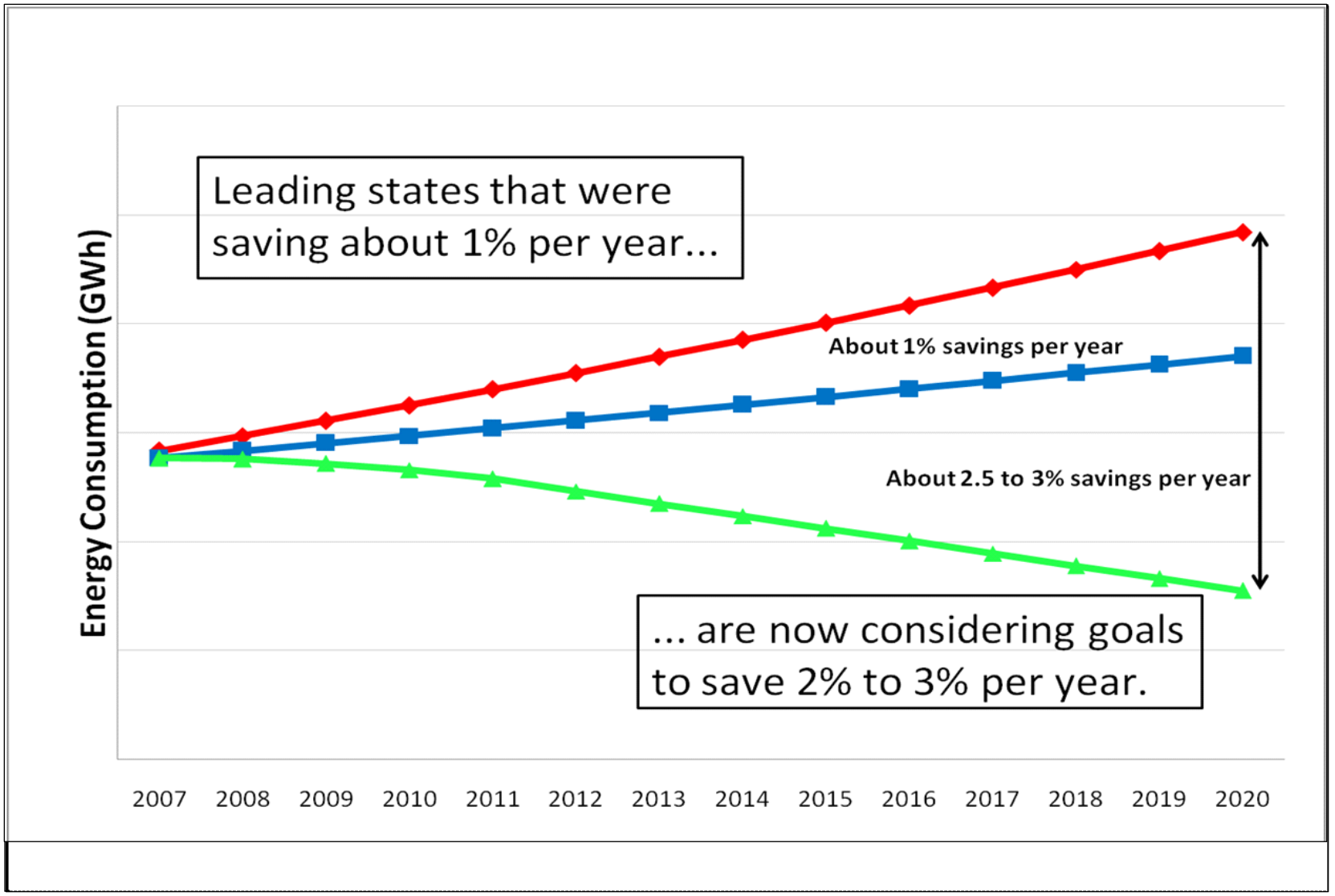
# The Context for Energy Efficiency Savings: Savings Levels Necessary to Achieve MA Policy Goals and Meet Legislative Requirements

Council Consultants

MA EE Advisory Council Meeting
March 10, 2009

# Interest in Energy Efficiency Increasing



# Outline of Presentation

- Savings are expressed many ways
- Context for higher energy savings
  - MA energy policy objectives, more savings
  - Programs – deeper and broader, integrated
  - GCA and other legislative requirements
- Analysis of electric energy savings
  - Annual and cumulative annual savings
- Consultant recommendations for electric
- Gas analysis forthcoming

# Savings Are Expressed in Many Ways

- Annual energy savings (% savings)
- Cumulative annual savings
- Lifetime savings (savings over life of measure)
- Double or triple current savings
- Savings as a percent of retail sales
- Savings as a percent of total resources
- Increase energy efficiency to X% by Y Year (e.g., 20% by 2020)
- Zero load growth or reduce load growth by Z%

# Savings from EE Programs in the Future

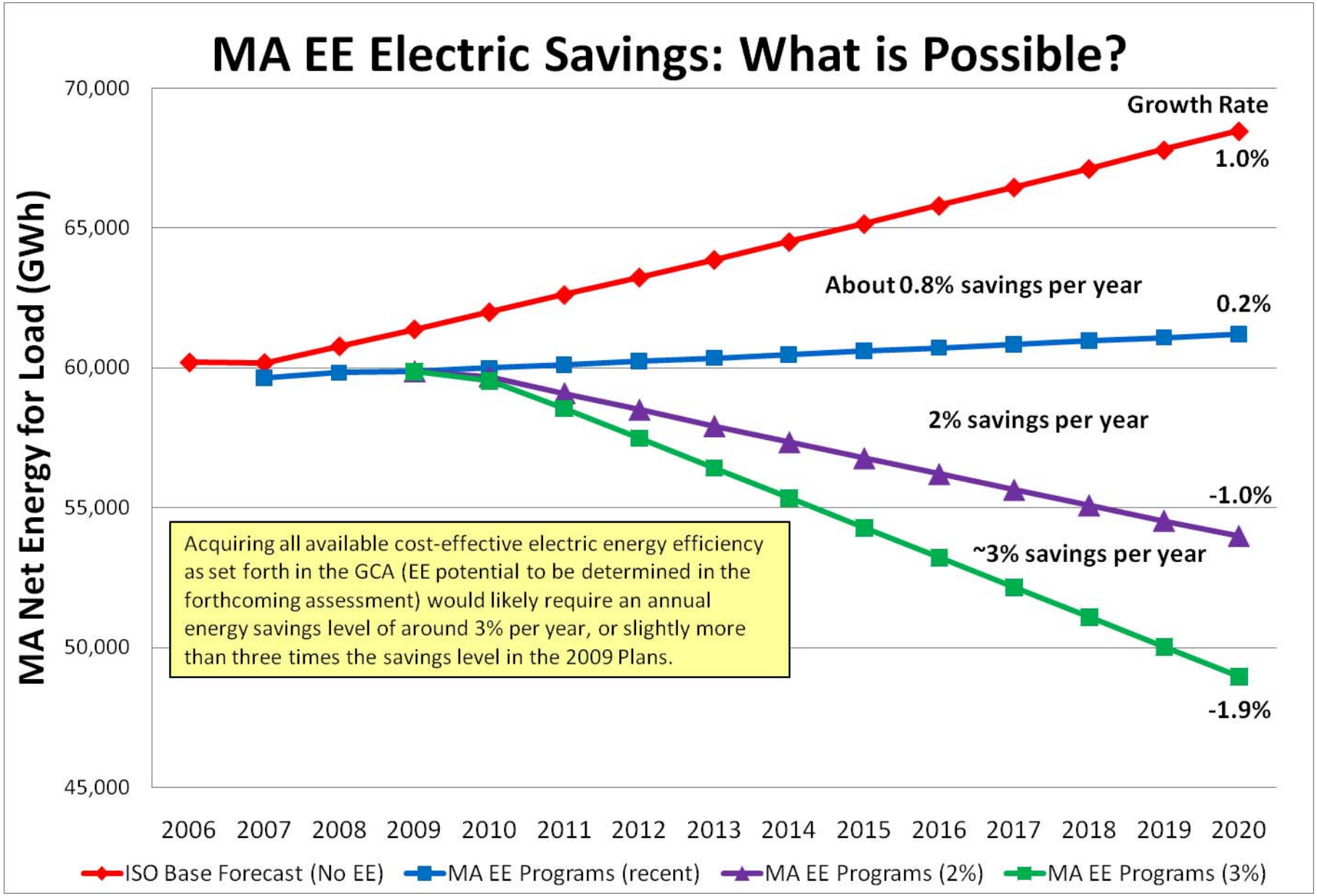
- Deeper and broader
- Deeper: savings of 25-70% in customer facilities, instead of 5-20% (as in many current programs)
- Broader: higher savings by reaching more customers
- Integrated delivery of electric and gas programs
- Integrated EE and CHP, and fully coordinated delivery of renewables
- EE programs will be one policy strategy, coordinated with building energy codes, appliance standards, and other policies (carbon, air regulations)

# Requirements of the Green Communities Act

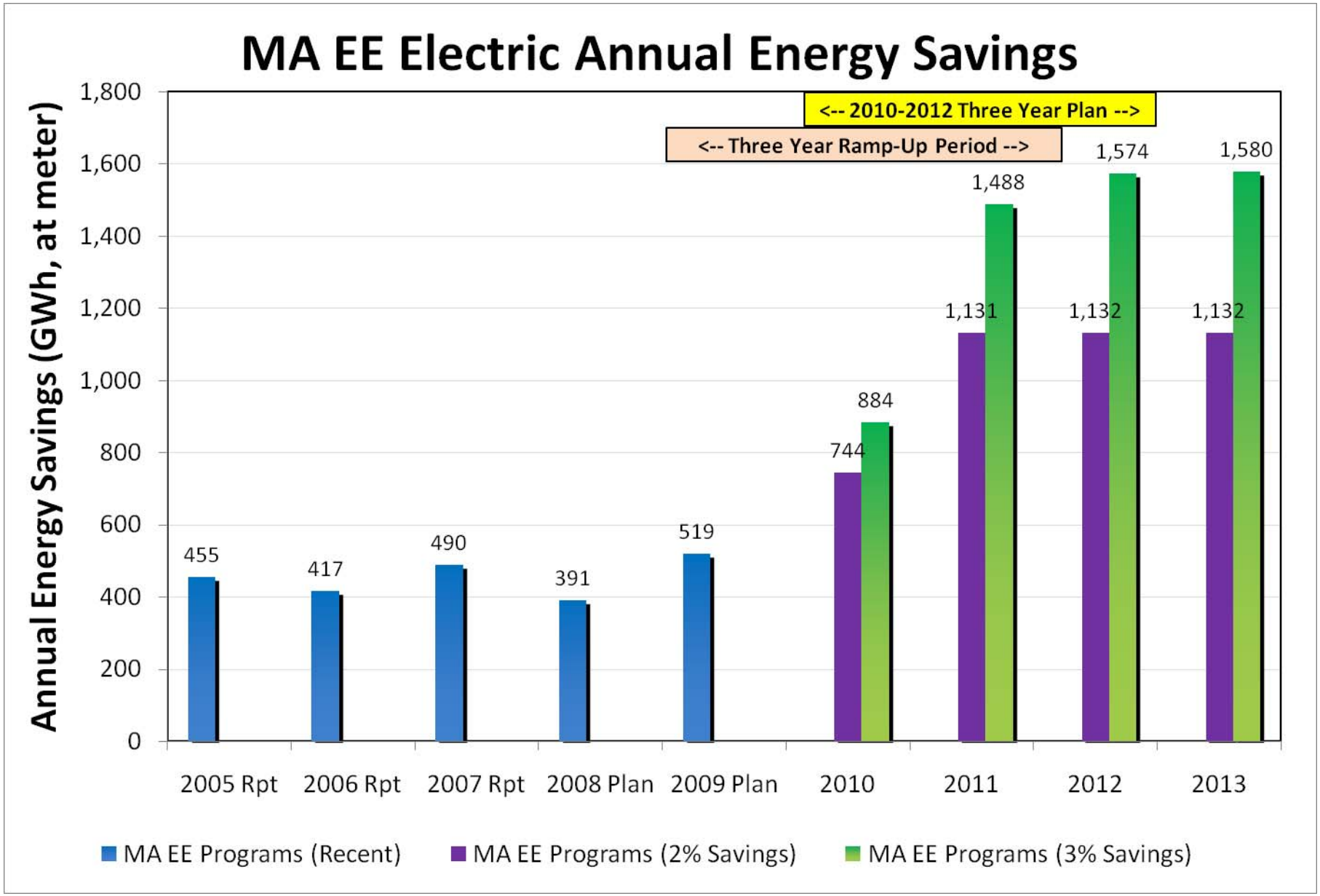
- Electric and natural gas resource needs shall first be met through all available energy efficiency and demand reduction resources that are cost effective or less expensive than supply. [Section 21 (a)]
- Each plan shall provide for the acquisition of all available energy efficiency and demand reduction resources that are cost effective or less expensive than supply. [Section 21 (b)(1)]
- Green Communities Act (GCA)

  Chapter 169 of the Acts of 2008

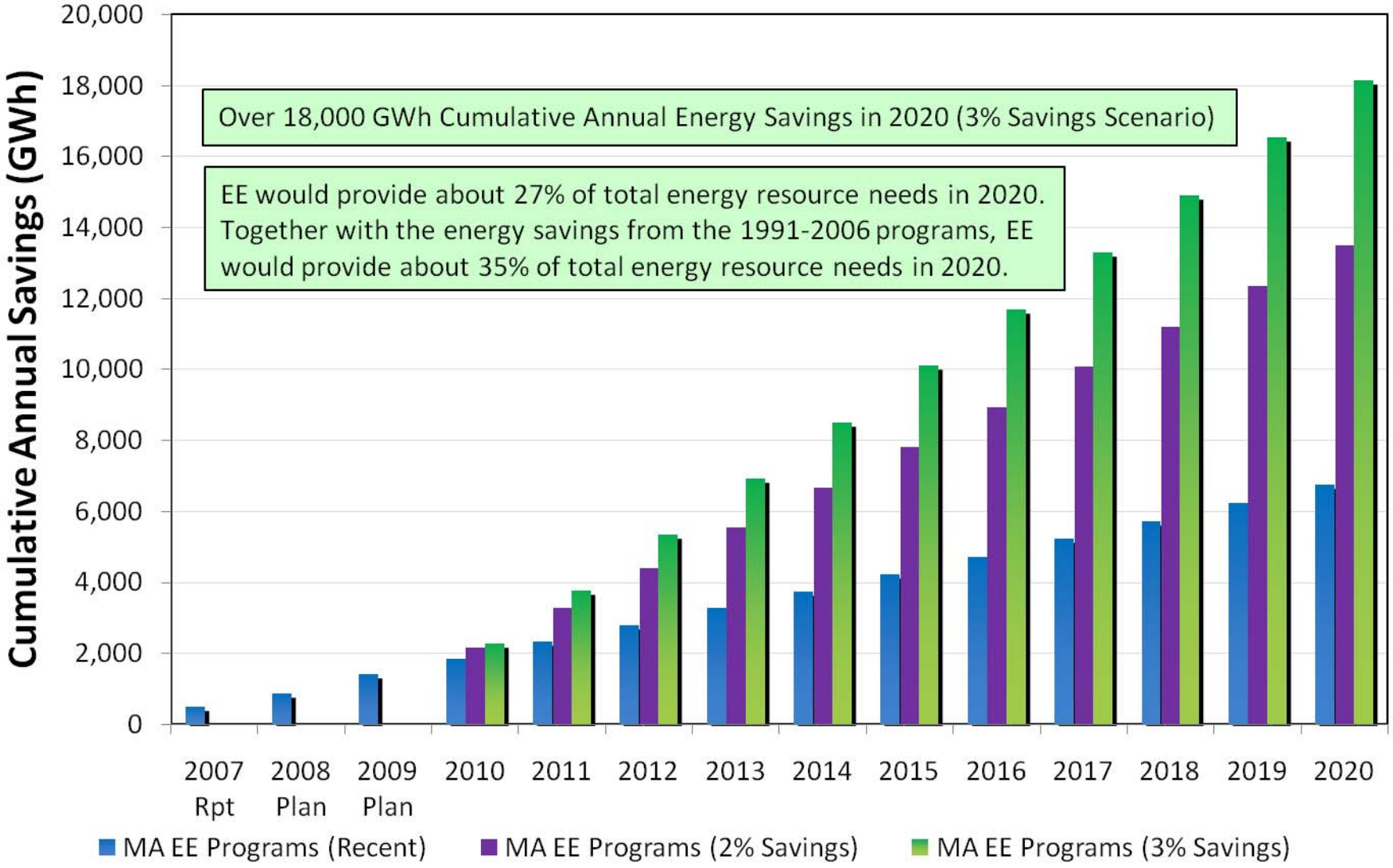
# MA EE Electric Savings: What is Possible?



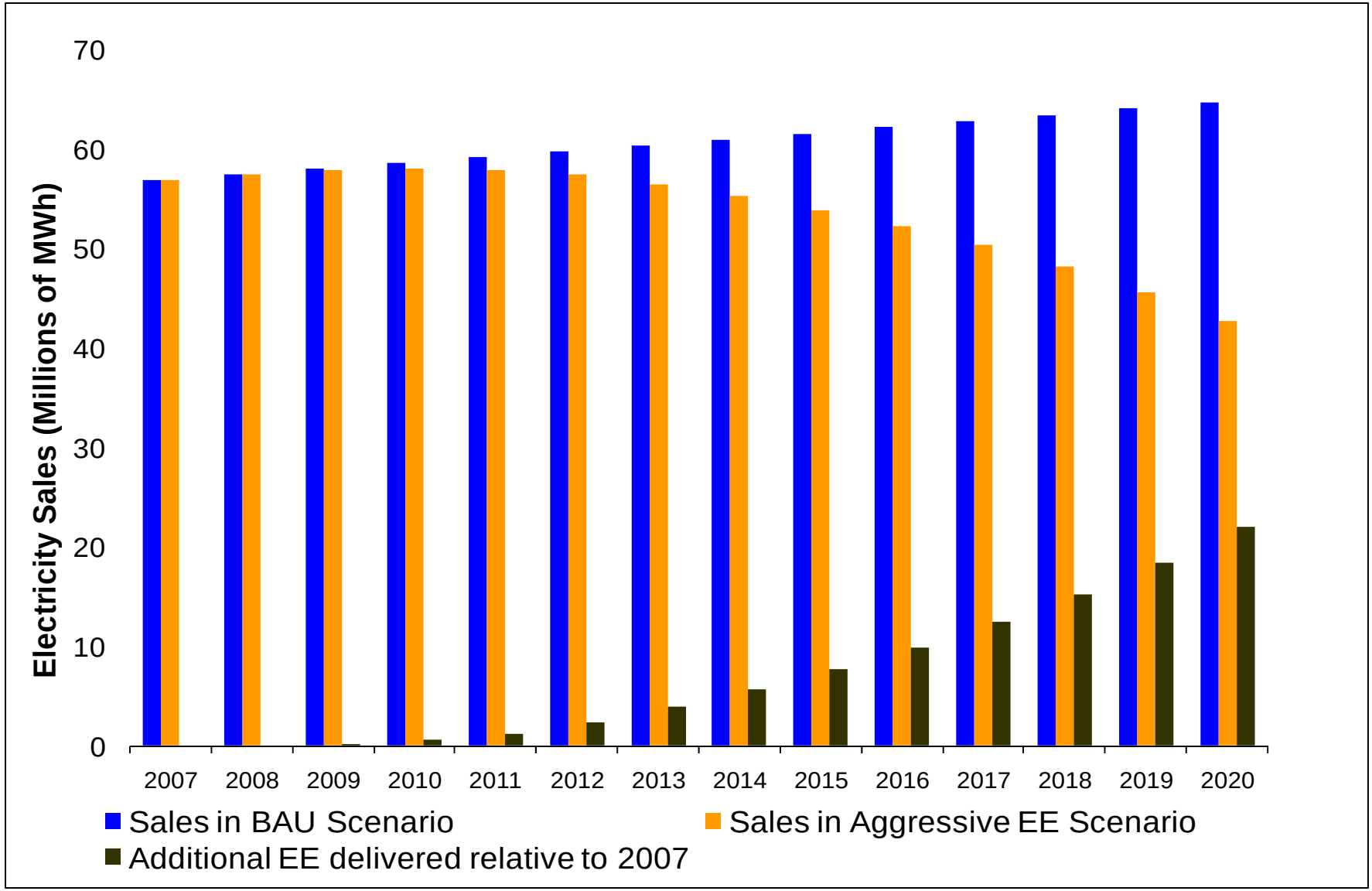

Note: Base forecast is ISO-NE CELT. In the past, actual growth rates and load have been higher than recent CELT forecasts.


MA EE Electric Annual Energy Savings
Annual Energy Savings (GWh, at meter)
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
<-- 2010-2012 Three Year Plan -->
<-- Three Year Ramp-Up Period -->
455
417
490
391
519
744
884
1,131
1,488
1,132
1,574
1,132
1,580
2005 Rpt
2006 Rpt
2007 Rpt
2008 Plan
2009 Plan
2010
2011
2012
2013
MA EE Programs (Recent)
MA EE Programs (2% Savings)
MA EE Programs (3% Savings)

# MA EE Electric Cumulative Annual Savings

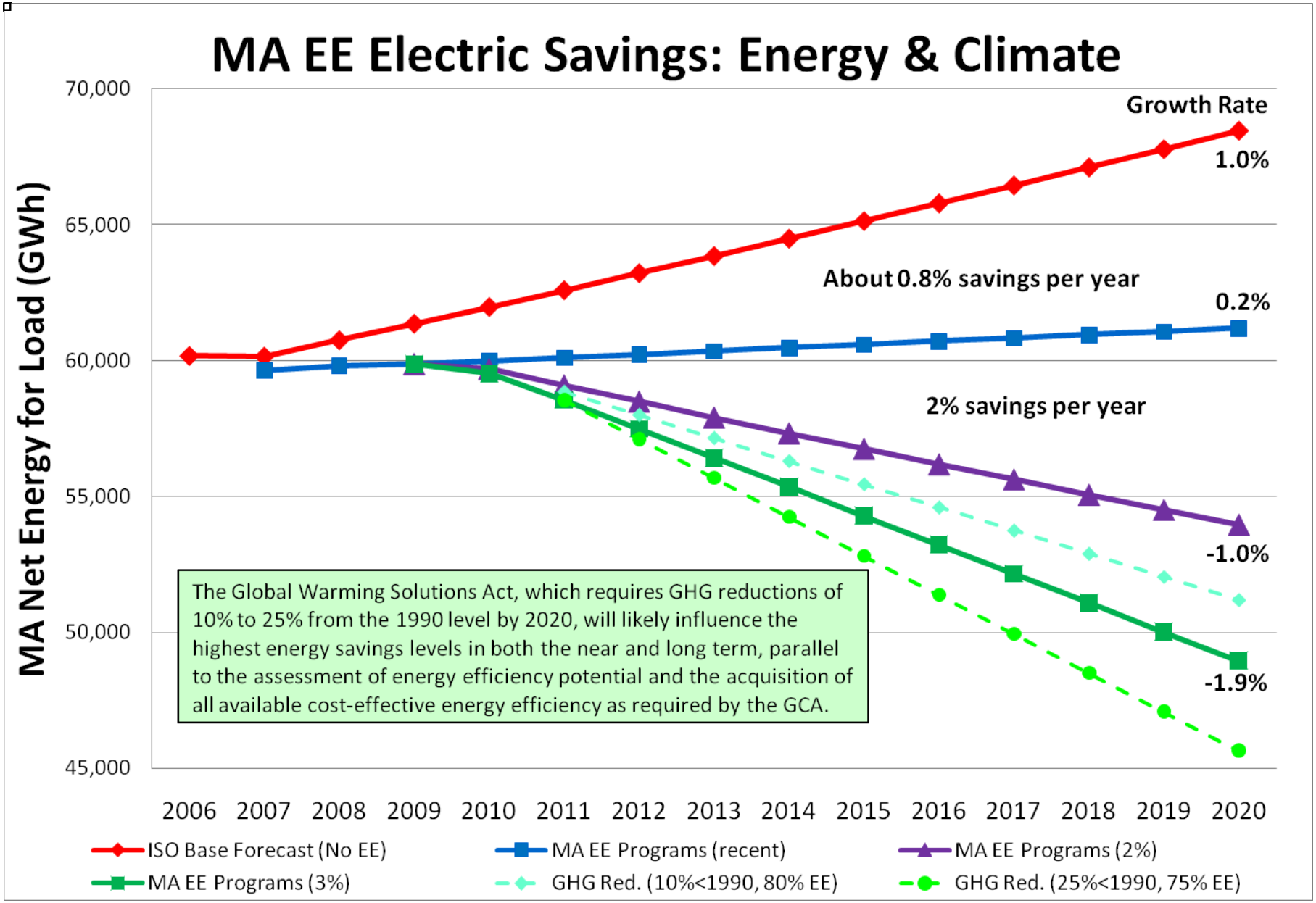


# Impact of EE on Retail Electricity Sales




Analysis by DOER, 2009

# MA EE Electric Savings: Energy & Climate



# Documentation of Higher Savings

- Recent EE electric potential studies have found cost-effective achievable potential in the range of 20-30% (CT forthcoming, MD, VA, NYPA; NEEP 2004/2005)
- Studies generally did not include CHP
- Potential studies are generally biased low; e.g., second studies of potential during the same period or analysis window always find additional potential
- Utilities in other states have developed plans to increase energy savings and net benefits significantly (CT 2009 IRP, 20% savings, $3.7B net benefits)
- VT 2008 savings over 2%; over 4% in geo-targeted

# Consultant Recommendations: Electric Savings

- Aim initially to at least triple the current savings levels; annual energy savings of 3%
- Better to aim high than to underestimate/delay
- Early ramp up to higher savings is crucial
- Deeper savings first, then broader reach
- PAs develop initial savings goals for portfolio, sector, and major market segment by March 20
- Also develop initial estimates of costs, benefits,

# Gas Savings Analysis

- Consultants have received gas plans and data
- Reviewing savings achieved and planned
- Also reviewing gas potential studies/literature
- Consultants will develop parallel presentation for gas energy savings, similar to the electric savings analysis, by March 17
- Gas savings levels likely to be slightly lower
- Gas PAs should develop initial savings goals, costs, benefits, and net benefits by March 24