

# Linking Energy Codes, Standards and Energy Efficiency Programs

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New Buildings Institute, Inc.  
[www.newbuildings.org](http://www.newbuildings.org)

A non-profit corporation helping  
to make buildings better for people and the environment

# New Buildings Institute

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- ◆ Formed in December 1997 as 501(c)3
- ◆ Offices in CA and NW
- ◆ Working with partners in:
  - California
  - Northwest
  - Northeast
  - Midwest
- ◆ Annual revenues of over \$2 million

# Sponsors

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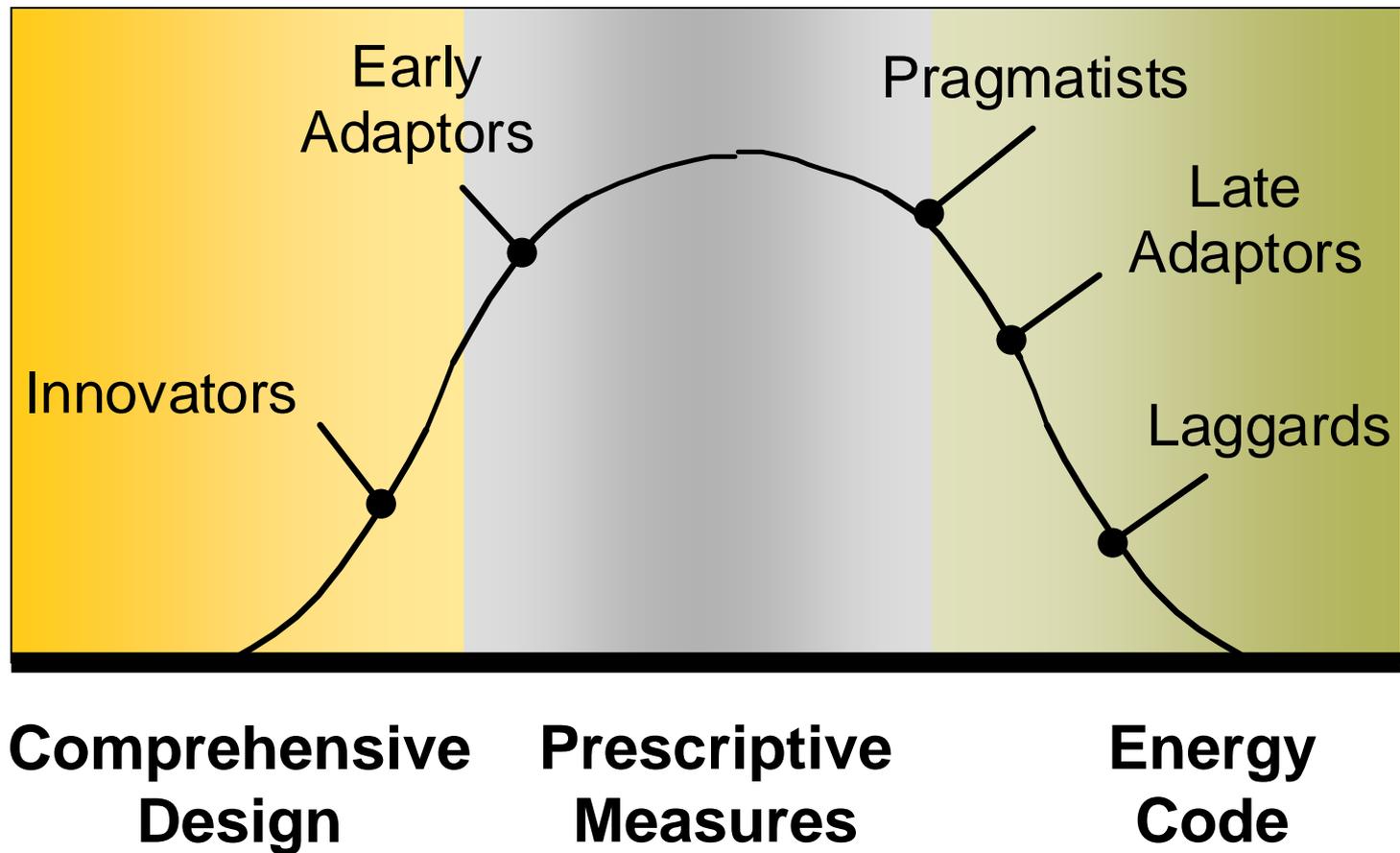
- Efficiency Vermont
- Energy Foundation
- Iowa Energy Center
- National Grid, USA
- New York State Energy Research and Development Authority
- Northwest Energy Efficiency Alliance
- Sacramento Municipal Utility District
- Southern California Edison

# Buildings

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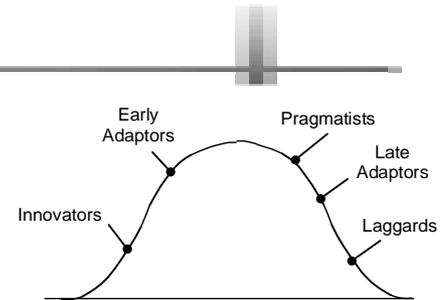
- ◆ Are where we spend 90% of our time being directly effected by the built environment and that buildings ...
  - Consume over 35% of total energy in US
  - Consume over 65% of the total electricity in the US
  - Incur energy costs of over \$228 billion per year
  - Contribute over 35% fo US carbon dioxide emissions
  - Constitute \$450 billion of US GDP

# New Building Policy Options

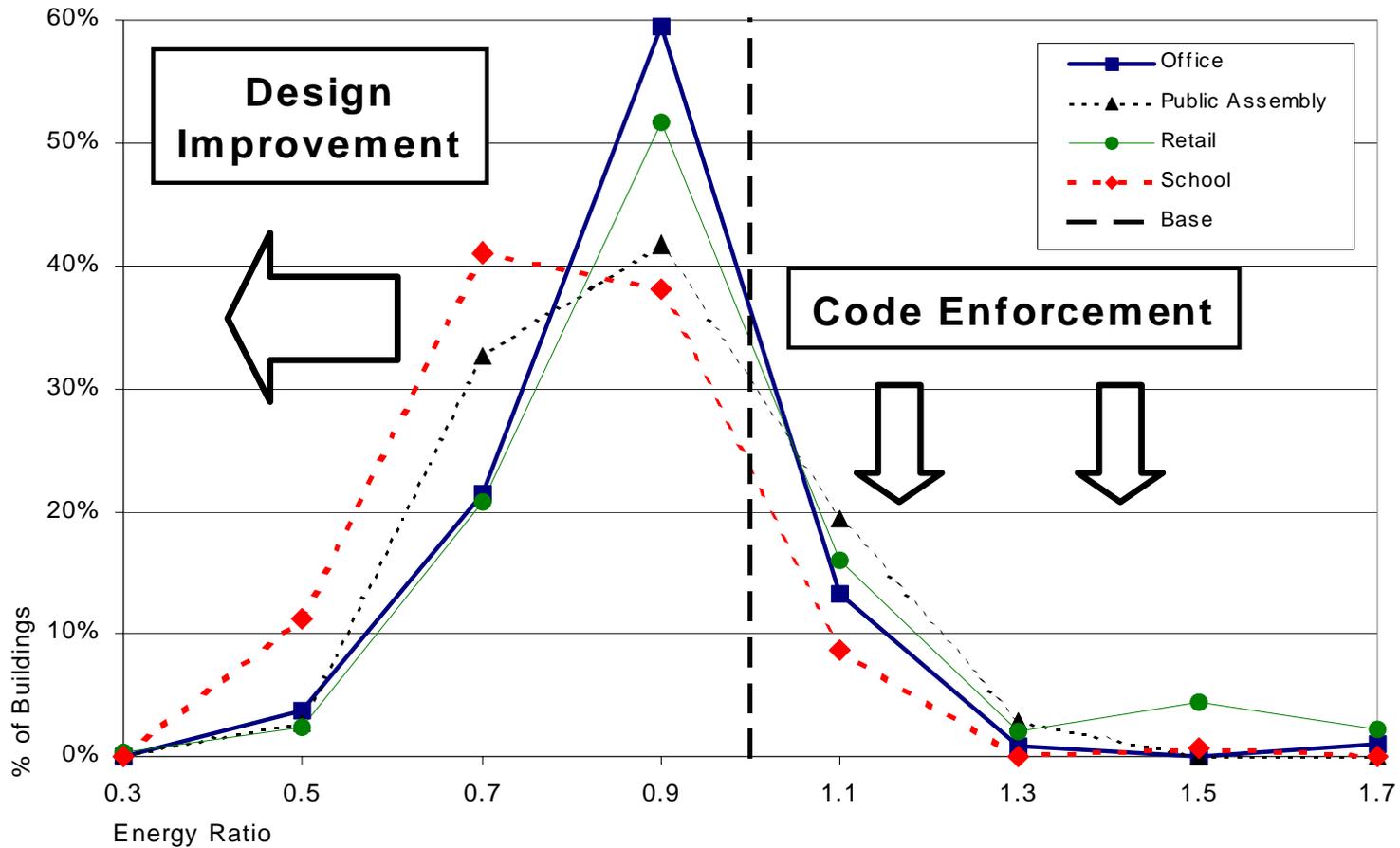


# Current CNC Programs

- ◆ Most are based on resource acquisition model
- ◆ While not designed as such, have helped move codes and standard practice
- ◆ Examples
  - Electronic ballasts and T-8 lamps
  - NFRC Window Ratings



# New Construction Study



# MT and New Construction

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- ◆ New construction practices can be transformed in two interrelated ways:
  - Changing baseline practices based on benefits of improved design
    - more difficult to do but in some cases only option available
  - Code upgrades
    - effective but can be politically difficult and not appropriate for all measures

# Effective Energy Codes

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- ◆ Promote all cost-effective measures that are common practice in market
- ◆ Are easy to use and understand
- ◆ Are well supported with tools, training and institutional backing
- ◆ Are enforceable within existing municipal code framework

# Basic Regulatory Support

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- ◆ Typically legislators and regulators require program administrators to:
  - Support state code upgrade process
  - Provide code training and technical assistance

# Enhanced Support

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- ◆ Energy code as eligibility threshold
- ◆ Training and technical assistance
- ◆ Active promotion of newly adopted codes
- ◆ Financial incentives for beyond-code measures
- ◆ Incent beyond effective date to build market compliance
- ◆ Include code compliance in evaluations
- ◆ Provide technical analysis on measures that have saturated market
- ◆ Participate in regulatory rulemakings as advocates for saturated measures

# Example - Retail Daylighting



- ◆ 100% daylight
  - 100-250 fc
  - less energy use
  - Higher sales



- ◆ Strip fluorescent
  - T8 - electronic
  - 40-85 fc typical

Photo's courtesy of Heschong-Mahone Group

Shoppers don't notice the skylights...

But they think the store is "cleaner" "more spacious"

# Case Study - PG&E Codes and Standards



- ◆ Codes and Standards (CASE) Initiatives
  - Identify measures
- ◆ Draft of CASE Studies
- ◆ Research to fill CASE Gaps
  - Based on comments on draft studies
- ◆ Workshops
  - Public feedback
- ◆ Final Initiatives
  - Choose which to pursue in code upgrade forum

# AB 970



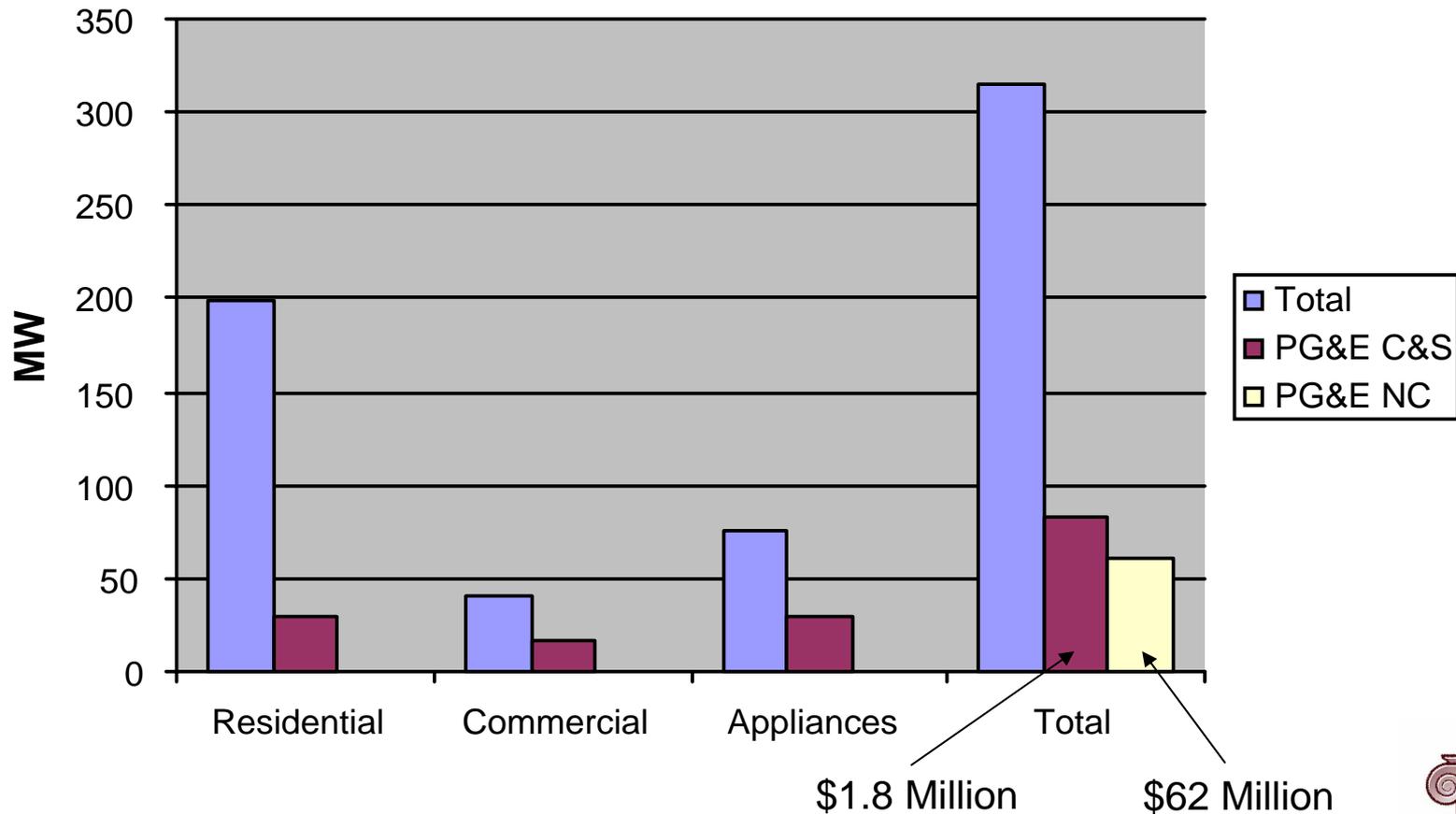
## ◆ Enacted on September 6, 2000

Public Resources Code 25553. Notwithstanding any other provision of law, on or before 120 days after the effective date of this section or on the earliest feasible date thereafter, the commission shall take the following action:

(b) Adopt and implement updated and cost-effective standards pursuant to Section 25402 to ensure the maximum feasible reductions in wasteful, uneconomic, inefficient or unnecessary consumption of electricity.

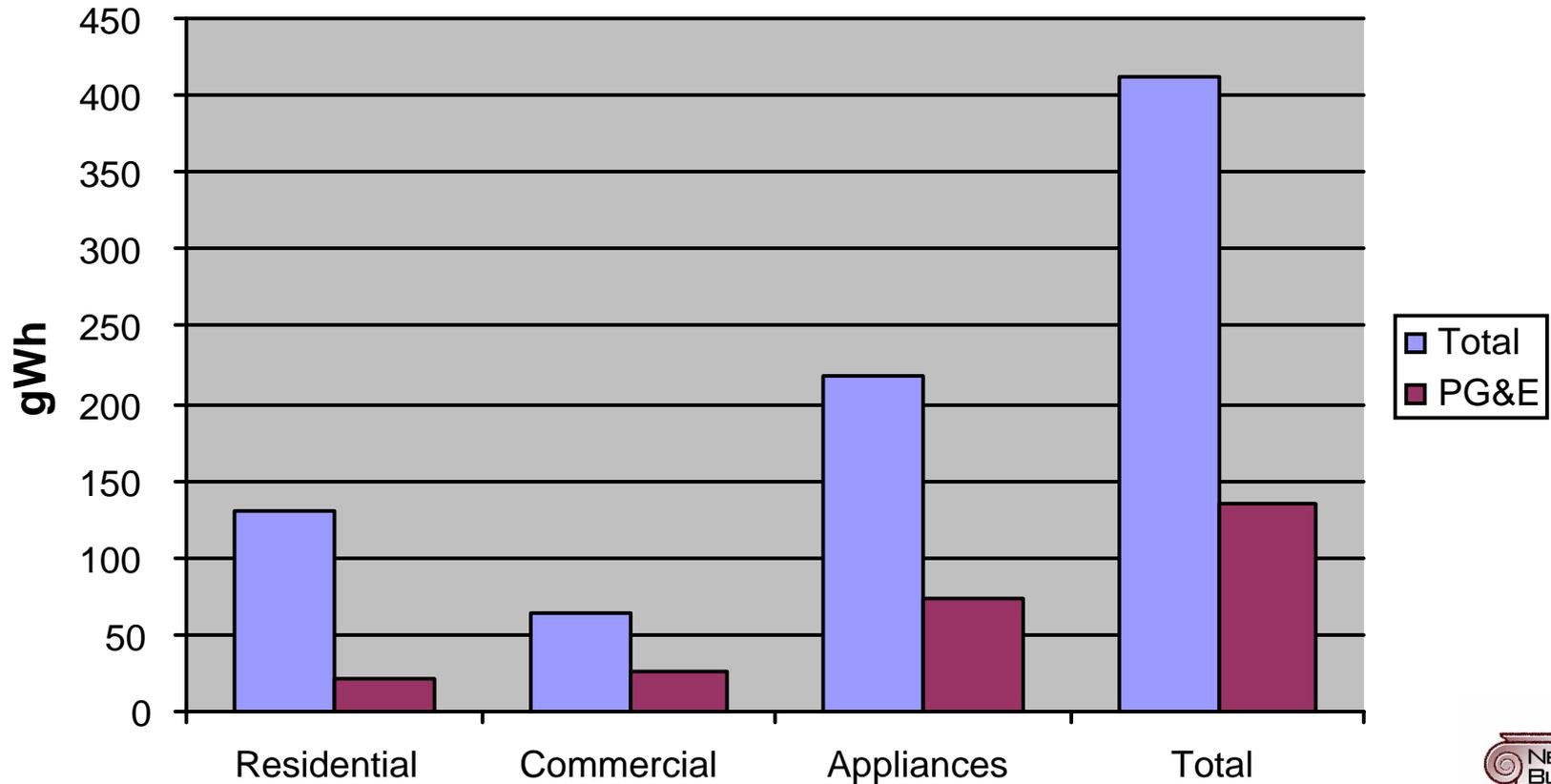
# Demand Savings Impacts

MW Savings



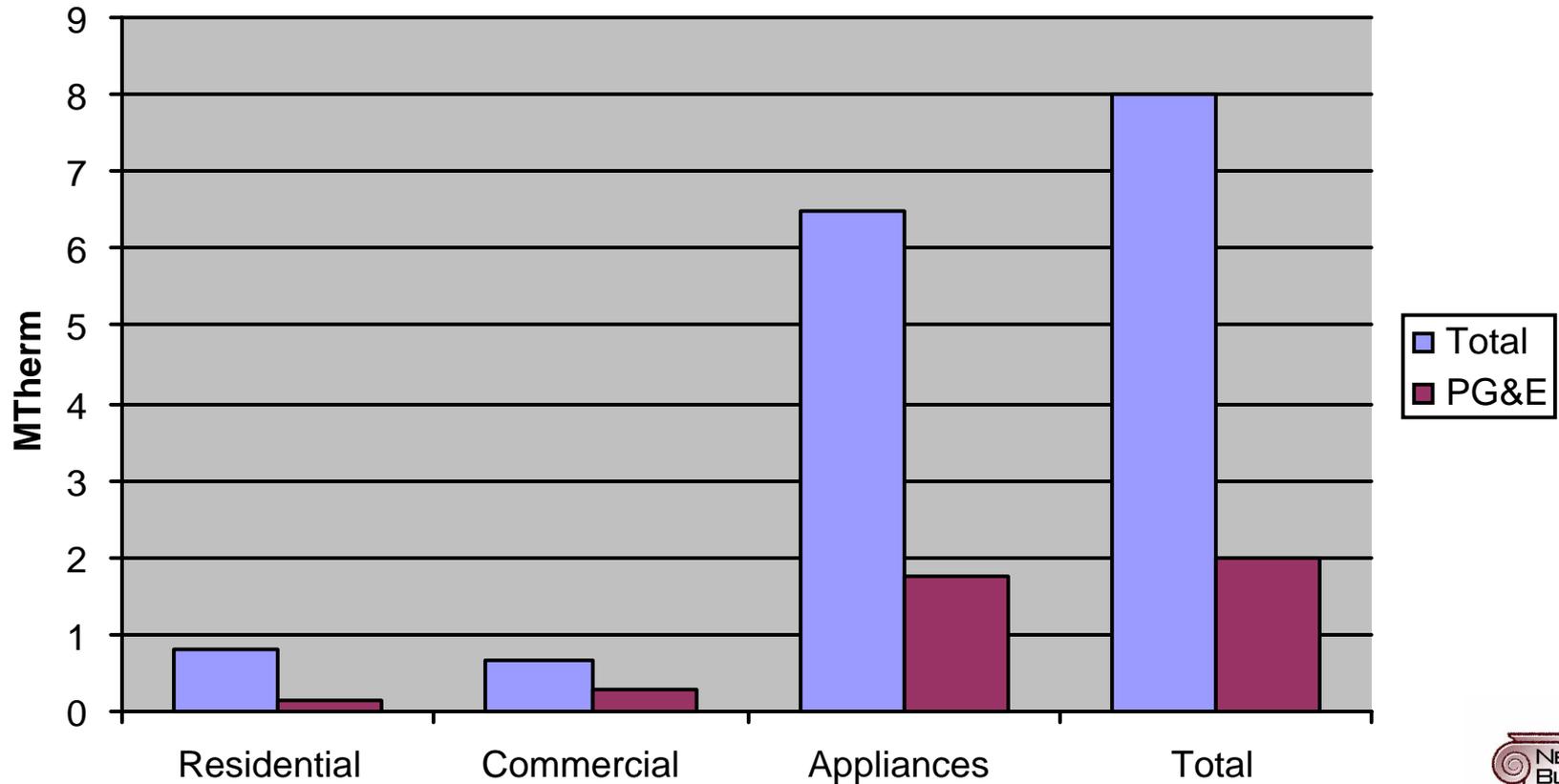
# Electricity Savings Impacts

gWh Savings

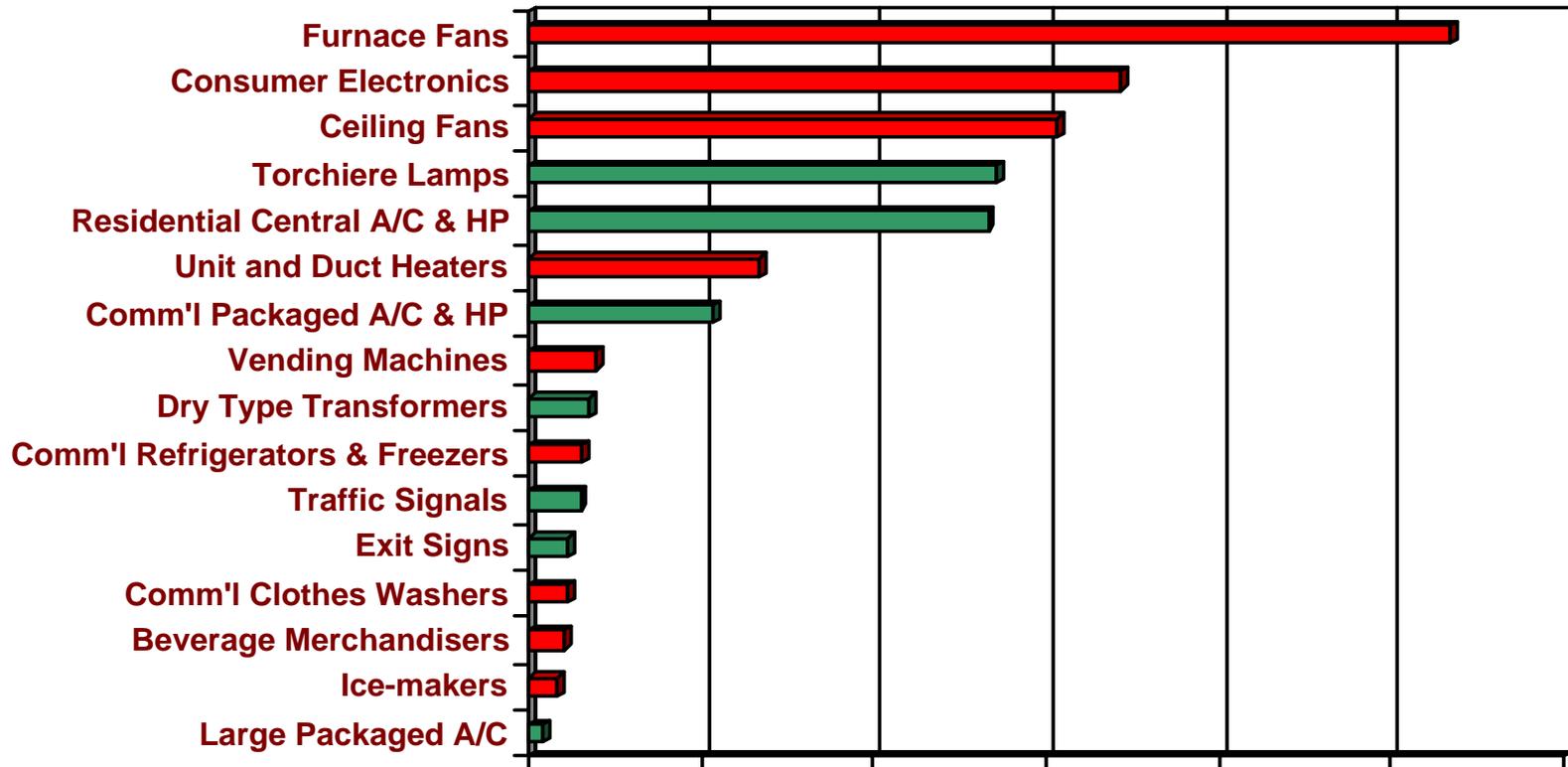


# Gas Savings Impacts

MTherm Savings



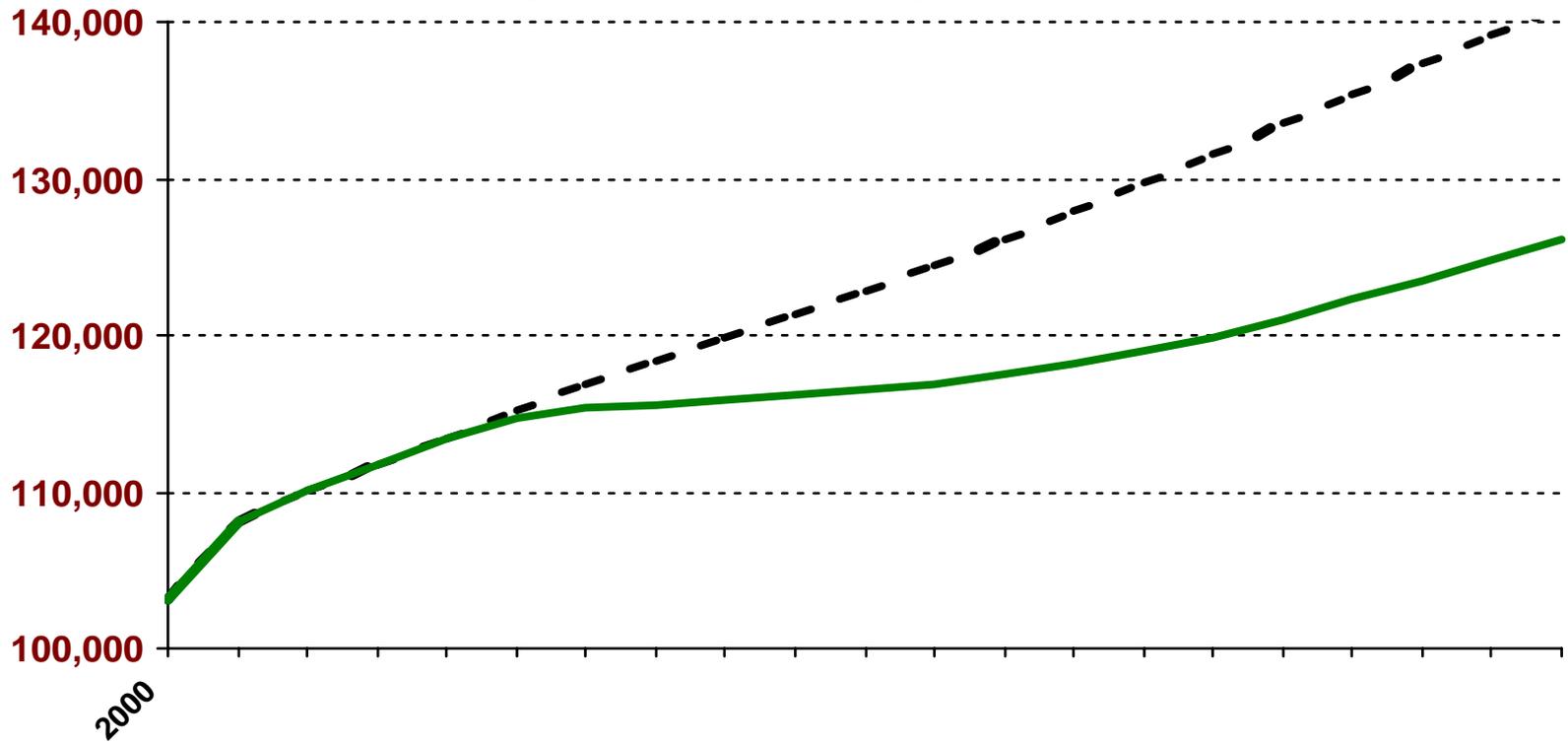
# Northeast Standards Potentials



TBtu's in 2020

# Demand Impacts

**Projected Regional Electric Demand With and Without New/Updated Efficiency Standards**



# Establish Regulatory Framework

- ◆ Reward administrators to engage in effective code activities
- ◆ Encourage state agencies to coordinate with administrators

