Energy Efficiency:
Economic and Regulatory Drivers

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Energy Efficiency & Demand Response Panel

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ENE – About Us

- Environmental Policy, Research, and Advocacy
  - Non-profit NGO
  - Rockport, ME / Portland, ME / Boston, MA / Providence, RI / Hartford, CT / Charlottetown, PEI, Canada
  - Foundation funded
- Program Areas
  - Climate Solutions
  - Energy
  - Transportation
  - Forest and Land Use

U.S. is Facing three Severe Crises Today

- Jobs
  - National Unemployment Rate: 9.7%
  - U.S. Total Jobs lost over 13 months: 3,600,000
- Economy
  - U.S. Consumer Credit Card Debt: $858,100,000,000
  - Lack of investment, drop 2008 to 2009: 31%
- Climate
  - Hottest March on Record (since 1880): March 2010
  - Hottest Decade on Record (since 1880): 2000-2009

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Efficiency Investments Address All 3 Crises Simultaneously

- Investments in Efficiency Programs are Proven to:
  - Spur Job Growth
  - Improve the Soundness of the Economy
  - And Reduce GHG emission
- ….and yet….
- We Continue to Massively Under – Invest in Efficiency
  - EE Program Investment of only roughly $4 billion per year, with a 3-4x opportunity left on the table
  - Economic Imperative to Correct this Imbalance
- Several Policy Tools Hold the Potential to Correct this….
  - State
  - Regional
  - Federal

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Economy-Wide Economic Benefits

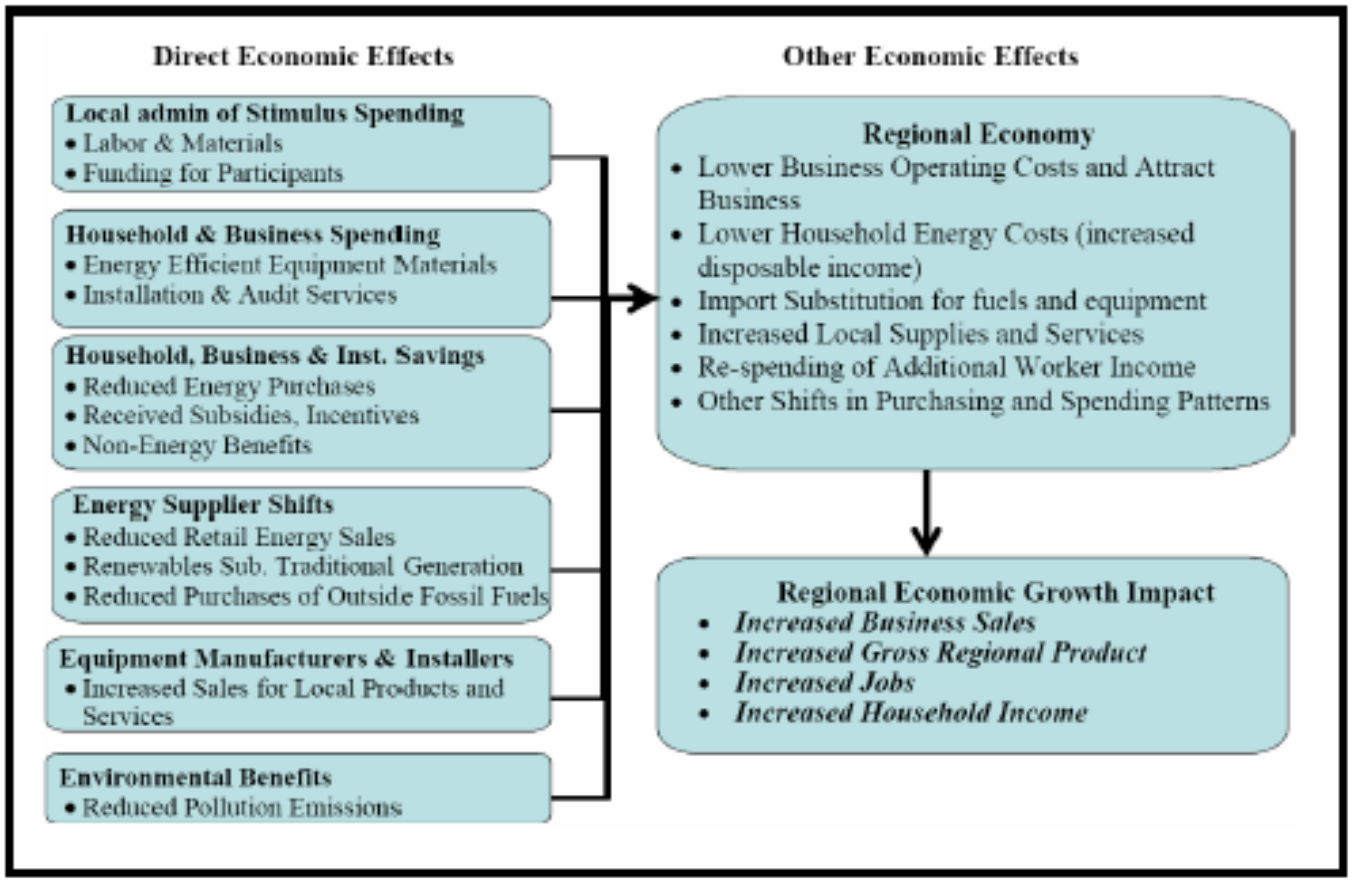
Energy Efficiency: Engine of Economic Growth

- ENE study of macroeconomic impacts of EE
  - Using the Regional Economic Models, Inc (REMI) – multi-state *Policy Insight* forecasting tool used for RGGI
  - Conservatively modeled all cost-effective EE investment
  - New England States
- Impacts on:
  - Energy costs
  - Emissions
  - Gross State Product (GSP)
  - Employment

Efficiency Investments - Drive Job Growth, Help Consumers, and Raises GDP

- Energy savings, lead to increased spending in local economy

Figure 10: REMI Model Capabilities to Capture Energy Program Elements in the Regional Economy



Source: EDR Group, Inc.

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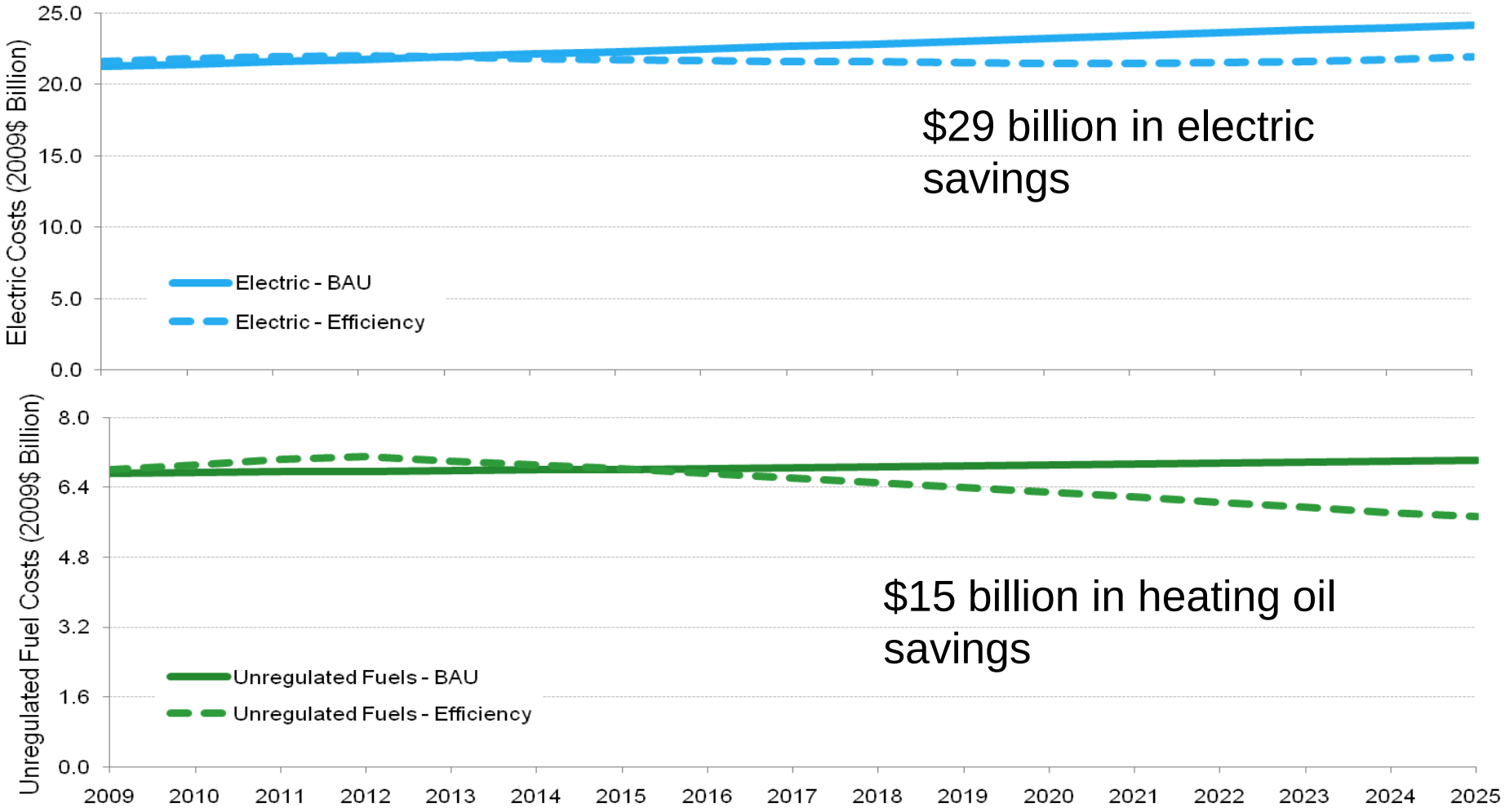
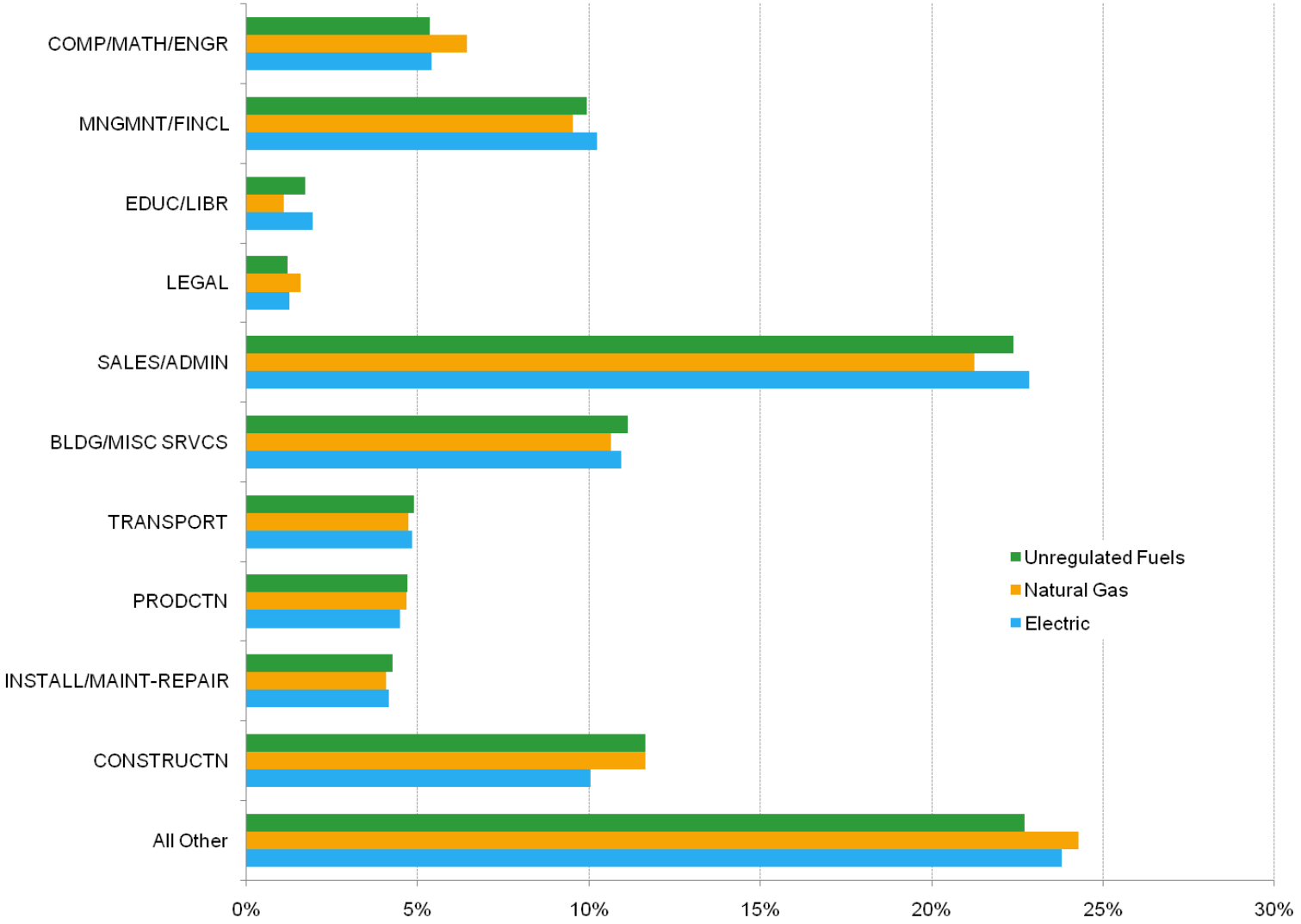
Results - $44 Billion in Energy Cost Savings



Dollars of GSP per $1 in Program Investments

	Electric		Natural Gas		Unregulated Fuels	
	Individual	Simultaneous	Individual	Simultaneous	Individual	Simultaneous
Connecticut	5.6	5.7	6.3	7.0	6.3	7.1
Massachusetts	5.5	6.4	6.7	7.5	8.0	10.9
Maine	4.3	4.9	8.4	12.4	6.6	7.0
New Hampshire	3.9	5.9	6.7	10.8	6.2	8.5
Rhode Island	4.0	5.4	4.4	5.7	6.2	7.6
Vermont	3.7	4.3	4.5	6.5	6.6	7.4
Six State Region	5.1*	5.9	6.4*	7.4	6.9*	8.5

Economy-Wide Job Impacts



26,000 more jobs in 2016

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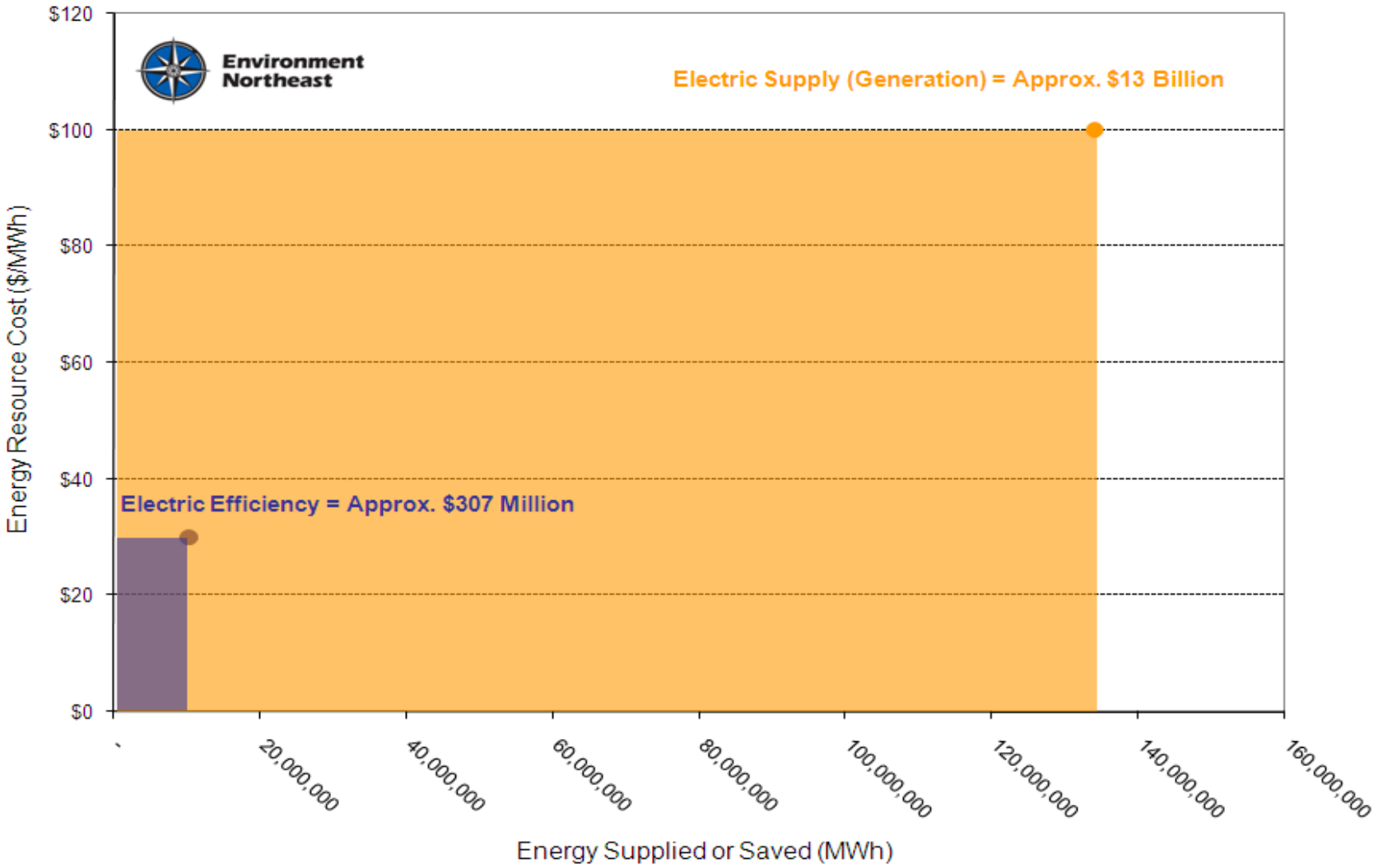
But Current Practice is to Massively Under-Invest in Efficiency: *How do We Achieve All-Cost Effective EE?*



Procurement Policies, Incentives, and Carbon $

- Factors Driving Increased Efficiency Investments:
  - Consumers and States Facing Soaring Energy Costs
    - In Massachusetts 3.5¢ per lifetime kWh saved vs. 10¢ supply
  - Climate Change: State Greenhouse Gas (GHG) Reduction Commitments
    - Efficiency and Demand Side Resources Offer Lowest Cost and Large Short – Medium Term GHG Reductions
- Policy Reforms
  - State Procurement Mandate: Purchase All Cost-effective EE First (MA, CT, RI, ME)
  - Decoupling and Performance Incentives
  - Carbon $: Regional Greenhouse Gas Initiative (RGGI) and Regional Capacity Market
  - State/Regional Efficiency Link to Federal Climate Legislation

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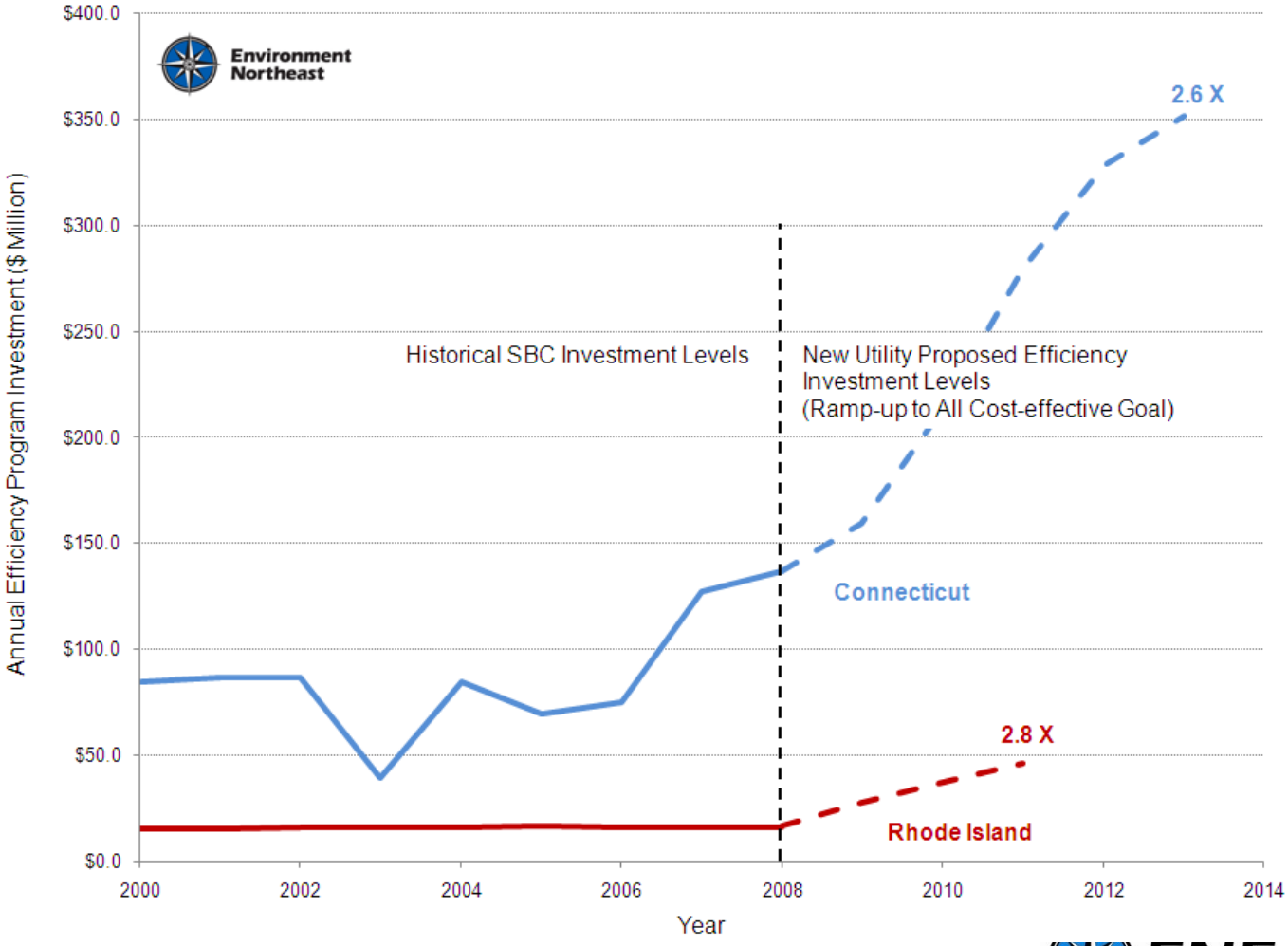
State Efficiency Procurement Mandate: Impacts on Investment Levels

- *CT, RI 2009 Budget Up ~50% over 2008*
- *Ramp Up Levels Supported by Business and other Stakeholders*
- *Meet All C/E Mandate*
- ***Equivalent of a 9-10 mil SBC rate***



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State Efficiency Procurement Mandate: Massachusetts

- January 29th MA Dept. of Public Utilities approved aggressive 3-year plan
- Build on "all cost-effective" requirement in Green Communities Act
  - 4x Electric Ramp up from $125 million → nearly $600 million in electric efficiency investment, for 2.4% annual savings
  - 4x Gas Ramp up from ~$30 million → to $140 million in natural gas funding for 1.15% annual natural gas savings
- Break away from SBC model to all cost-effective procurement means over $6 billion in consumer savings
- New Stakeholder Council with input and oversight

Carbon Markets Yield EE Investments:
Regional Greenhouse Gas Initiative (RGGI)

- First mandatory carbon cap and trade program in US
- 10 states: CT, DE, MA, ME, MD, NH, NJ, NY, RI, VT
- Electric power only: emitting units over 25 MWs
- 90% of allowances auctioned
- Third auction: March 18th
- First compliance period: 2009-2011
- **Over 1/2 of the auction proceeds invested in EE Programs**

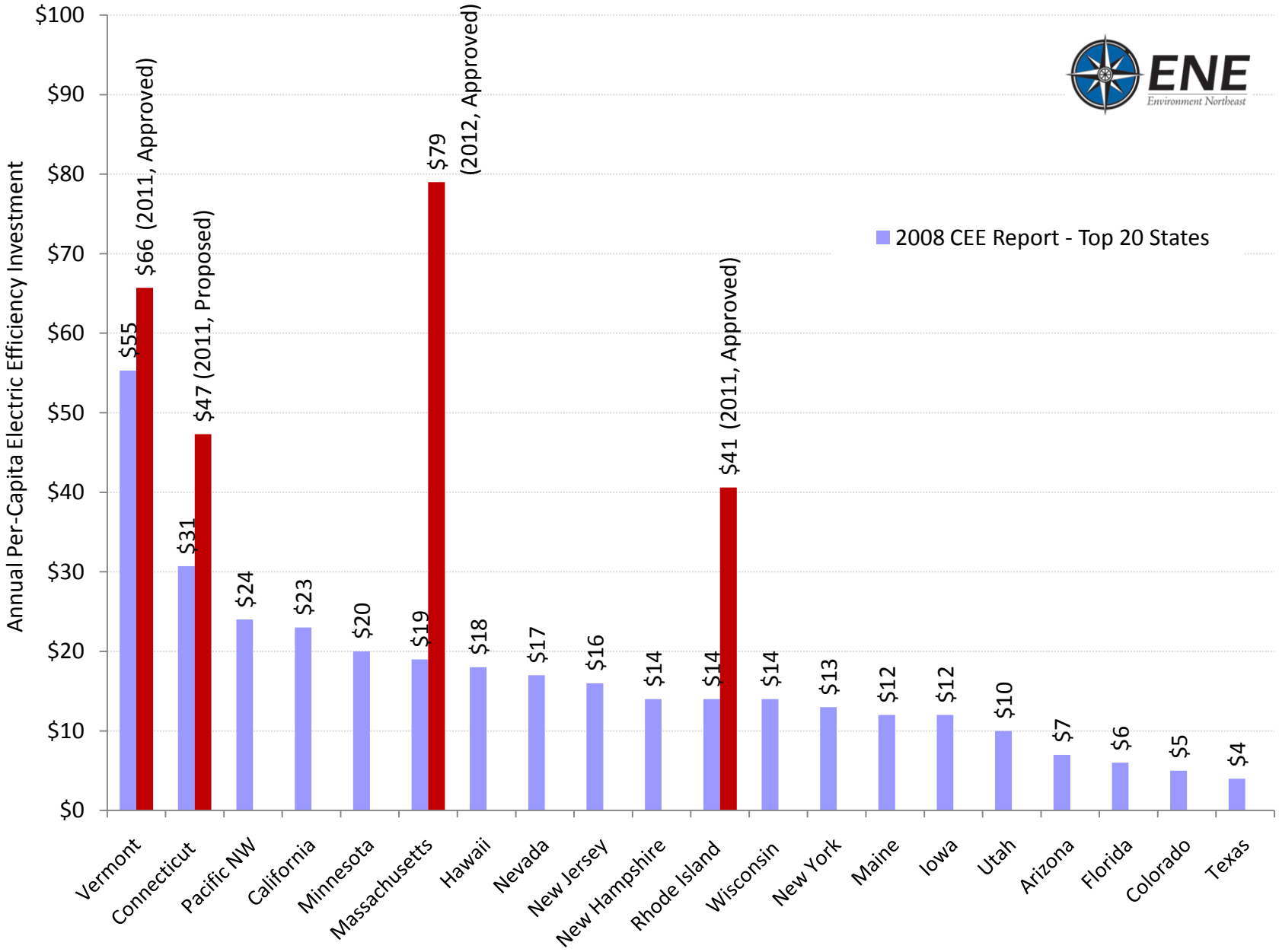
Carbon Markets Yield EE Investments:
Regional Greenhouse Gas Initiative (RGGI) – MA example

- 87% of allowances auctioned

	Revenue	Energy Efficiency Share	Projected Energy Efficiency Funding
Auctions 1-5	$432,834,987	64.8%	$280,369,368
Auction 6	$61,587,121	62.6%	$38,559,692
Total	$494,422,108	64.5%	$318,929,060

- MA has raised $79 million to date:
  - $63 million for state-supervised EE programs run by utilities
  - $16 million for state EE and RE programs

Economic Opportunity to Invest in EE in all States

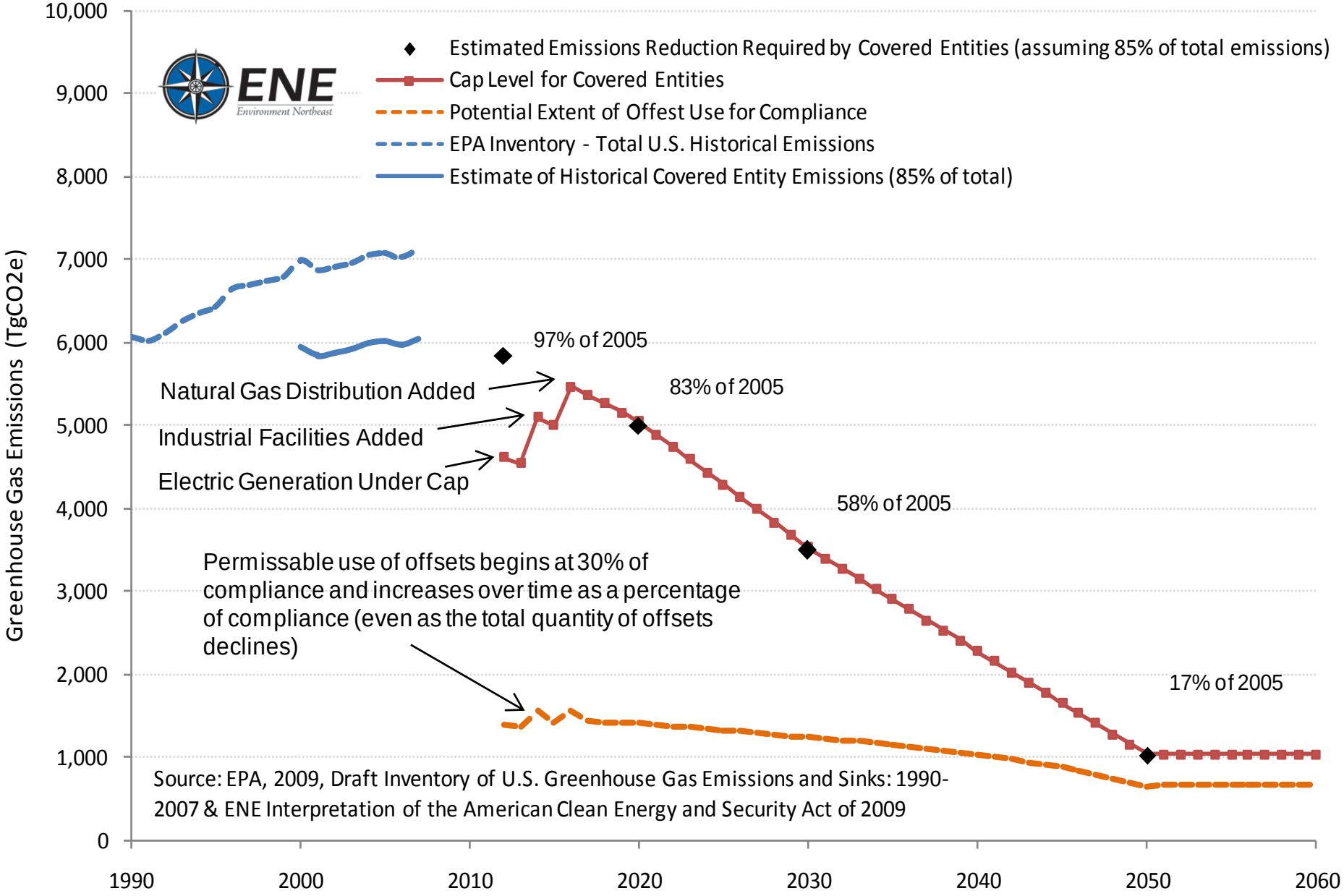


…State Procurement Mandates + Federal Carbon Dollars

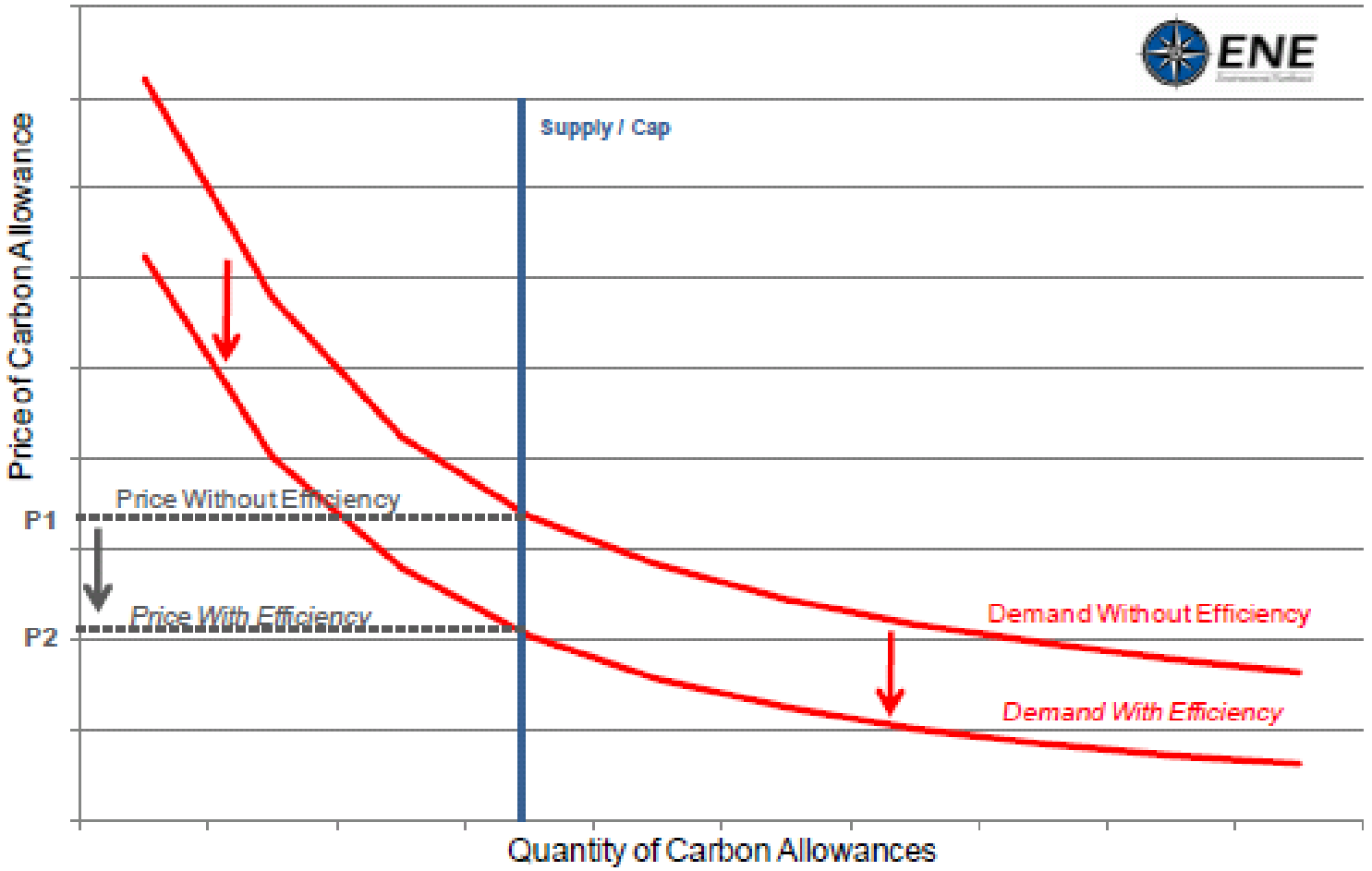
American Clean Energy & Security Act allocations to EE:

- 1/3rd of allocation to **natural gas** local distribution companies (~3% of total) for EE programs
  - $4 billion nationwide, $53 million for MA annual (vs $145M plan)
- 1/2 of allocation for **heating oil** consumers (~1% of total) for EE programs
  - $1 billion nationwide, $70 million for MA annual
- **Adding 1/3rd of allocation to electric utilities** for EE programs (12% of total)
  - $12 billion nationwide, $150 million for MA (vs. $600M plan)

Waxman-Markey (ACES) Cap



Efficiency Lowers Carbon Prices: *Econ 101*



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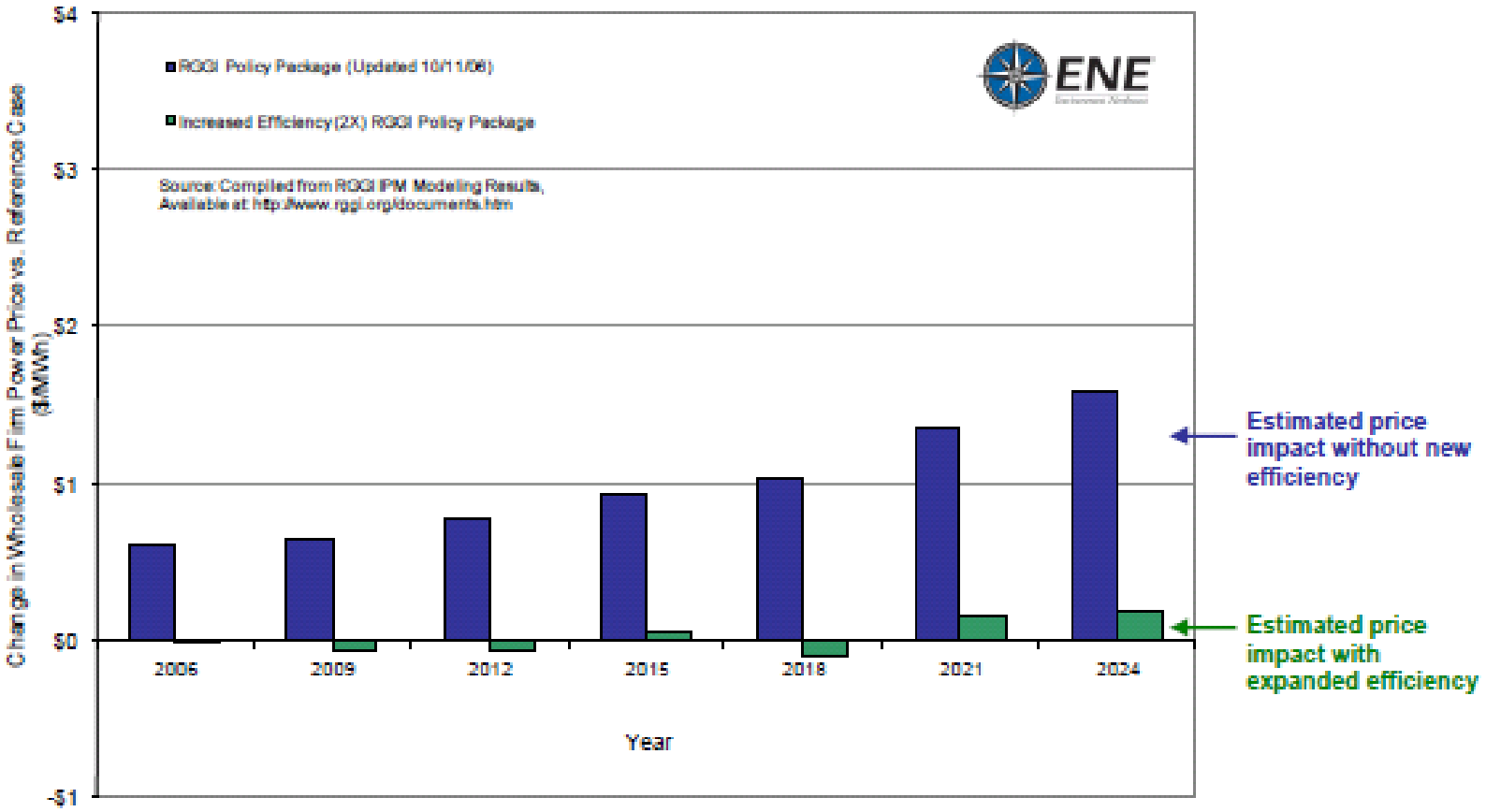
Efficiency Lowers Carbon Prices: *RGGI Example*



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Even with Climate Legislation and Price on Carbon – Well-Designed Comprehensive EE Programs Are Critical

The Need for Efficiency Programs

Efficiency programs are needed to overcome market failures that inhibit consumers from spending money on efficiency measures that require up-front investments to deliver net economic benefits. Examples of these market failures include:

Liquidity Constraints – inadequate access to capital to purchase efficient equipment or improve building energy performance

Split Incentives – the owner of a piece of equipment or building (usually the landlord) does not pay the energy bill and is thus unlikely to invest in efficiency improvements that would benefit the resident/renter

Information Problems – purchasers do not know the future energy costs of a product or property and are thus unlikely to invest in the more efficient option

Behavioral Problems – the complexity of a decision is beyond the ability of a consumer to make an economically rational choice

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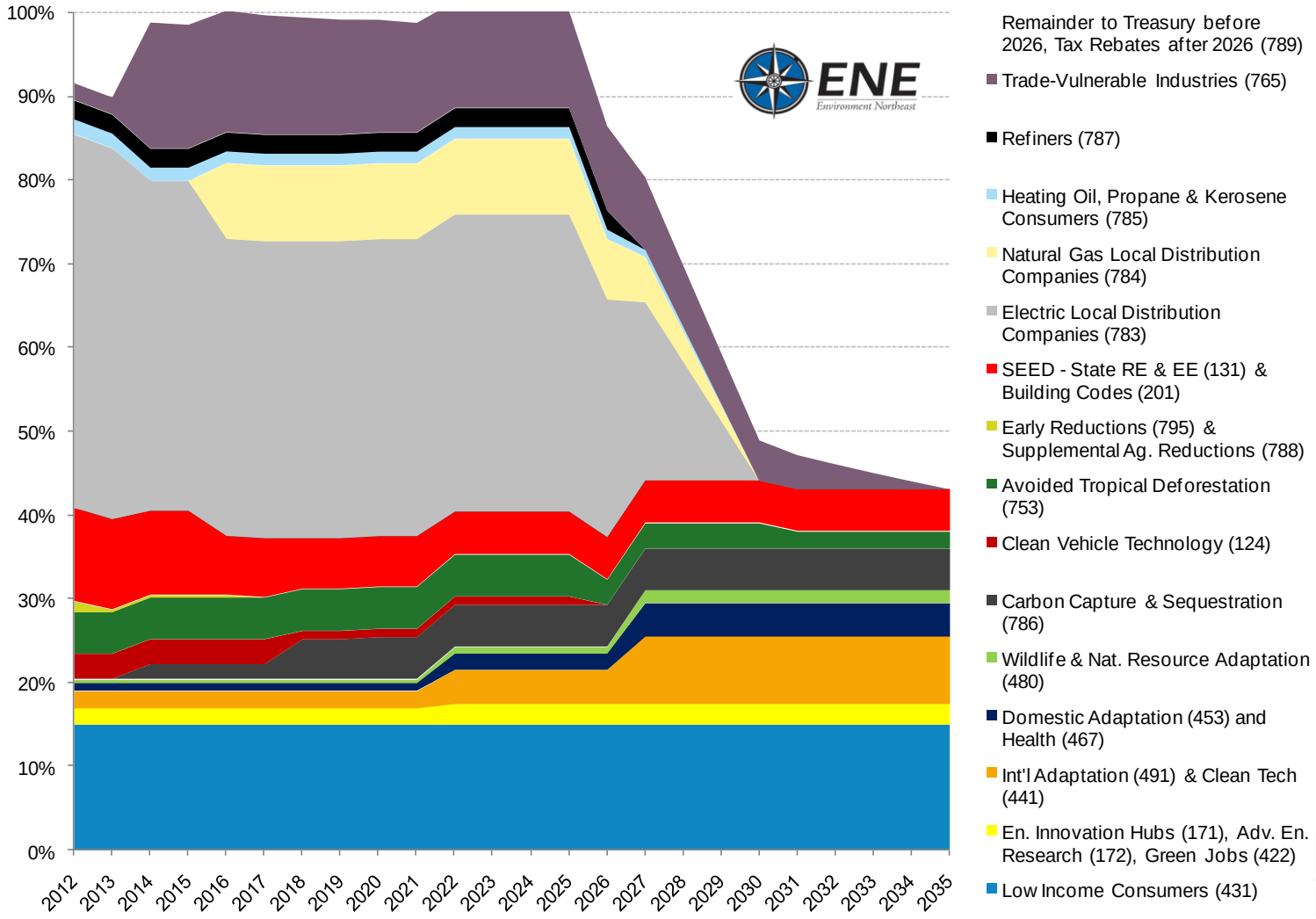
Waxman-Markey (ACES) Allocations by Sector



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In the Senate a Need to…

- Support existing EE allocations
- **Like to natural gas allocation, require that 1/3rd of allowances given to electric local distribution companies support EE (~12% of total)**
- By 2020:
  - $15.7 billion in **annual** funding nationwide, $195 million for MA
  - Approximately $47 billion in **annual** savings nationwide
  - $585 million in **annual** savings in MA
  - $3.7 billion **annual** increase in Gross State Product
- Consumer savings, fewer emissions, better C&T program

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