addition (joint gas/electric program)
- 2005 – Massachusetts Passes Standards Legislation that includes Furnaces and Boilers
- ~ 10,000 Training Participants through 2005

# Key Developments Residential Heating Program

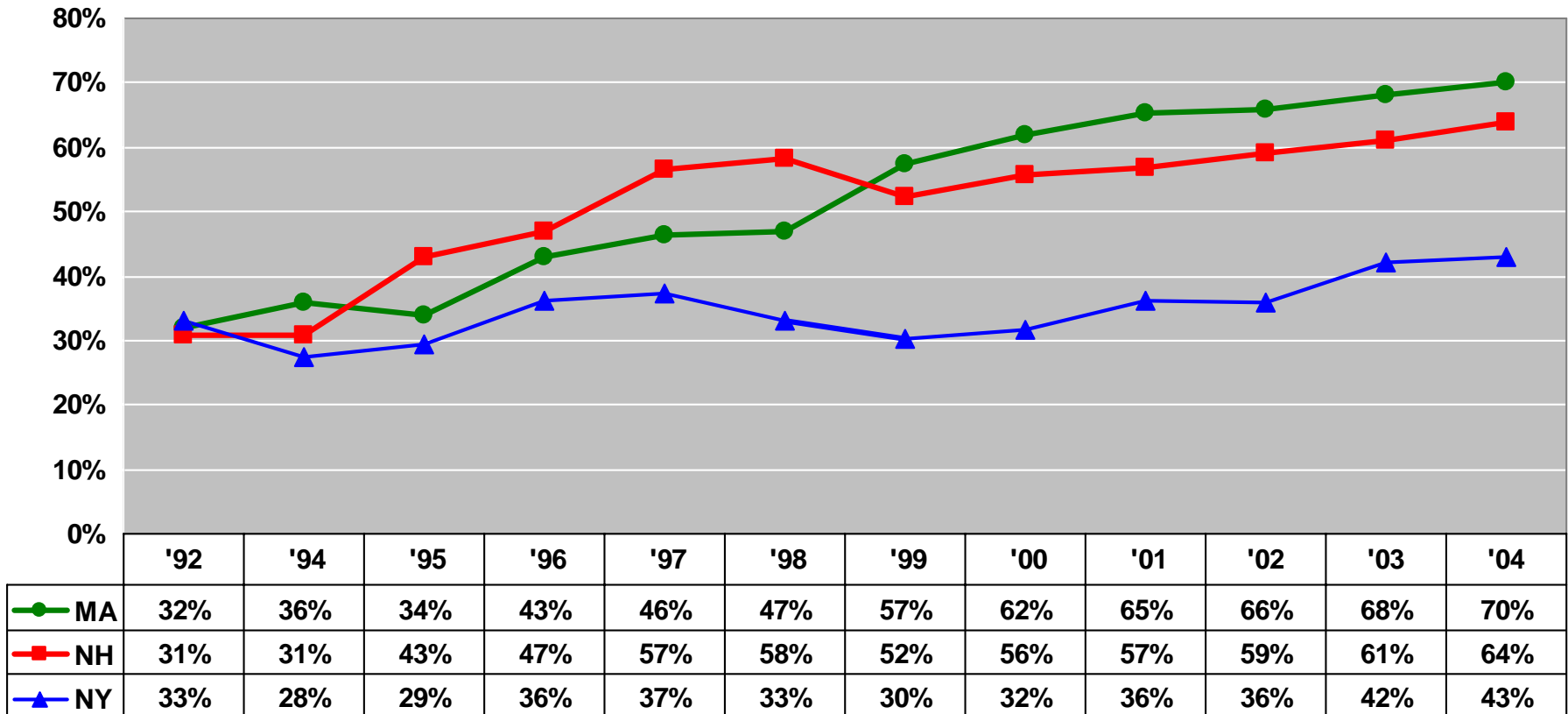
## Rebate Level



## Participants



# High-Efficiency Gas Warm Air Furnace Shipments



Note: CY'93 data is not available & "High Efficiency" is defined as AFUE rating of  $\geq 88\%$

Source: GAMA

# Program Logic Model

## Program Logic Model (PLM) KeySpan Energy Delivery's NY High-Efficiency Heating Program

**Inputs:**  
 - KeySpan dollars  
 - KED & Contractor Staff  
 - EE Expertise  
 - KeySpan's credibility and relationship with customers and trade allies

**Activities**

**Outputs  
< 1 yr**

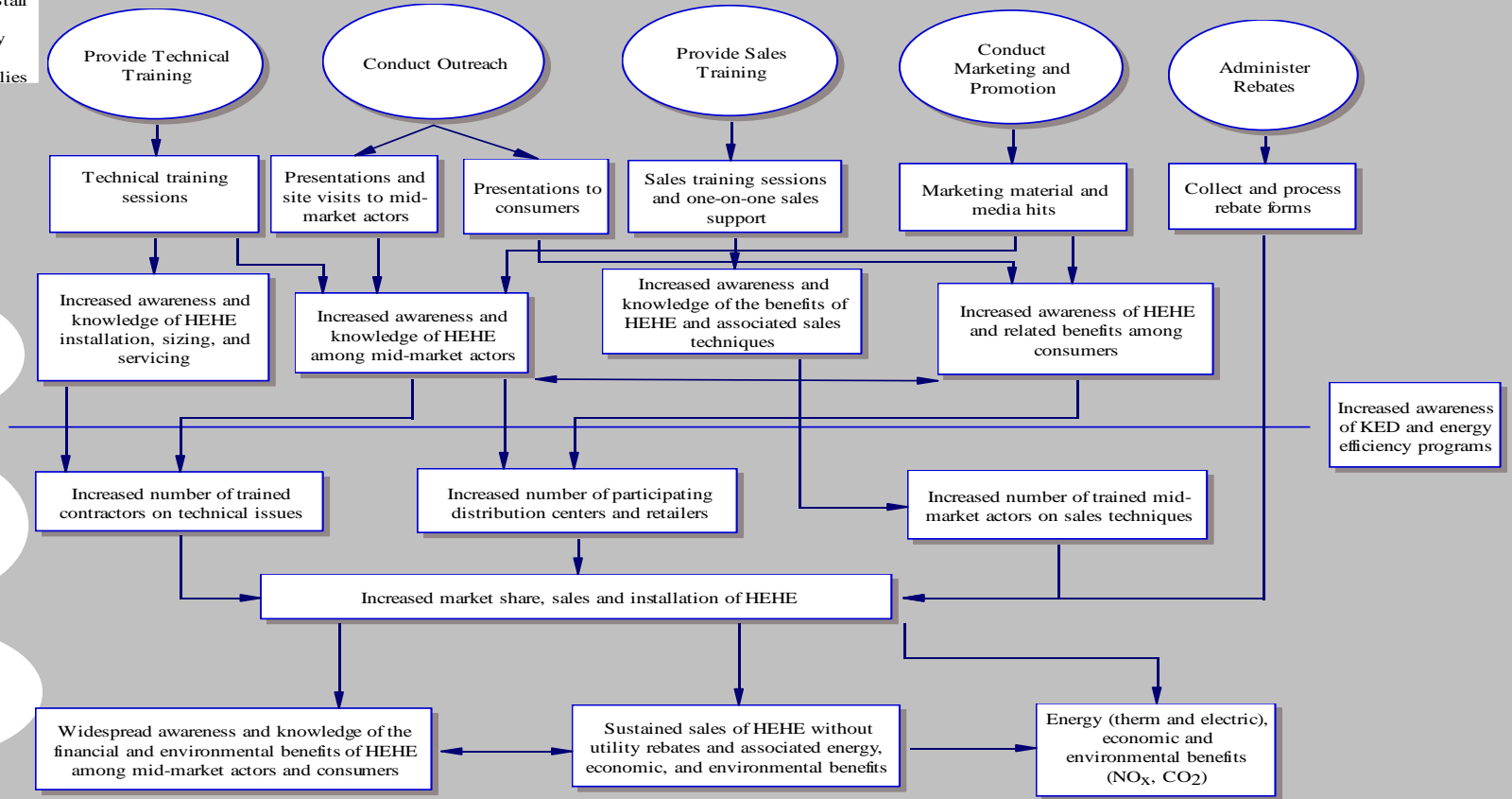
**Short-Term Outcomes  
1-3 yrs**

**Intermediate-Term Outcomes  
3-5 yrs**

**Long-Term Outcomes  
5+ yrs**

---- Supply & Mid-Market Actors ----

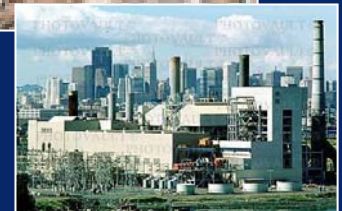
---- Demand / End Users ----



**External Influences:** Existing building stock and baseline efficiency levels; NYSERDA New York Energy Smart<sup>SM</sup> programs, LIPA Clean Energy Programs, Building Performance Institute (BPI) and other ongoing activities; City, State and Federal Codes & Standards (existing and evolving); EPA/DOE ENERGY STAR<sup>®</sup> national and regional program activities; Gas prices (current & projected); Heating equipment fuel source and related trends; Equipment applications

# Multifamily and C&I Programs

- Business Analyzer Internet Audit Service
- Custom Energy Savings Program
  - Energy Audits & Engineering Grants
  - Custom Incentives
- Commercial High-Efficiency Heating Program
- Economic Redevelopment
- Emerald Network
- Building Practices & Demonstration Program
- Training & Certification



# Innovative Technology Projects

- ***Co-Generation***

- Mass General/Partners Healthcare
- Boston Schools, Madison Park HS
- Wingate at Brighton
- Francis Cabot Lowell Mills
- Deutsches Nursing Home

- ***Microturbines***

- Filenes
- Stoneham Housing Authority

- ***Solar Domestic Hot Water***

- Roxbury Boys and Girls Club (potential project site)

- ***Fuel Cells***

- US Coast Guard, Cape Cod Air Station
- Nuvera Fuel Cell

- ***Desiccant Dehumidification***

- TJ Maxx, Waltham
- Gorton's of Gloucester
- Weymouth Ice Rink
- Everett Ice Rink

- ***Gas Cooling***

- Boston Medical Center
- Marine Biological Laboratory
- Pine Manor College

# Training & Certification

## Building Operator Certification

- Eight days of training including homework and testing.
- Receive continuing education credit(s) toward Associates Degree.
- In partnership with NEEP, Inc. and other regional utilities.



## Massachusetts State Building Code

- Three topics covered: HVAC, Building Envelope, Lighting / Power.
- Offered by the Massachusetts Board of Building Regulations and Standards.



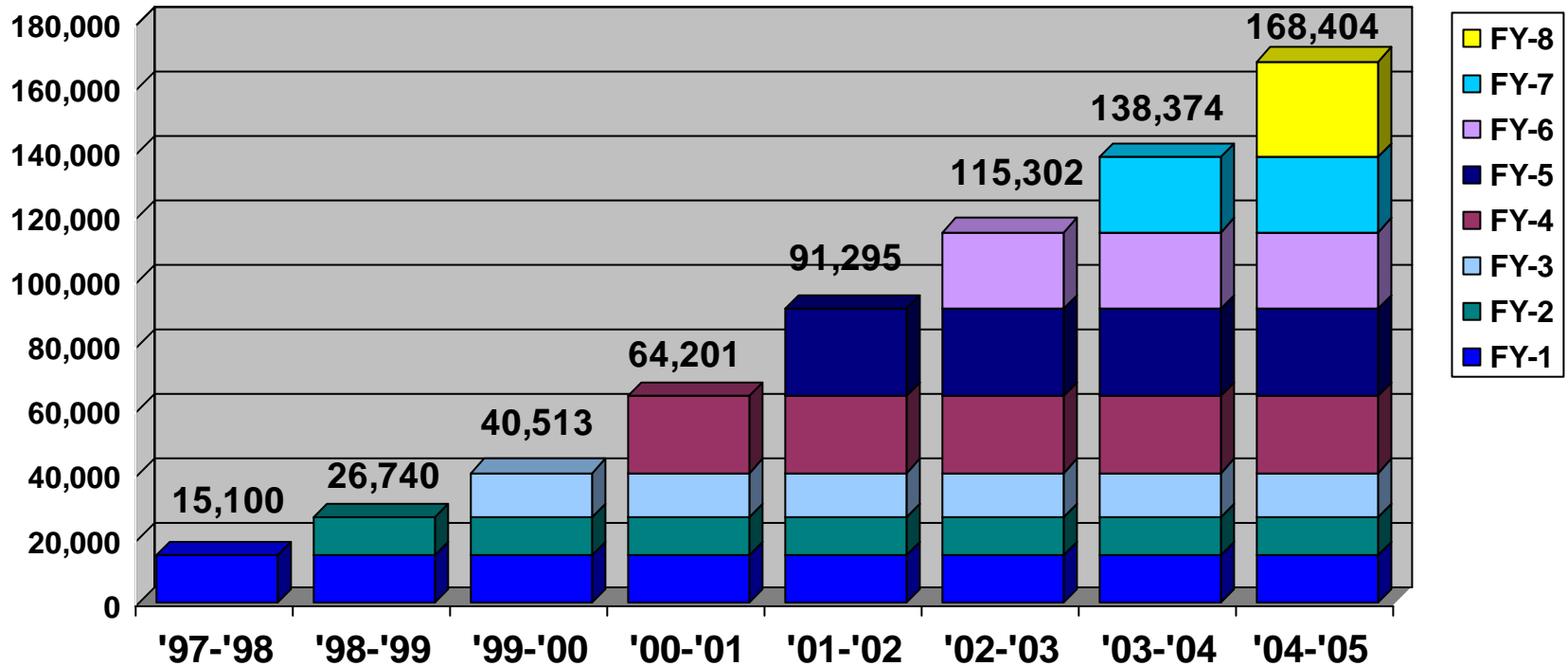
## Trade Ally Training Programs

- Seminars, trade shows, and presentations conducted to increase knowledge of energy efficiency practices.
- **1,000+** Trade Allies trained each year.





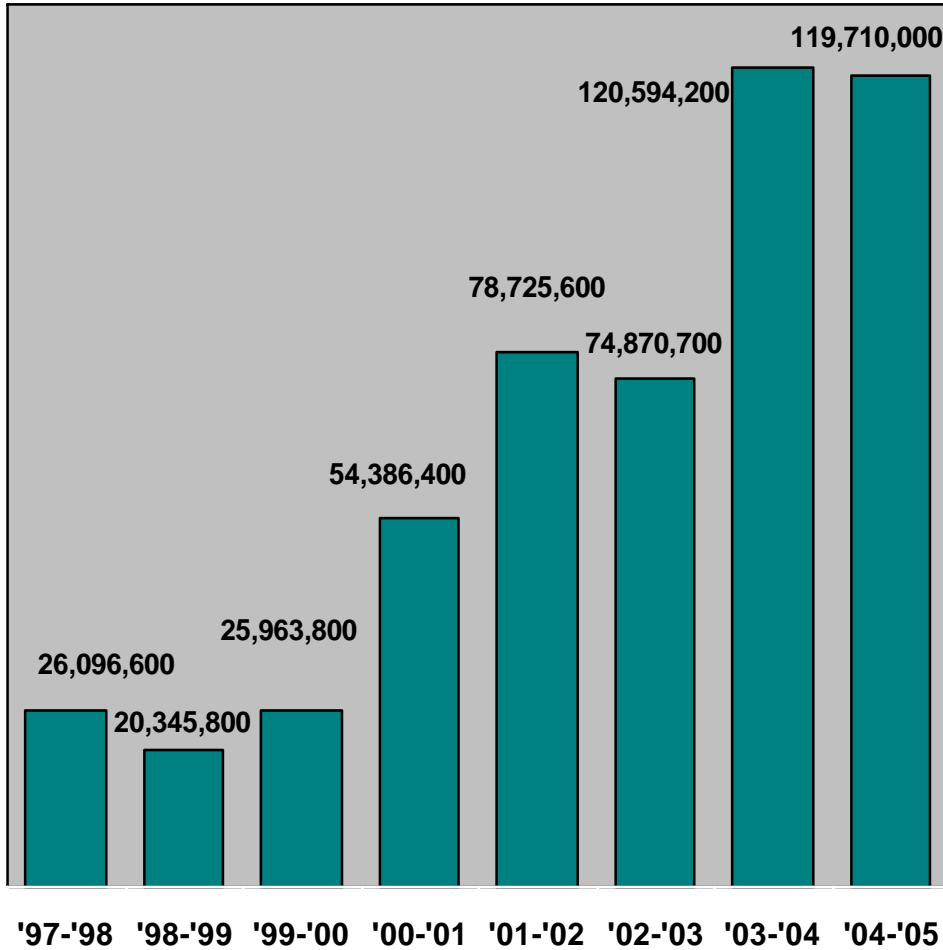
# Program Participants



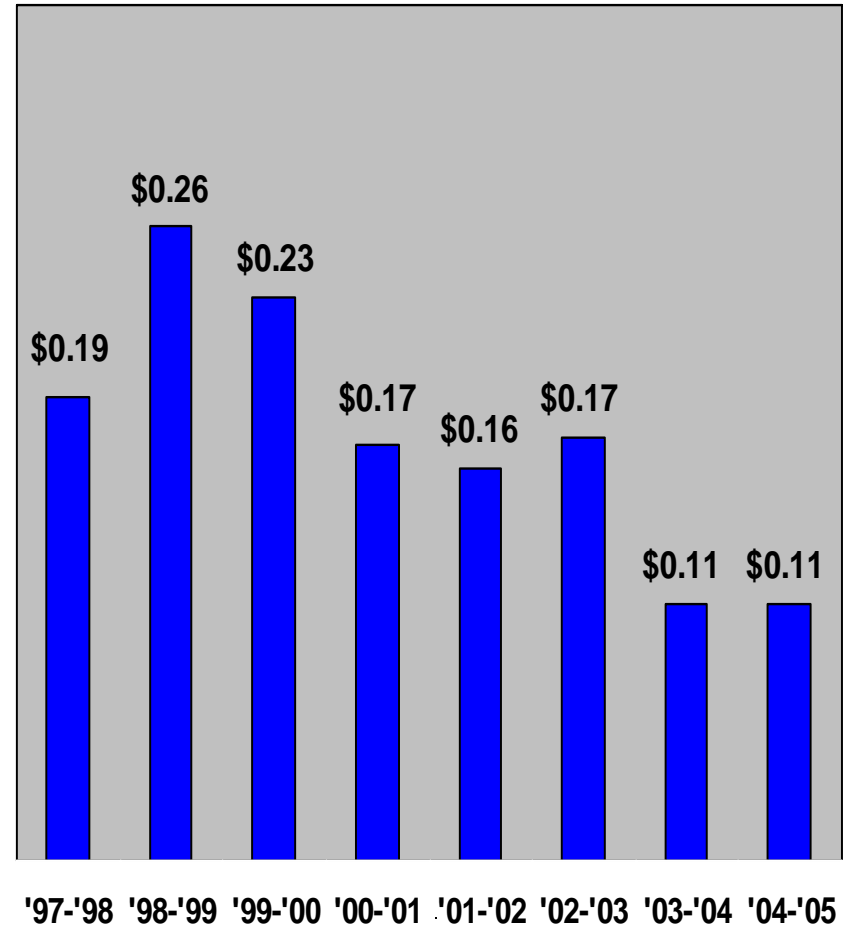
Program participant #'s include NH participants from '03

# Program Efficiencies

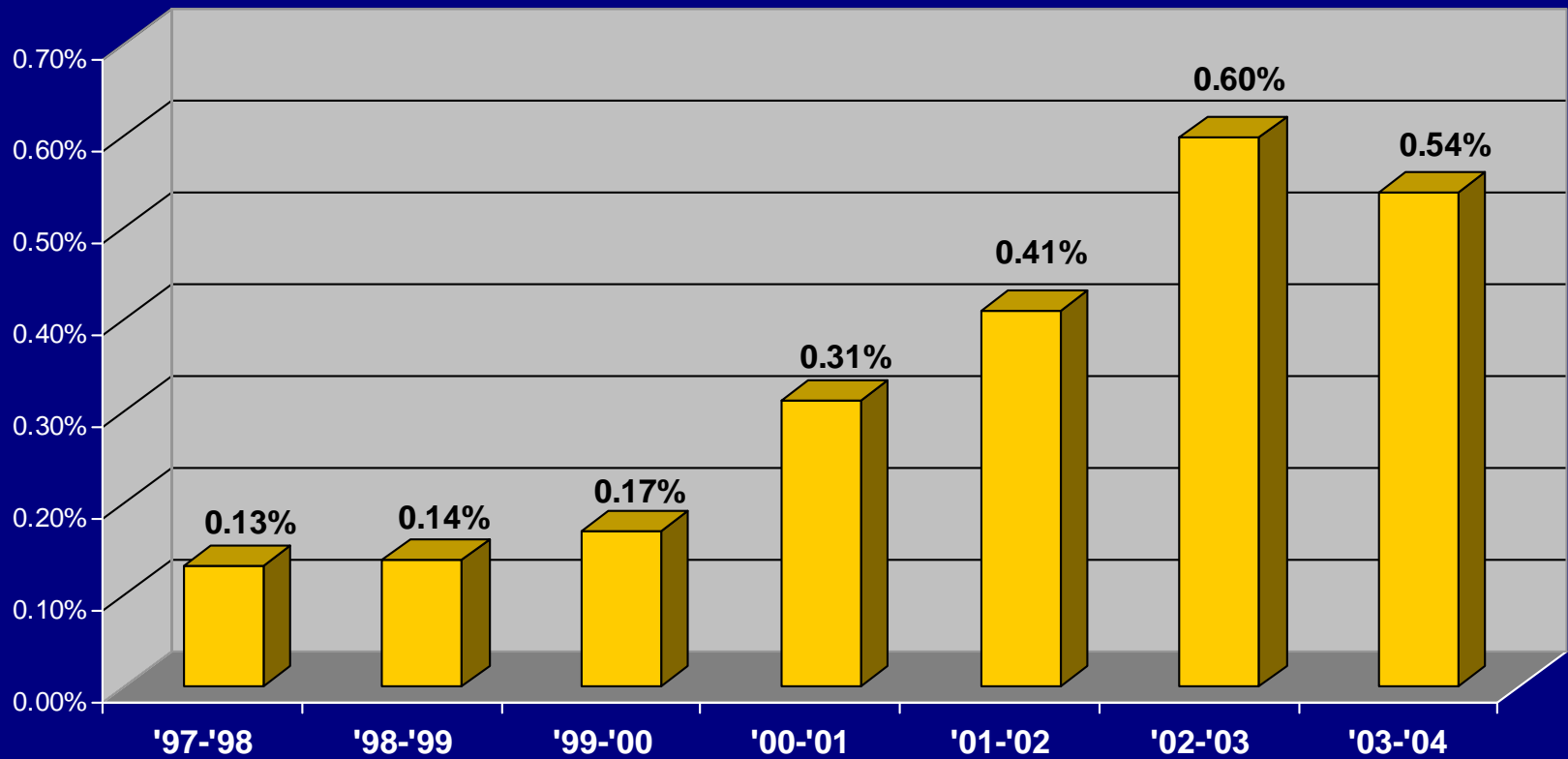
## Incremental Lifetime Therm Savings



## Cost Per Lifetime Therm Saved



# Program Savings as a % of Annual Gas Sales



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