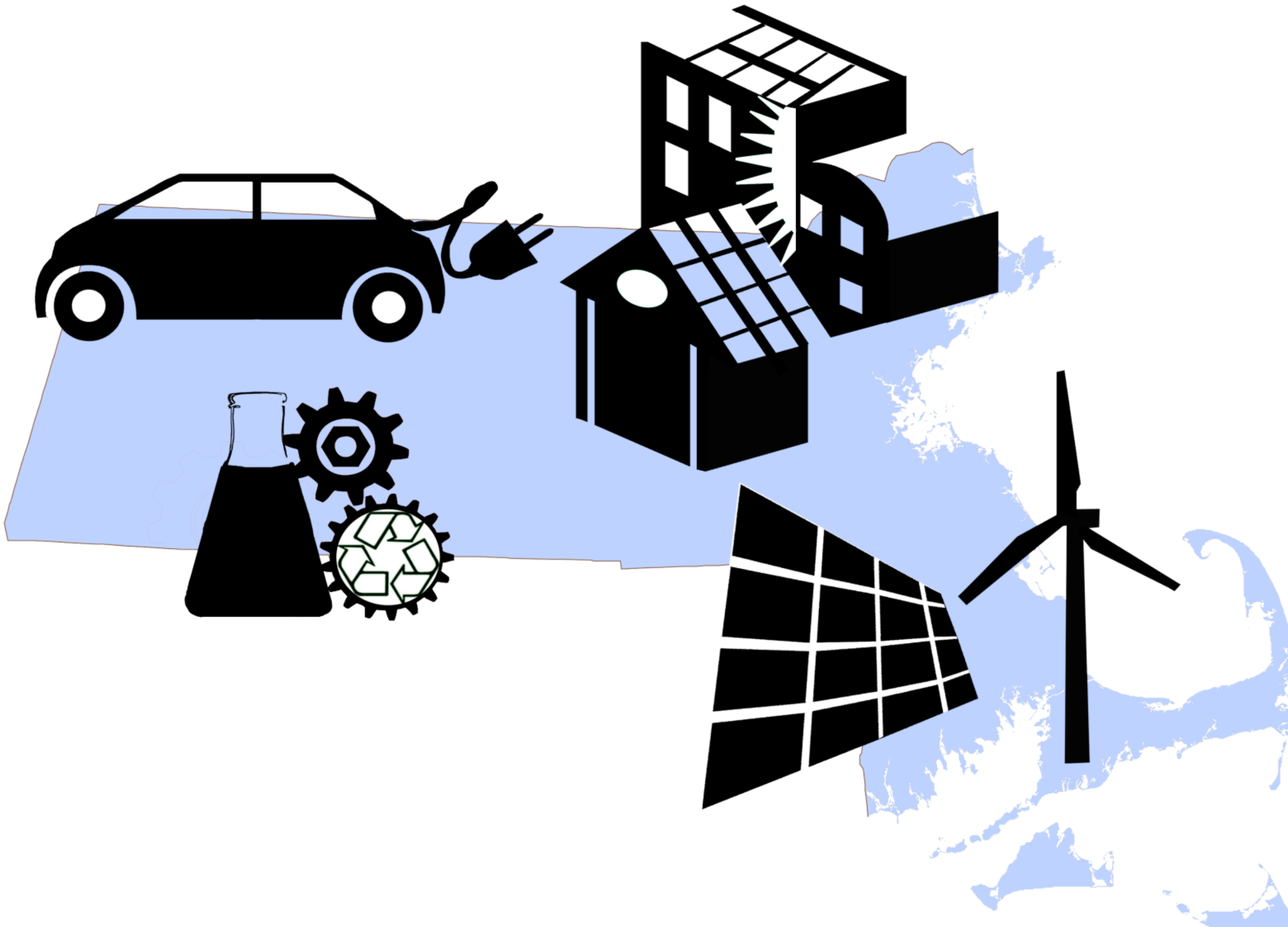
Massachusetts Clean Energy and Climate Plan for 2020



Executive Office of Energy and Environmental Affairs

Massachusetts Clean Energy and Climate Plan for 2020

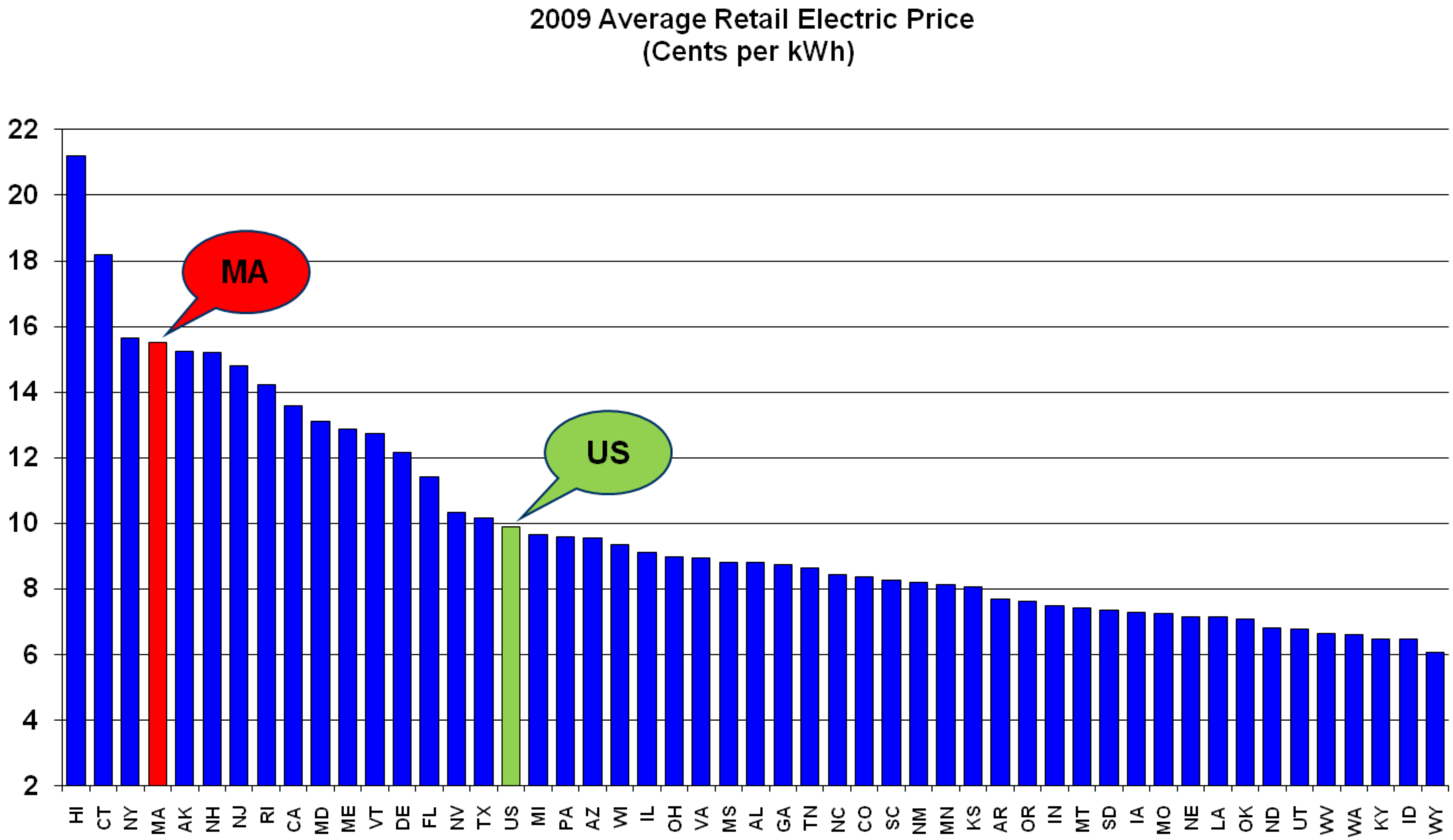
I. The Rationale: Launching the Clean Energy Revolution

II. An Integrated Portfolio of Policies

III. Implementing the Global Warming Solutions Act

IV. Beyond 2020: The Road to 80% Lower Emissions in 2050

MA has High Electricity Prices …



Source: EIA Form 826

CALLAHAN: C'S TRADE ON THE MONEY P. 51

BOSTON Herald

www.bostonherald.com

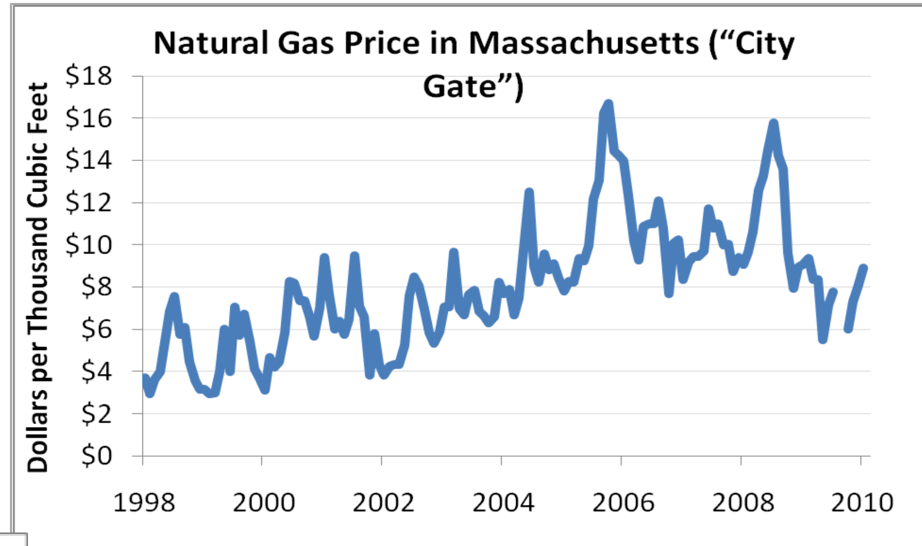
TUESDAY, MARCH 1, 2011 ■ $1.00

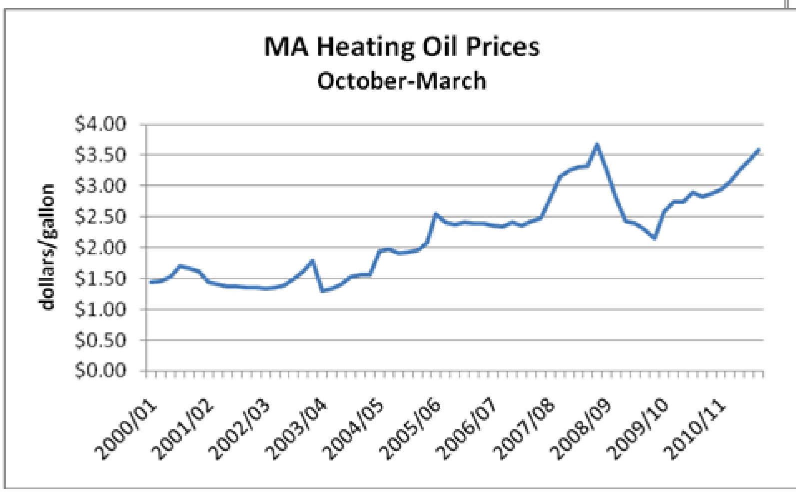
IF YOU THINK THESE GAS PRICES ARE STEEP ...

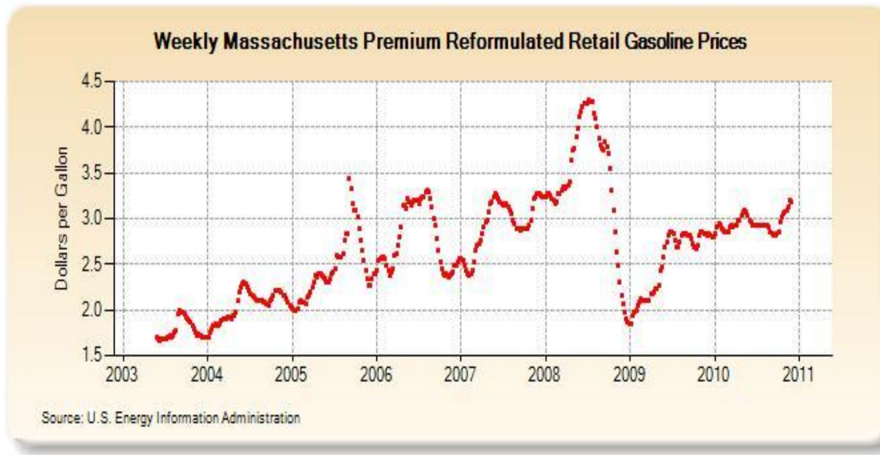
TRY $5!

ENERGY EXPERTS: HUGE SPIKE AT PUMP POSSIBLE WITHIN WEEKS: PAGE 5

Energy Costs & Volatility



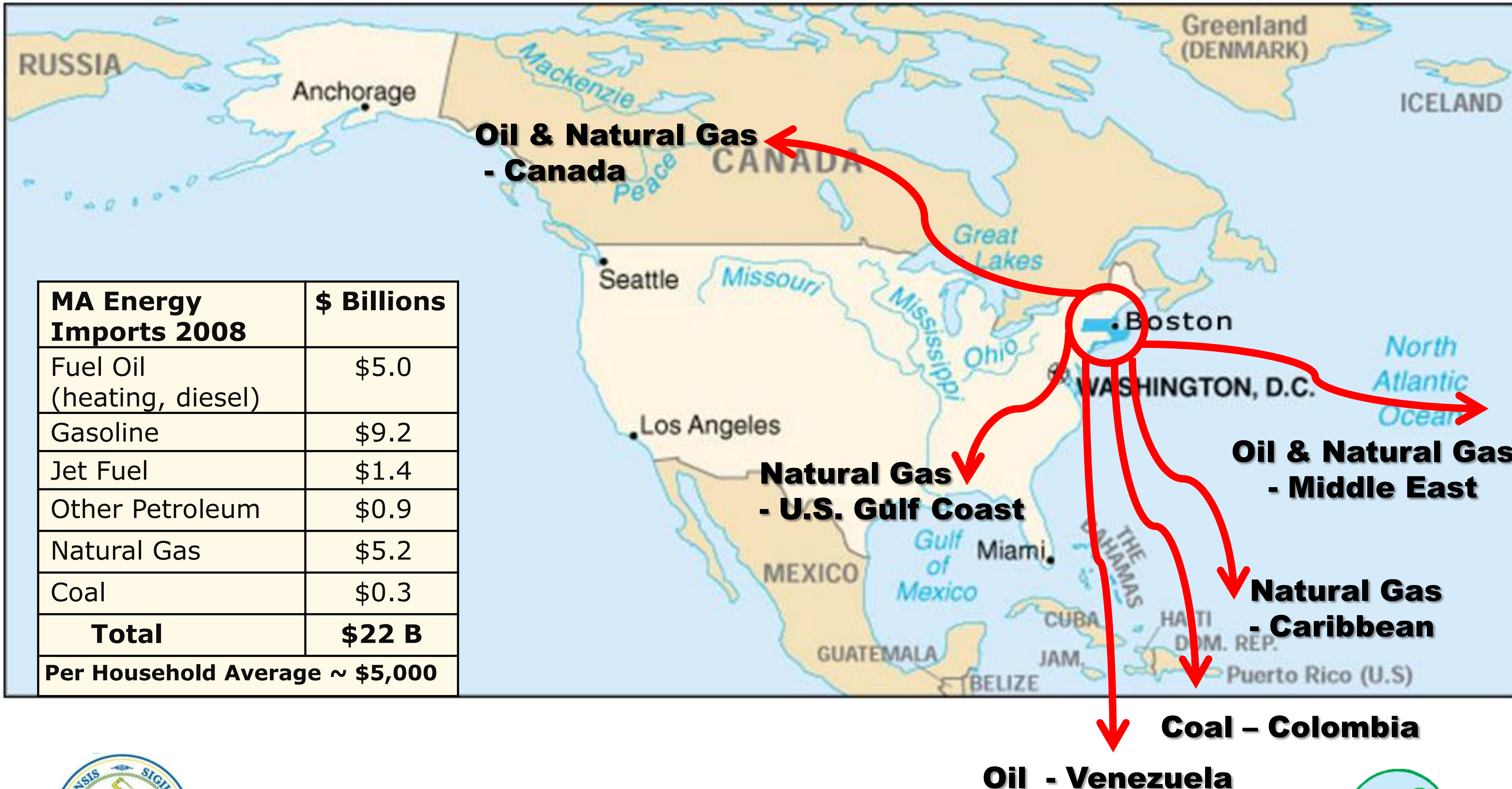




Consumer, Business Energy Savings

Policy	$Billion
Electric efficiency	2.5
Natural gas efficiency	0.8
Fuel oil efficiency	0.2
Federal and CA vehicle standards	1.7
Clean car incentives	0.2
Total	**5.4**

Energy Dollars Flowing Out of MA



MA Energy Imports 2008	$ Billions
Fuel Oil (heating, diesel)	$5.0
Gasoline	$9.2
Jet Fuel	$1.4
Other Petroleum	$0.9
Natural Gas	$5.2
Coal	$0.3
Total	**$22 B**
Per Household Average ~ $5,000	

Economic Opportunity: Projected job growth in 2020

Induced or indirect job growth	36, 000
Clean energy sector job growth	6,000-12,000
Total	**42,000-48,000**

Energy Efficiency

- Most ambitious EE program in the country;
  - 3 X California/capita;
- Doubling of employment in EE services since 2007
- $2 Billion Investment = $6 Billion Savings
  - Cheapest “new” source of energy;
- By 2020 – 20% electricity through EE;
- 5%-6% GHG reductions

Solar

- 20-fold increase in solar PV – from 3.5 MW to more than 70 MW by end of 2010;
- 4-fold increase in number of firms involved in solar energy installation (50 >> 200);
- Doubling of employment in solar manufacturing and installation between 2007 to 2009.

Solar

Market Sector	Current U.S. Market Price Range (¢/kWh)	Cost (¢/kWh) Benchmark 2005	Cost (¢/kWh) Target 2010	Cost (¢/kWh) Target 2015
Residential	5.8-16.7	23-32	13-18	8-10
Commercial	5.4-15.0	16-22	9-12	6-8
Utility	4.0-7.6	13-22	10-15	5-7

Biomass

Rethinking Biomass Incentives

- Commissioned a study by the Manomet Center for Conservation Sciences, released June 10, 2010;
- New DOER regulations that go beyond what any state and the US EPA is doing;
- MEPA GHG policy; contemplating new regulations.

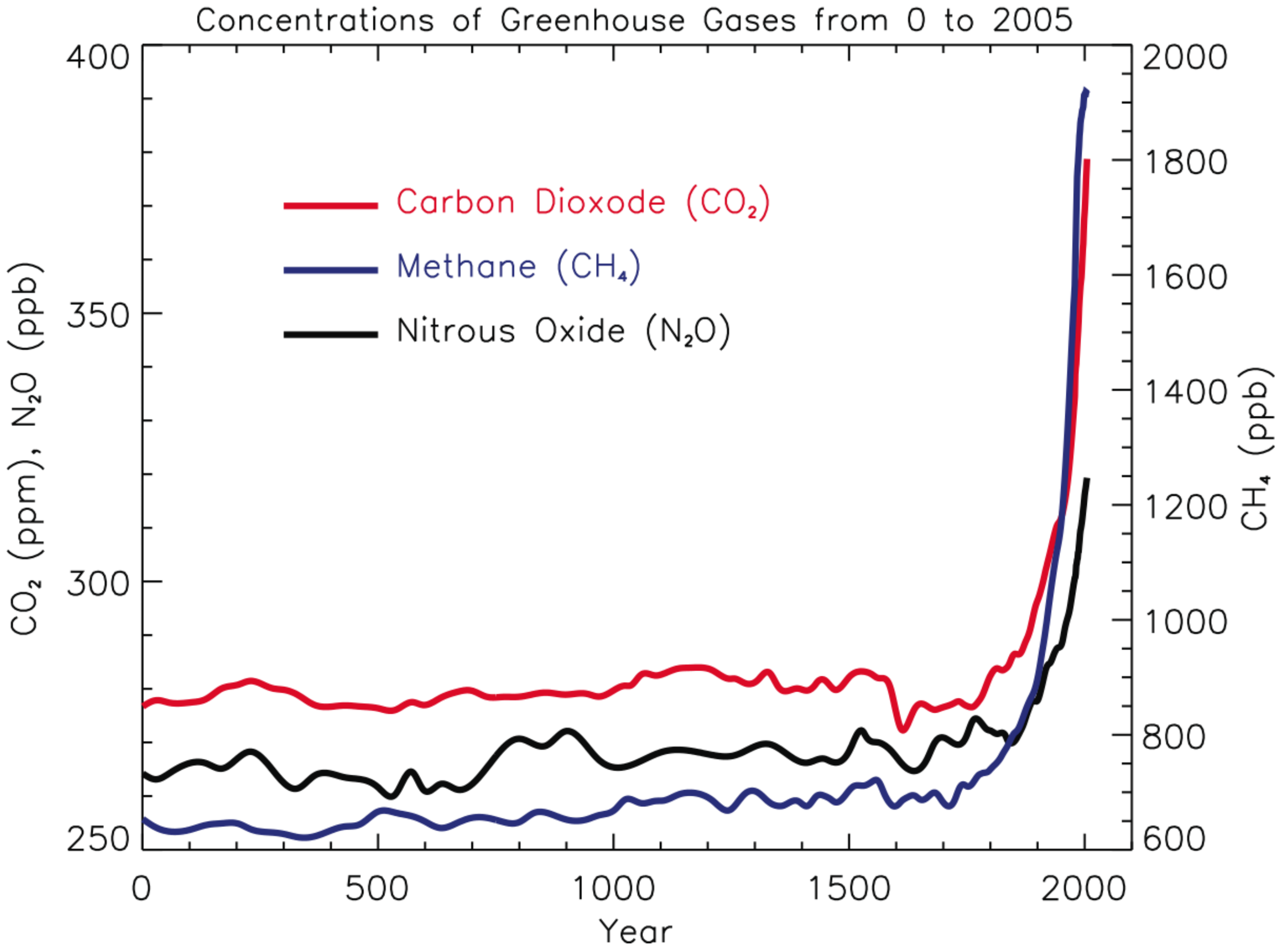
Wind

- 10-fold increase in wind – from 3.1 MW to more than 30 MW by end of 2010;
- Building the wind cluster:
  - Wind Blade Test Facility;
  - Cape Wind
  - Vestas R&D
  - Siemens Offshore
  - MassTank/EEW
  - New Bedford Port;
  - FloDesign
  - American Superconductor
  - First Wind

"By a range of different measures, Massachusetts stands out as a clean-energy leader among states in the U.S….with strong results to date in leading-edge policies, industry expansion, job creation, and increased investment and deployment."

A Future of Innovation and Growth: Advancing
Massachusetts' Clean-Energy Leadership,
Clean Edge, Inc., April 22, 2010.

Global Increase of GHG Concentrations



http://meltzerdesign.net/dropbox/masscec/MassCEC-Facility-Map.html

An Integrated Portfolio of Policies

Buildings (9.8%)

All cost-effective energy efficiency/RGGI (7.1%)

Advanced building energy codes (1.6%)

Building energy rating and labeling

“Deep” energy efficiency improvements for buildings (0.2%)

Expanding energy efficiency programs to C/I heating oil (0.1%)

Developing a mature market for solar thermal water/space heating (0.1%)

Tree retention and planting to reduce heating and cooling loads (0.1%)

Federal appliance and product standards (0.6%)

Electricity (7.7%)

Renewable Portfolio Standard (1.2%)

More stringent EPA power plant rules (1.2%)

Clean energy imports (5.4%)

Clean energy performance standard (CPS)

Transportation (7.6%)

Federal and California vehicle efficiency and GHG standards (2.6%)

Federal emissions and fuel efficiency standards for medium and heavy duty vehicles (0.3%)

Federal renewable fuel standard and regional low carbon fuel standard (1.6%)

Clean car consumer incentives (0.5%)

Pay As You Drive (PAYD) auto insurance (pilot program, possible expansion later) (1.1%)

Sustainable Development Principles (0.1%)

GreenDOT (1.2%)

Smart growth policy package (0.4%)

Non-Energy Emissions (2.0%)

Reducing GHG emissions from motor vehicle air conditioning (0.3%)

Stationary equipment refrigerant management (1.3%)

Reducing SF6 emissions from gas-insulated switchgear (0.2%)

Reducing GHG emissions from plastics (0.3%)

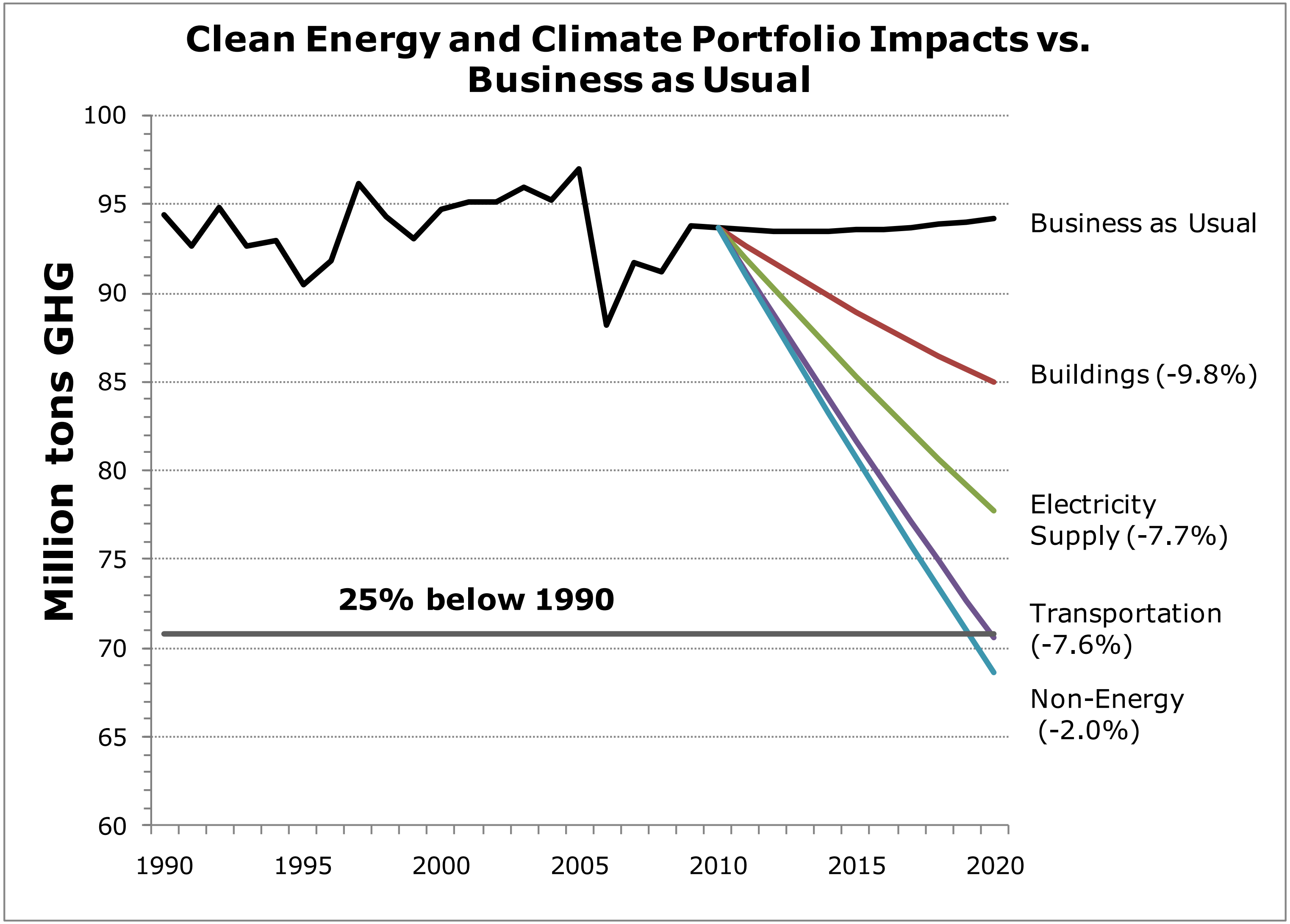
Cross-cutting Policies

MEPA GHG policy and protocol

Leading by Example

Green Communities Division

Consideration of GHG emissions in State permitting, licensing and administrative approvals



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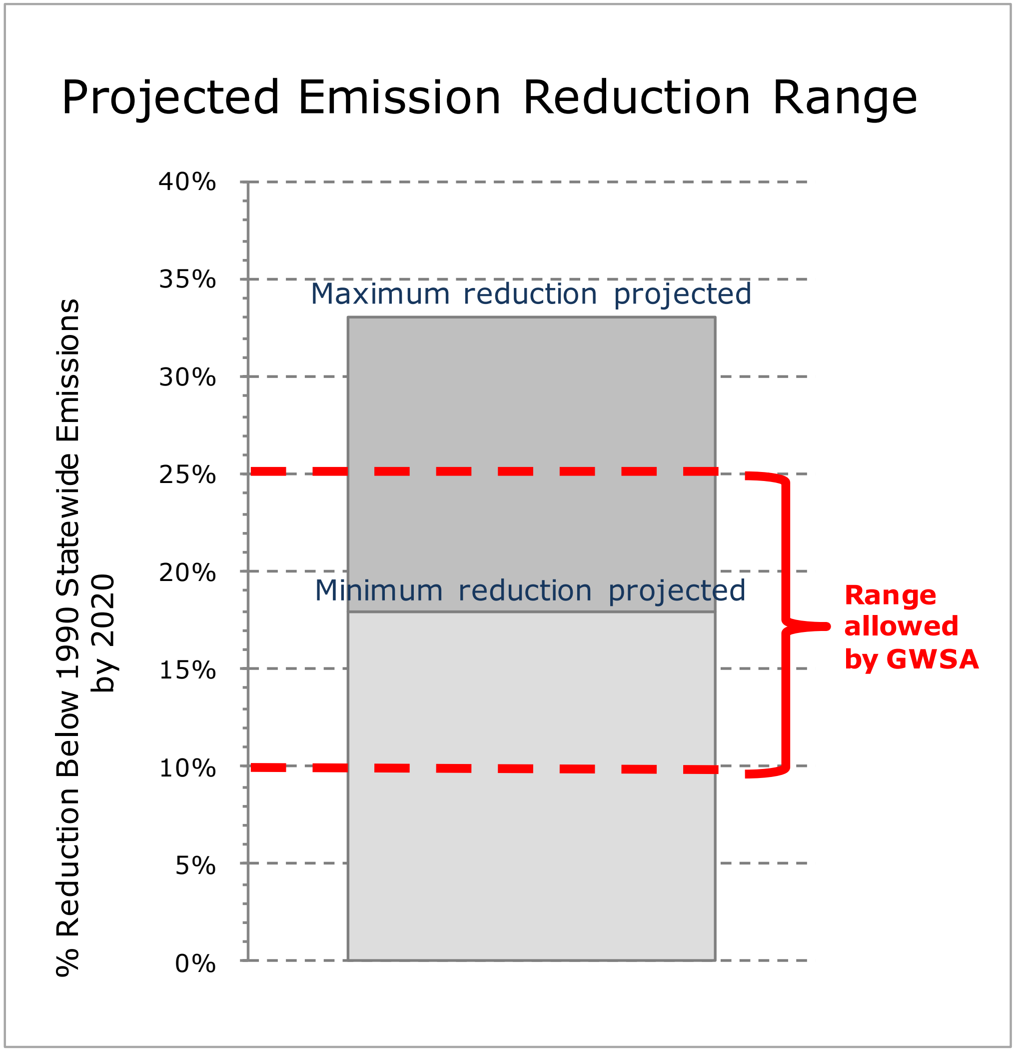
Setting the Limit



Putting the Plan into Action

Launch Clean Energy and Climate Advisory Committee

In 2011, state agencies responsible for each new measure will complete program development and consultative processes with stakeholders

Next four years – annual status reports to the Clean Energy and Climate Advisory Committee

Increased public, City/Town, regional groups, NGO, business community, engagement

5-year reviews

END