Massachusetts Energy Trends

Energy Efficiency vs. Current Supply

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- **Who We Are:** Environment Northeast is a nonprofit research and advocacy organization focusing on the Northeastern United States and Eastern Canada. Our mission is to address large-scale environmental challenges that threaten regional ecosystems, human health, or the management of significant natural resources. We use policy analysis, collaborative problem solving, and advocacy to advance the environmental and economic sustainability of the region.
- **Where We Are:** Rockport, ME / Portland, ME Boston, MA / Providence, RI / Hartford, CT New Haven, CT
- **Primary Project Areas:** energy & climate policy in New England and Eastern Canada
- **Development of Comprehensive Policy Recommendations:** see *Climate Change Roadmap for New England and Eastern Canada* for recent policy work

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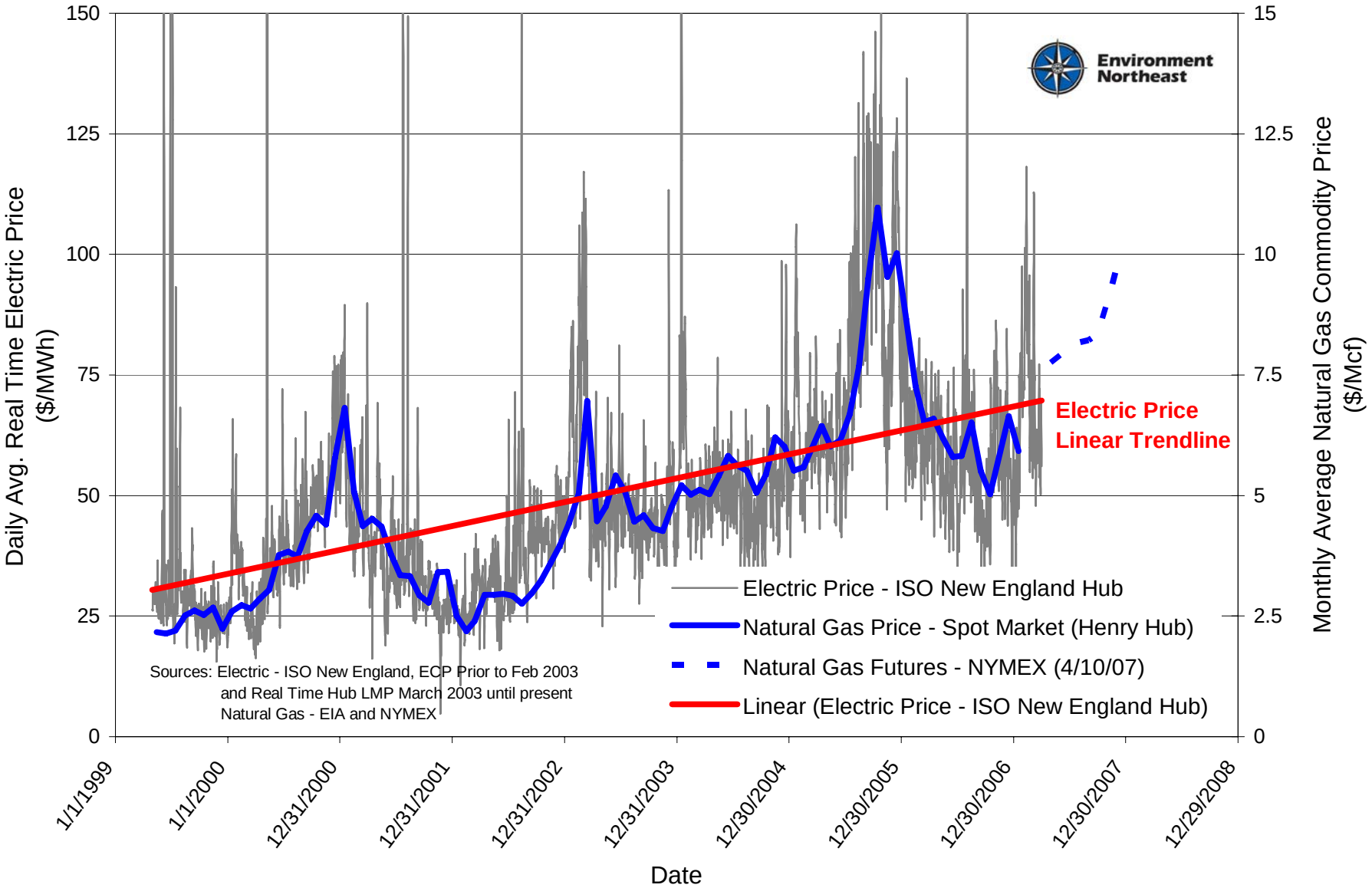
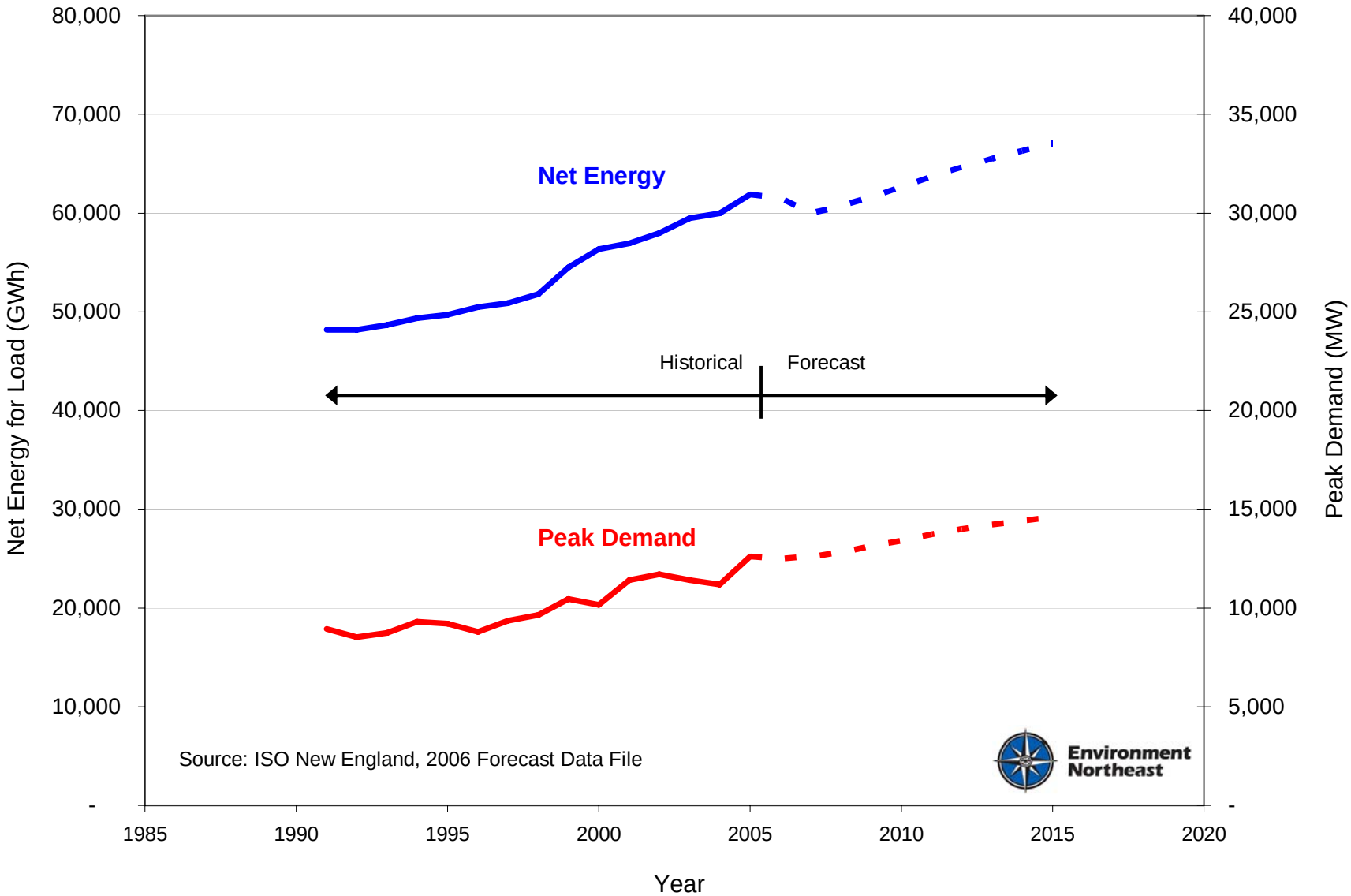
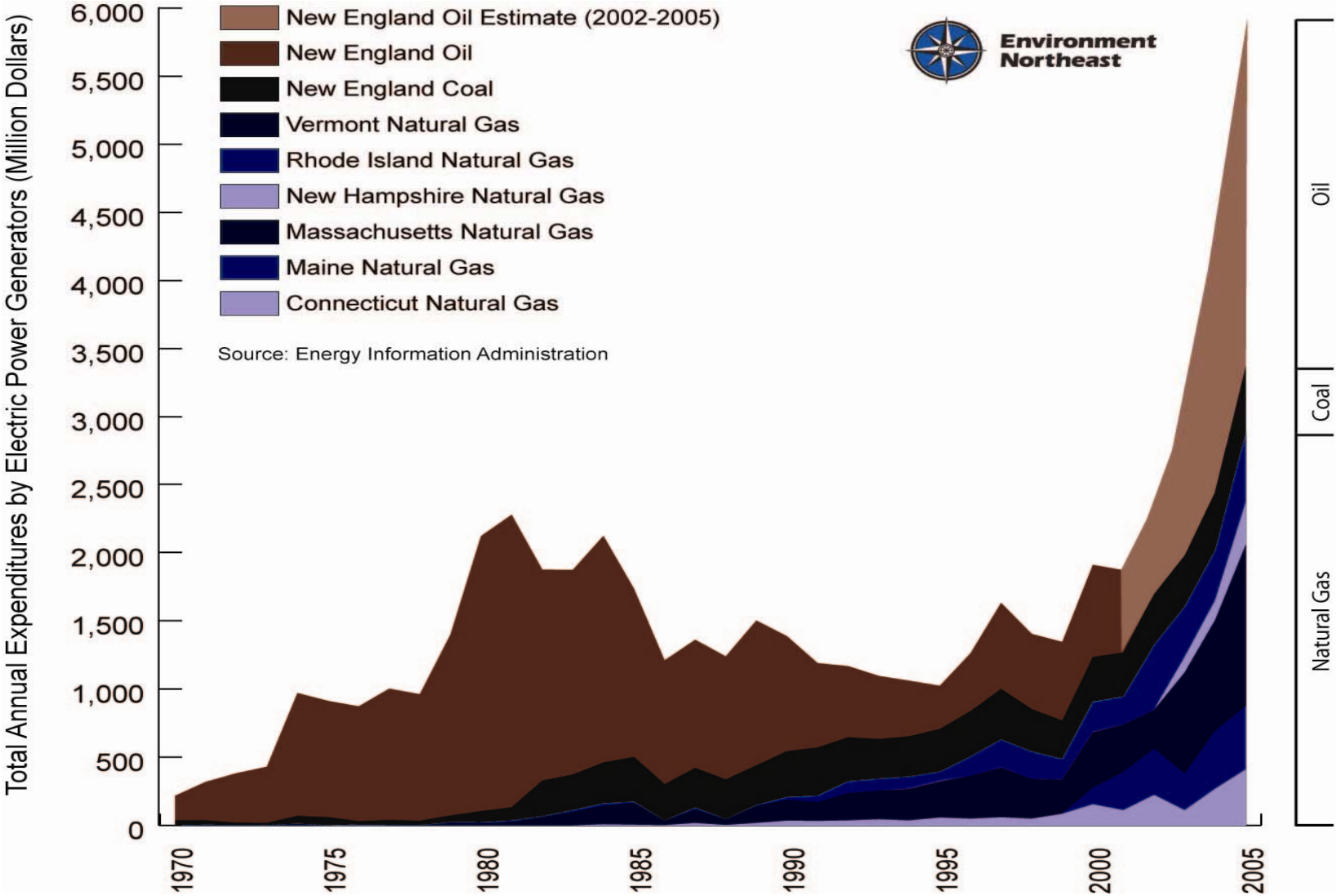
Electric & Natural Gas Price Trends



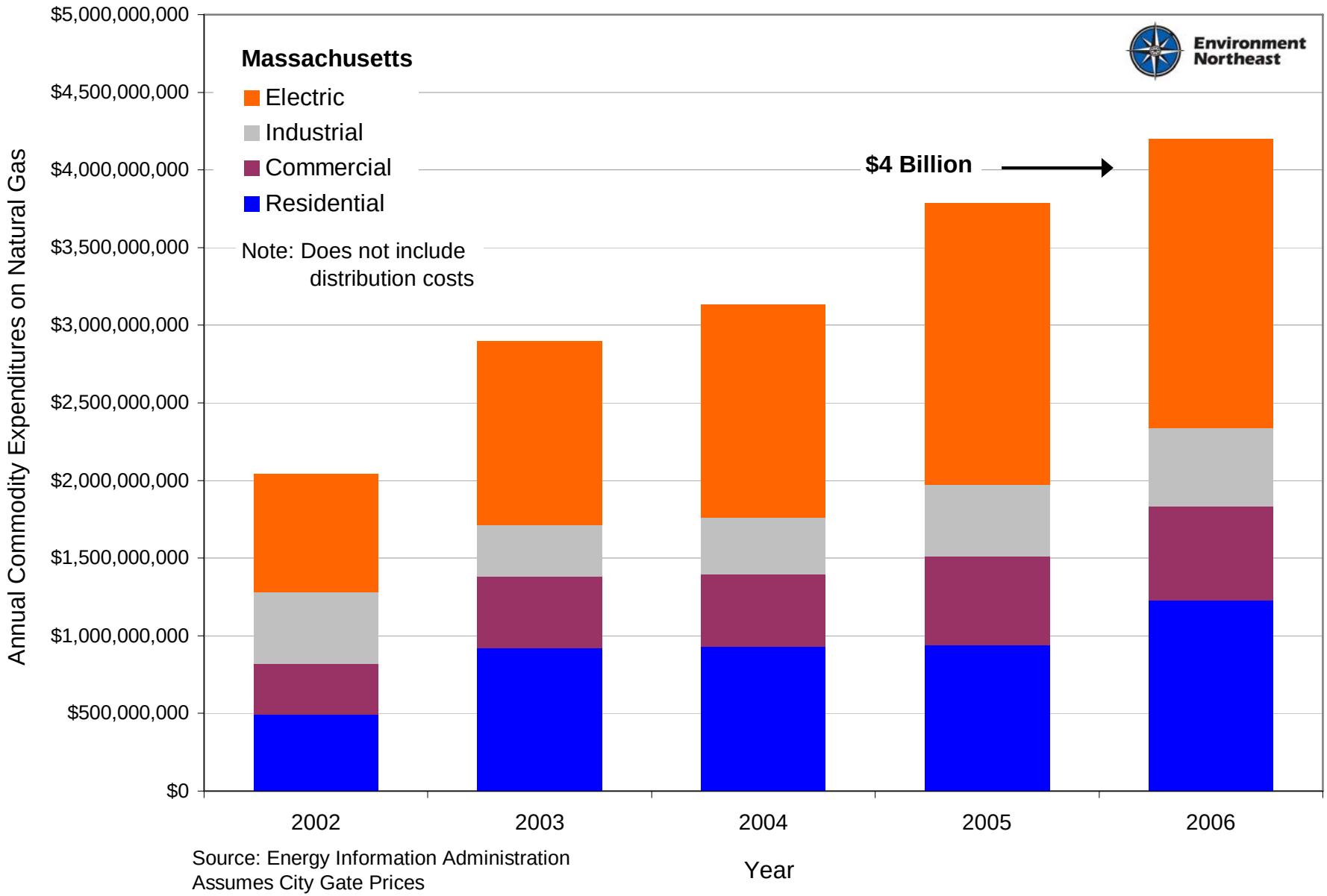
Mass Electric Energy Demand



Fossil Fuel Consumption & Costs for Electric Power Generation

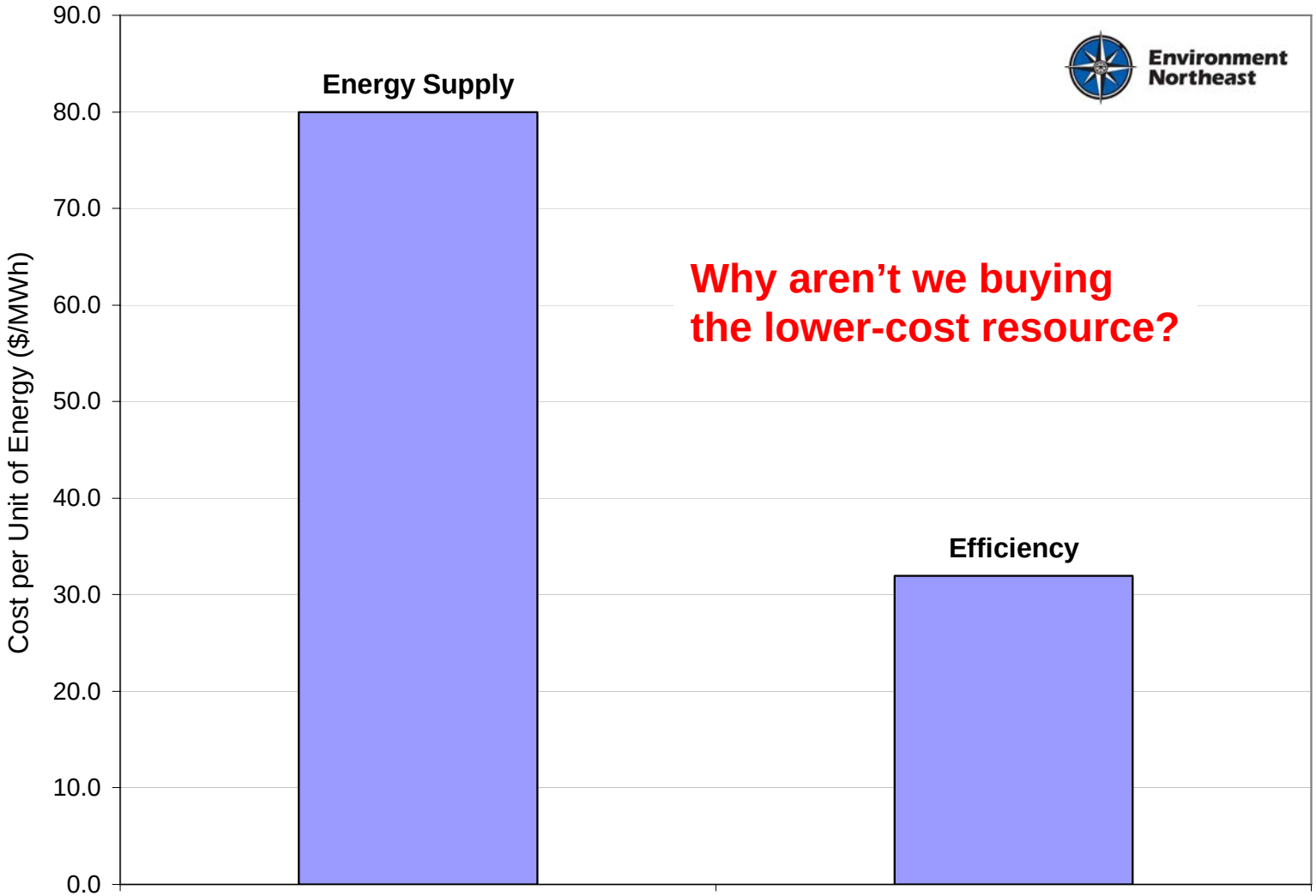


Mass Spending on Commodity Natural Gas



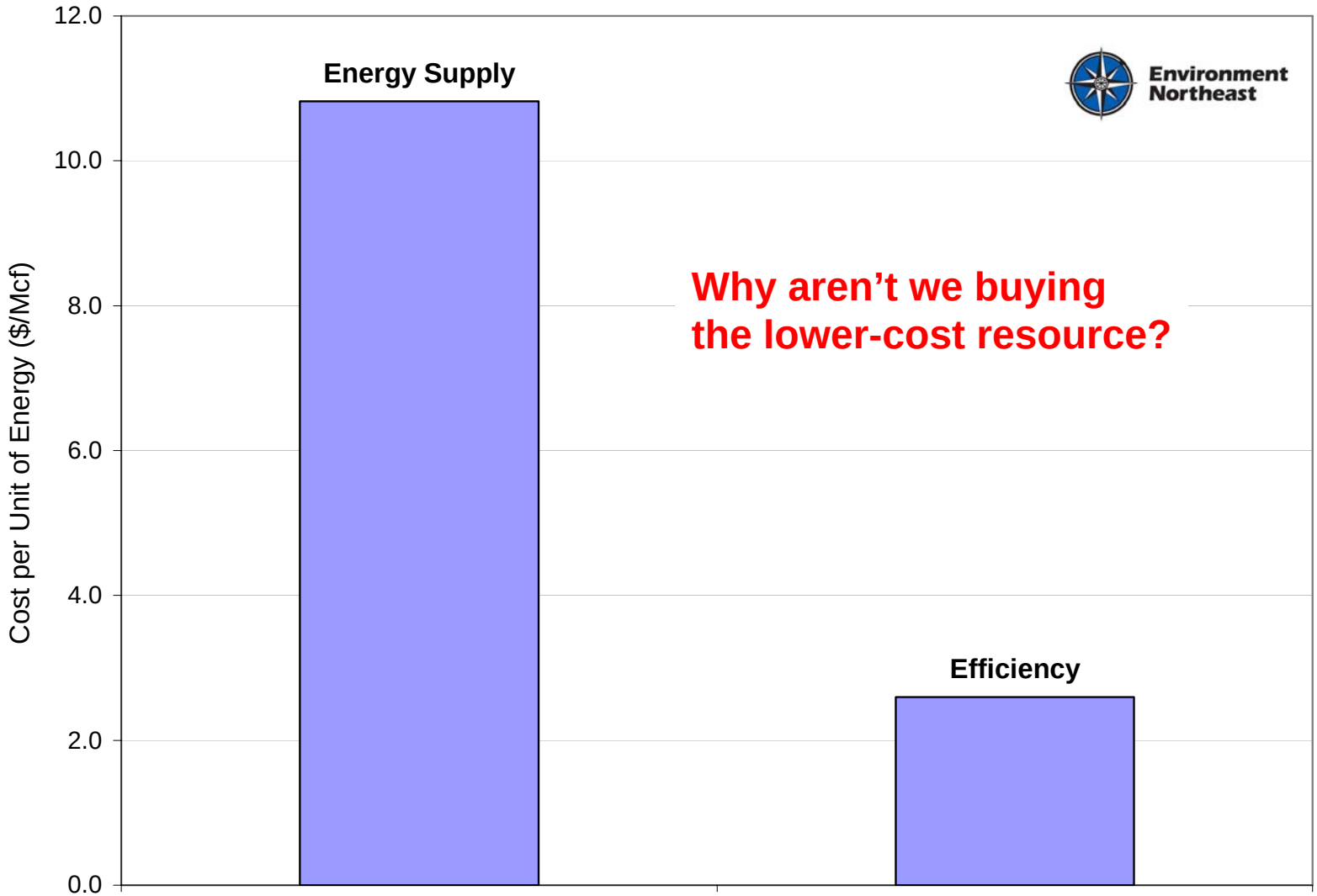
Source: Energy Information Administration
Assumes City Gate Prices

Electric
Supply Costs vs. Efficiency Costs



Source: MA DOER

Natural Gas
Supply Costs vs. Efficiency Costs



Source: Keyspan

Electric Efficiency Program Benefits

The electric energy efficiency (EE) programs administered by the utilities deliver the following benefits:

- Utility programs invest ~$125M/yr, and generate total consumer savings exceeding ~$500M
- For every $1 invested by utilities & customers, more than $3 are saved
- The programs deliver energy savings at 3.2 ¢/kWh, compared to energy supply costing customers around 10 ¢/kWh
- We spend around $6 Billion/yr on energy supply costing 10 ¢/kWh, but yet we only invest ~$125 Million/yr in 3.2 ¢/kWh efficiency programs – *we are not investing in the low-cost resource*
- Over the next 10 years total savings to MA consumers from existing utility-run electric efficiency programs will be more than $5 billion

Electric Efficiency Program Benefits
(Cont.)

- Efficiency investments:
  - Put money in consumers wallets
  - Reduce a fossil fuel trade deficit that has grown into the billions, and
  - Grow energy service jobs and the economy
- Energy Efficiency is the cleanest energy resource
  - Annual program investments yield avoided consumption of ~5 Million MWh of energy, equivalent to ~2.8 Million tons of CO_2
  - Electric efficiency programs are critical to meeting Massachusetts' clean air and GHG goals
- Current efficiency programs create ~2,000 non-utility jobs and generate hundreds of millions of dollars in economic growth (DOER, 2002)
- Overall the MA utility-run efficiency programs are well designed and implemented and in many cases award-winning.

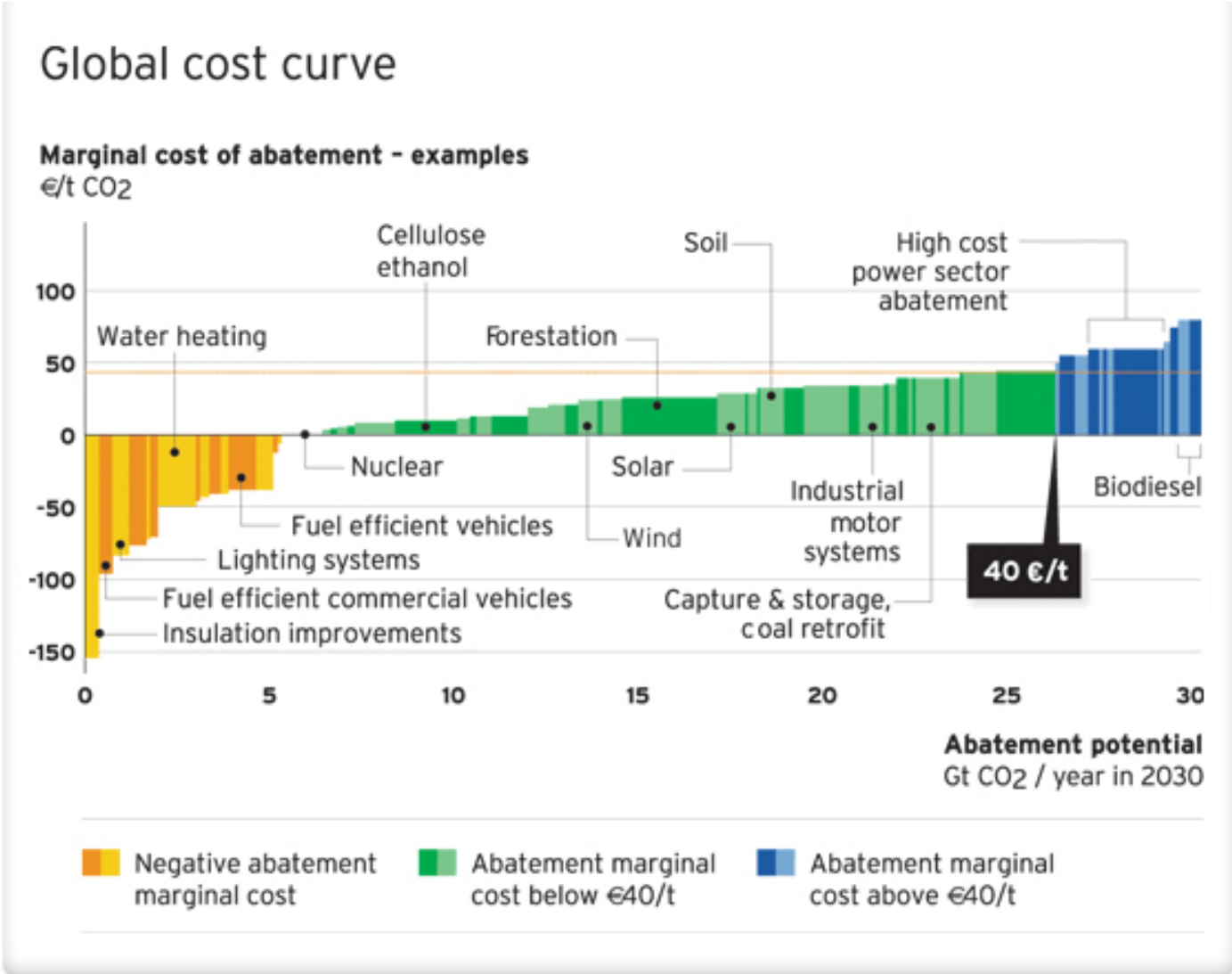
Natural Gas Efficiency Program Benefits

The utility-administered natural gas EE programs also deliver large benefits. One utility's, KeySpan, results for 1-yr spanning 2005-06 are as follows[1]:

- KeySpan invests ~$12.6M/yr, and generates total consumers savings exceeding ~$73.4 million
- For every $1 invested by utilities & customers, more than $2.70 saved
- The programs deliver energy savings at $2.6/Mcf ($0.25/therm), compared to energy supply costing customers ~$11/Mcf ($1.1/therm)
- The natural gas efficiency programs deliver similar benefits to the electric programs in terms of energy independence, job and economic growth, and reduced emissions.
- The KeySpan natural gas efficiency programs save over 600,000 tons of CO_2 every year the programs are run.

[1]Many gas utility programs are run through a joint program called GasNetworks and deliver similar results.

The Cost of Cutting Carbon Emissions



Source: Vattenfall

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Mass Policy Proposal: A New Framework

- Today – A combination of statutory limits on investment levels and outdated utility revenue schemes restrict the size of cost-effective electricity and natural gas efficiency investments.
- *Proposal* – Improve the way the state invests in efficiency programs that currently cost a small fraction of the price of energy supply.
  - Invest in all efficiency resources that are cheaper than supply
  - Align structuring utility rates and financial incentives with the goals of increasing EE investments & promoting cleaner, distributed generation.
- This proposal would significantly help the state achieve:
  - Its climate change and clean air goals;
  - While saving consumers money,
  - Creating local jobs, and
  - Keeping more of our energy dollars at home rather than expanding supply resources increasingly reliant on expensive imported fossil fuels.

Mass Policy Proposal: The Key Elements

- The electric and gas distribution utilities shall increase investments in EE and demand reduction programs to capture all achievable and cost-effective EE investments (available at lower cost than supply) that are reliable and feasible.
- A new Energy Efficiency Advisory Council (EEAC) composed of business, consumer, environmental, and state agency reps works with utilities to:
  - Identify and capture all energy efficiency resources cheaper than supply
  - Improve EE program design and implementation
  - Increase utility accountability, ensure a ratepayer role, while leaving final regulatory approval with Department of Public Utilities (DPU).
- Align utility incentives with the goal of increasing EE and distributed generation by decoupling utility fixed costs from sales.
  - In addition, design utility performance incentives tied to their success in implementing EE programs that maximize ratepayer energy savings.

Mass Policy Proposal: The Opportunity

- Increasing investment in 3.2 ¢/kWh efficiency resources over time to $400M/yr would generate total consumer savings exceeding ~$1.6 Billion
- Over the next 10 years total savings to MA consumers would exceed $20 Billion
- Making cost-effective electric efficiency investments at this scale would avoid the consumption of ~16 Million MWh of energy, equivalent to ~9 Million tons of CO_2
- Similar opportunities exist for natural gas efficiency benefits
- Investing in cost-effective efficiency resources, *those cheaper than supply*, will save customers billions of dollars and allow Massachusetts to meet its clean air and GHG goals

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