
Regional Greenhouse Gas Initiative (RGGI; “Reggie”)

Will Space

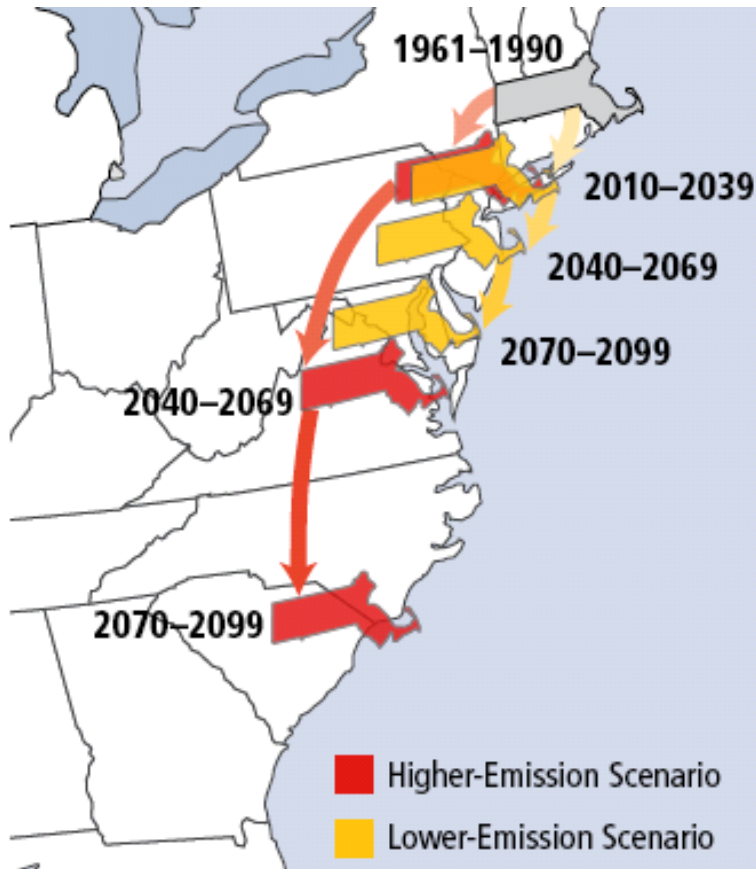
Massachusetts Department of Environmental Protection

Washington, DC

March 15, 2013



Climate Change: Massachusetts Impacts

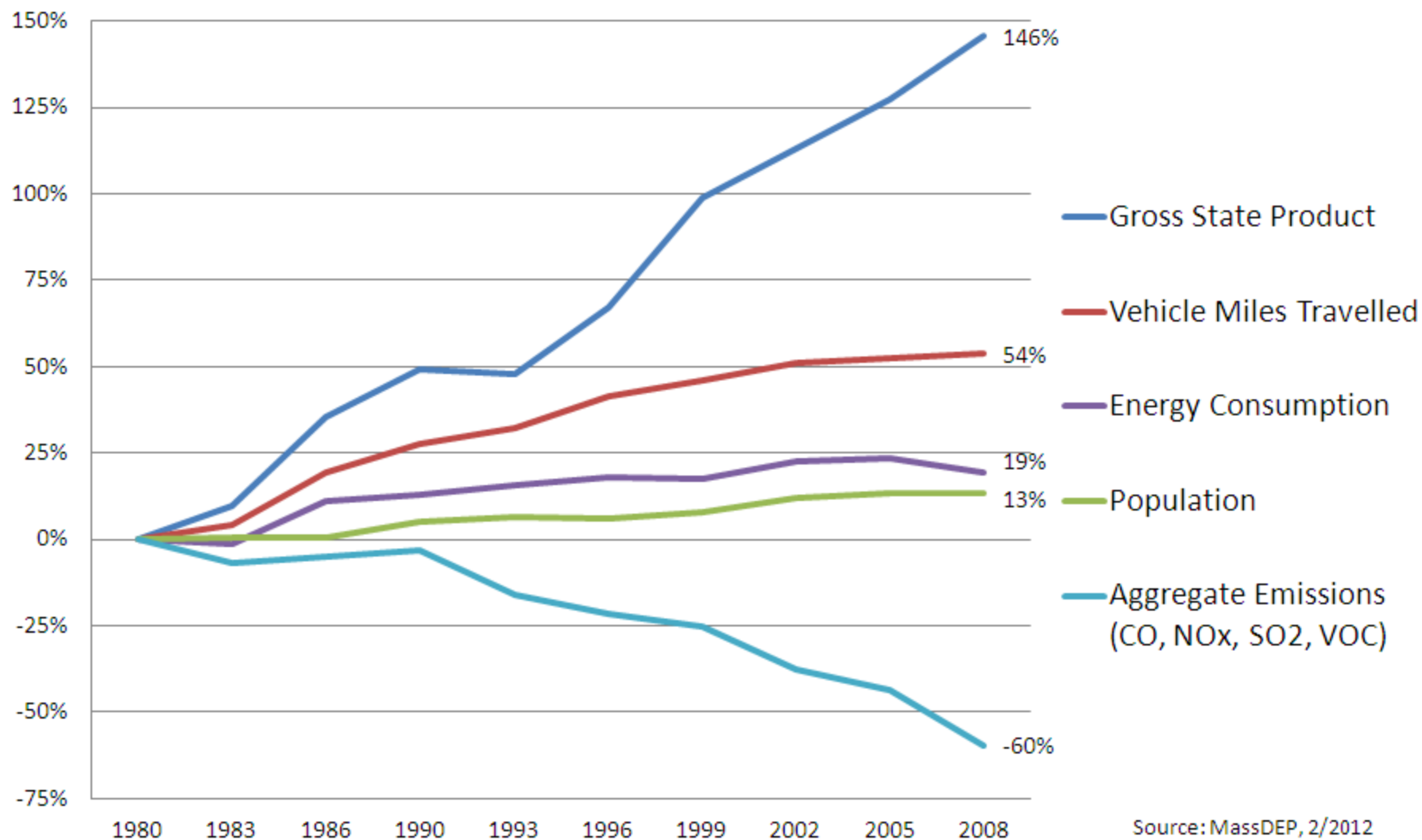


- Rising Sea Levels → Coastal Erosion
- Warmer Water → Degraded Habitats
- Hotter Summers → Health Impacts
More Droughts
- Warmer Winters → Less Maple Syrup
Less Snow/ Skiing

Source: UCS, 2007

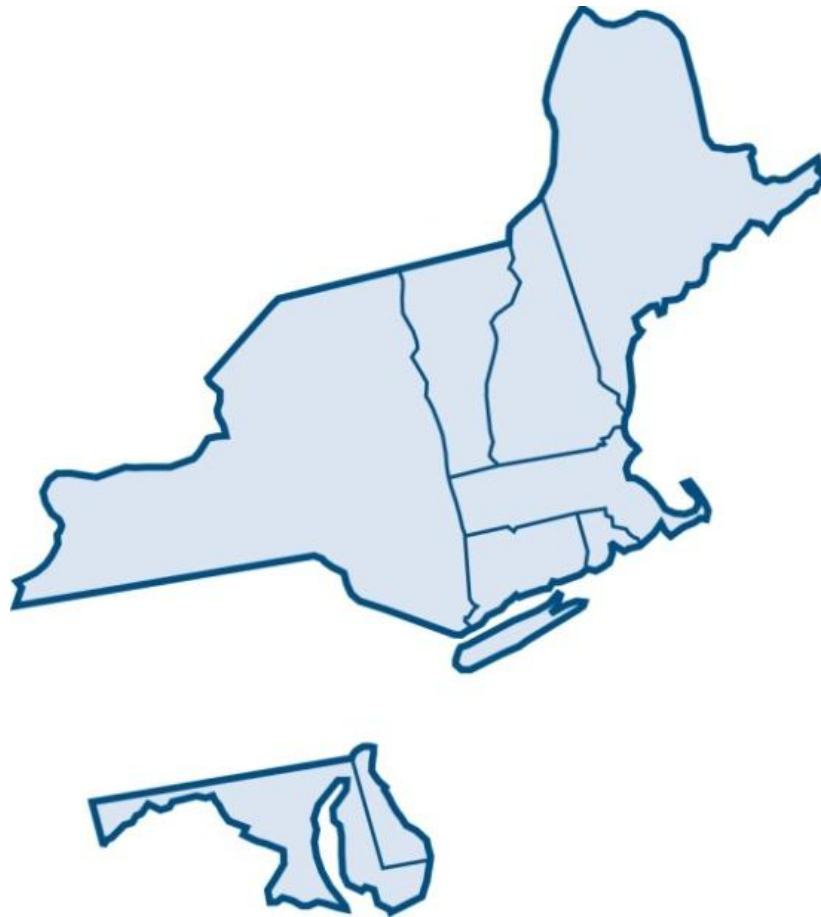


Massachusetts: Cleaner Air and a Growing Economy



Source: MassDEP, 2/2012

Regional Greenhouse Gas Initiative



- Cap and trade for carbon dioxide emissions from power plants in ten US states
- Cap will fall by 2.5% per year 2015 - 2020

RGGI: History and Timeline

- 2005: States agree on RGGI design features
- 2006 – 2007: Model rule development
- 2008: State rulemaking processes
- 2009 – 2011: First compliance period
- 2012 – 2014: Second compliance period
- 2011 – 2013: Program review
- 2014: Program changes implemented



RGGI: Key Program Features

- Linked state programs
- Covers power plants 25 MW+
- Allowance auctions, targeted investments
- Three year compliance periods
- Unlimited allowance banking by facilities
- Five offset categories
- RGGI, Inc., provides administrative support



RGGI: First Compliance Period

- Cap: 188 million short tons of CO₂ per year (for power plants in ten states)
- Emissions:
 - 2009: 124 million short tons
 - 2010: 138 million short tons
 - 2011: 124 million short tons
- Auctions:
 - Clearing prices: \$1.86 – \$3.51 per short ton
 - Over 400 million allowances sold; nearly \$1 billion
 - Most revenue for efficiency and clean energy



RGGI: Program Review

- Comprehensive review covering:
 - Program impacts
 - Additional reductions
 - Electricity imports and emissions leakage
 - Offsets
- Changes to be implemented in 2014
 - Cap lowered to 91 million tons (for nine states)
 - Cost containment reserve
 - New forestry offset protocol, based on California
- Next review in 2016



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Regional Greenhouse Gas Initiative: Cap Setting, Allocation, and Price Containment

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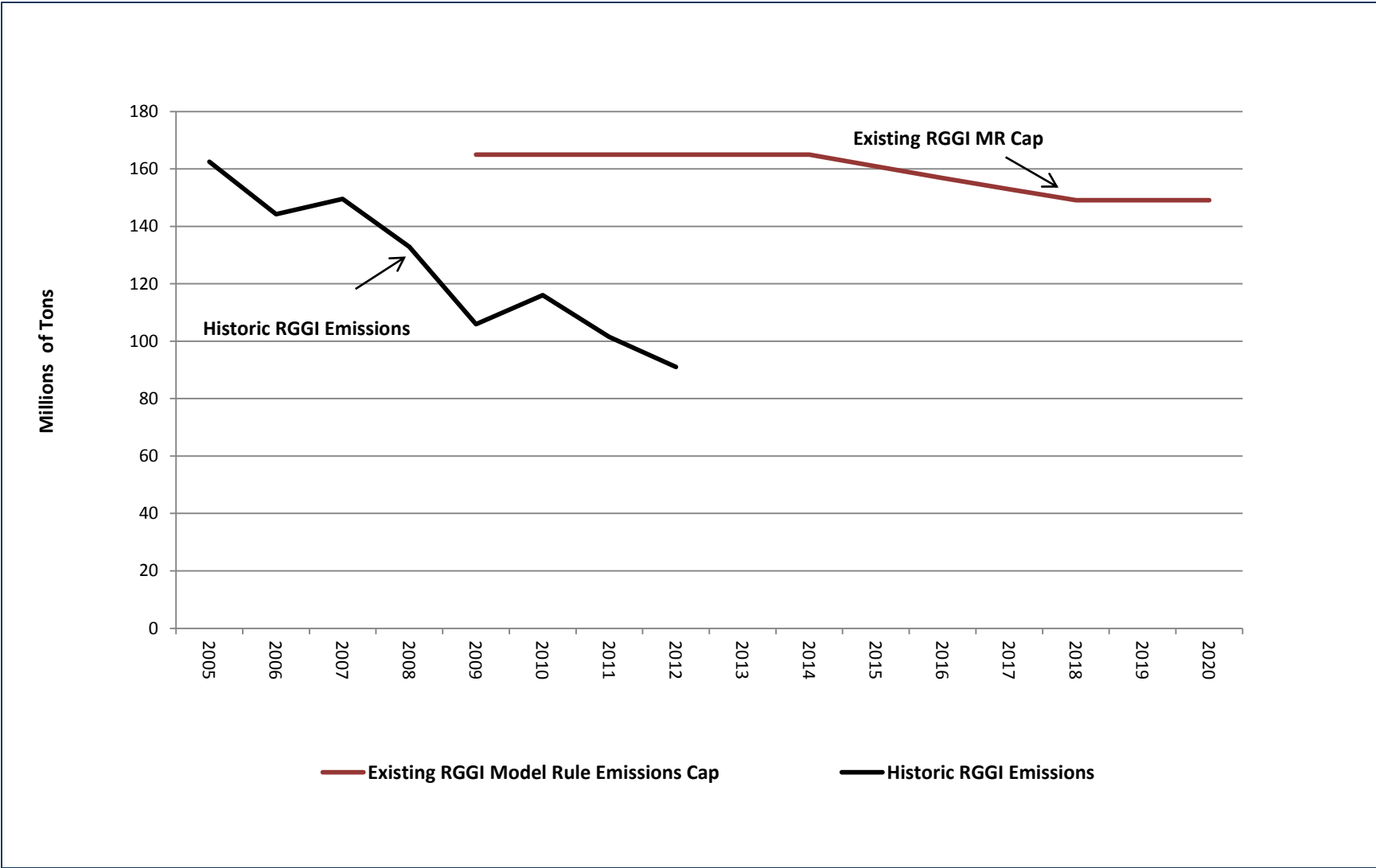
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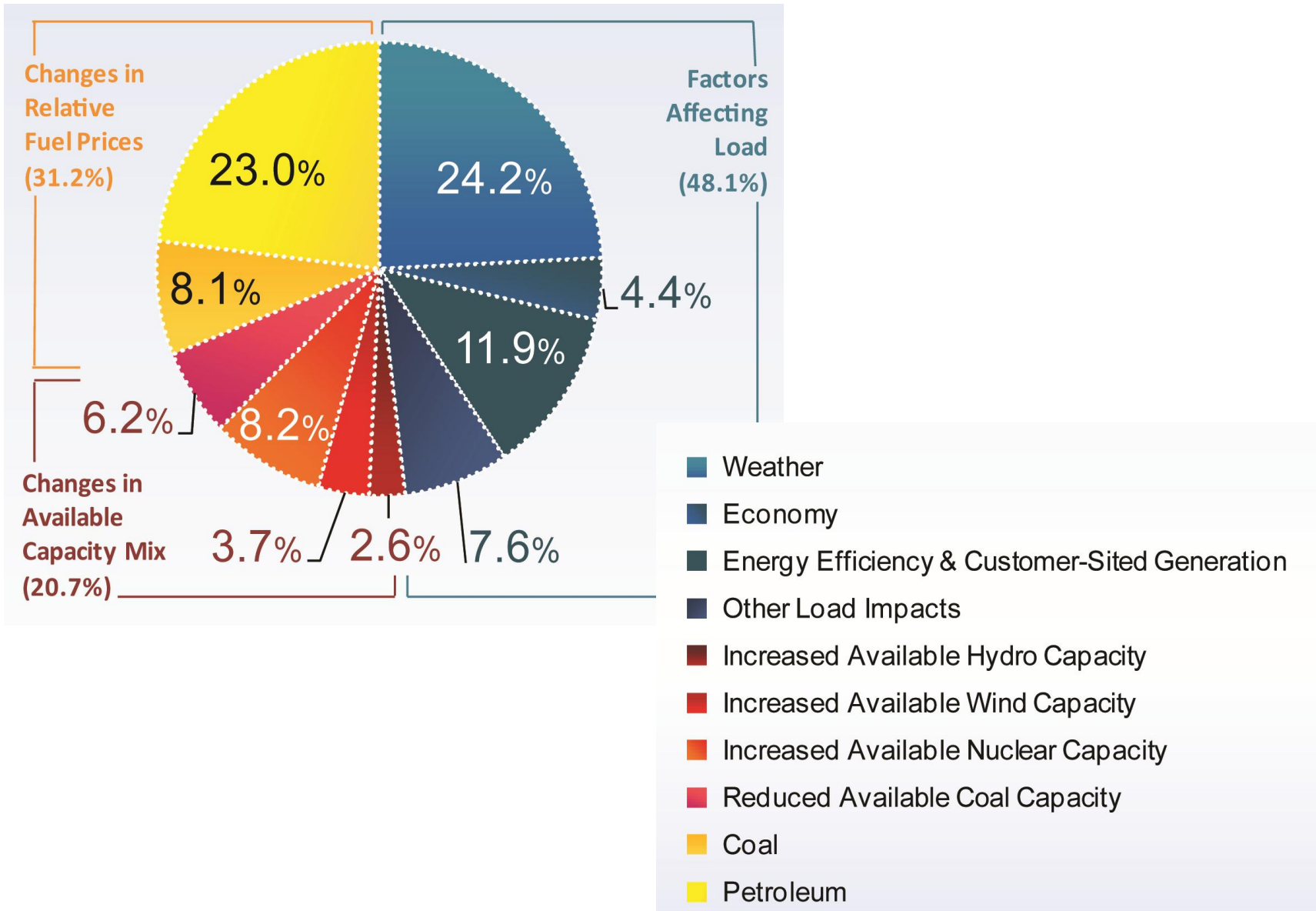


RGGI: Initial Cap

- 188 millions tons across ten states
- Stabilize emissions 2009 – 2014, then reduce 2.5 % per year 2015 - 2018
- Initial cap was based on 2005 projections of 2009 emission
- Allowances apportioned among states based on emissions



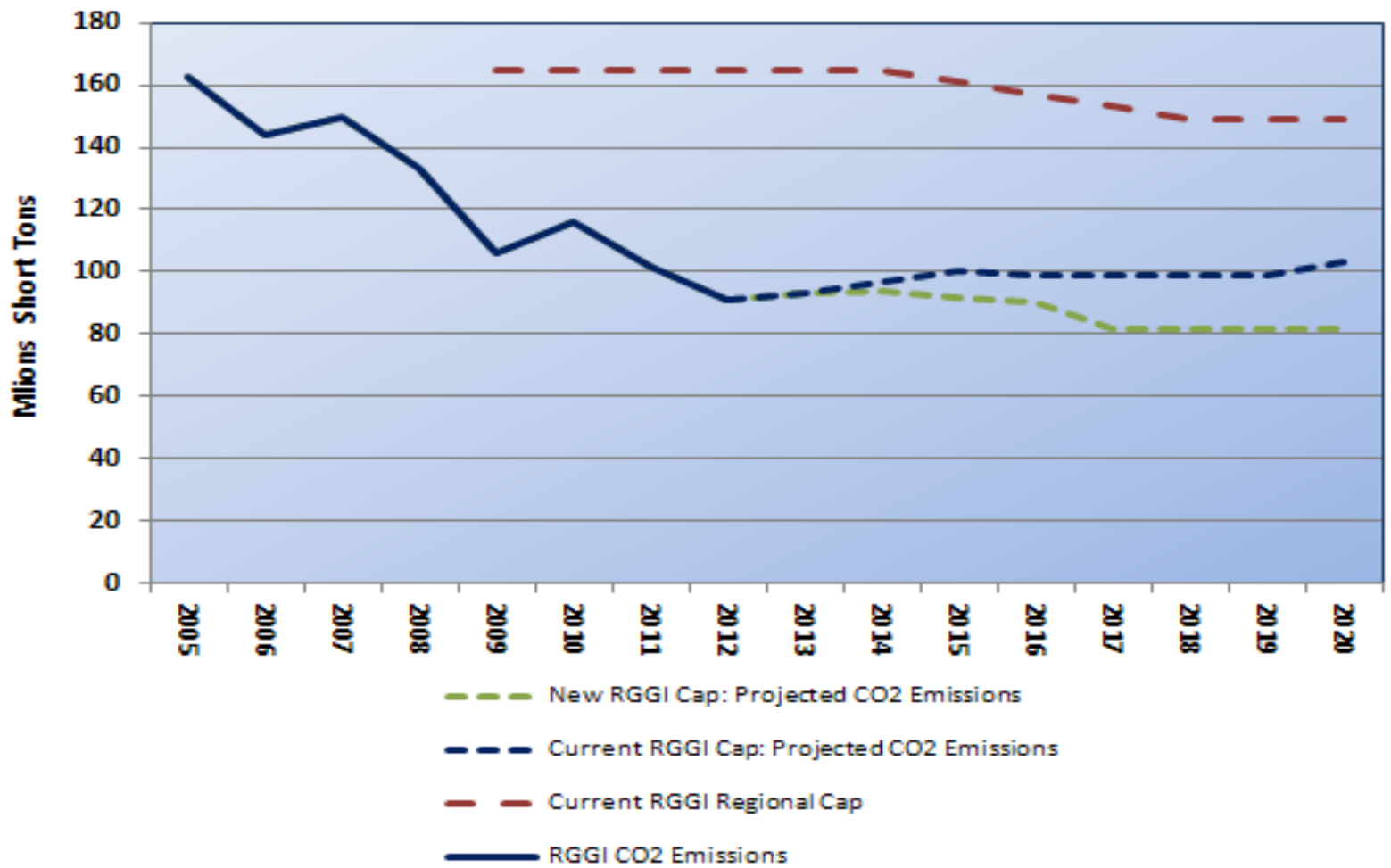




RGGI: Revised Cap

- 91 million tons across 9 states, falling 2.5% per year 2015 – 2020
- Revised cap based on current (2012) emissions and electric sector modeling
- Adjustment for banked 2009 - 2013 allowances
- Cost containment reserve (CCR) of 10 million additional allowances per year



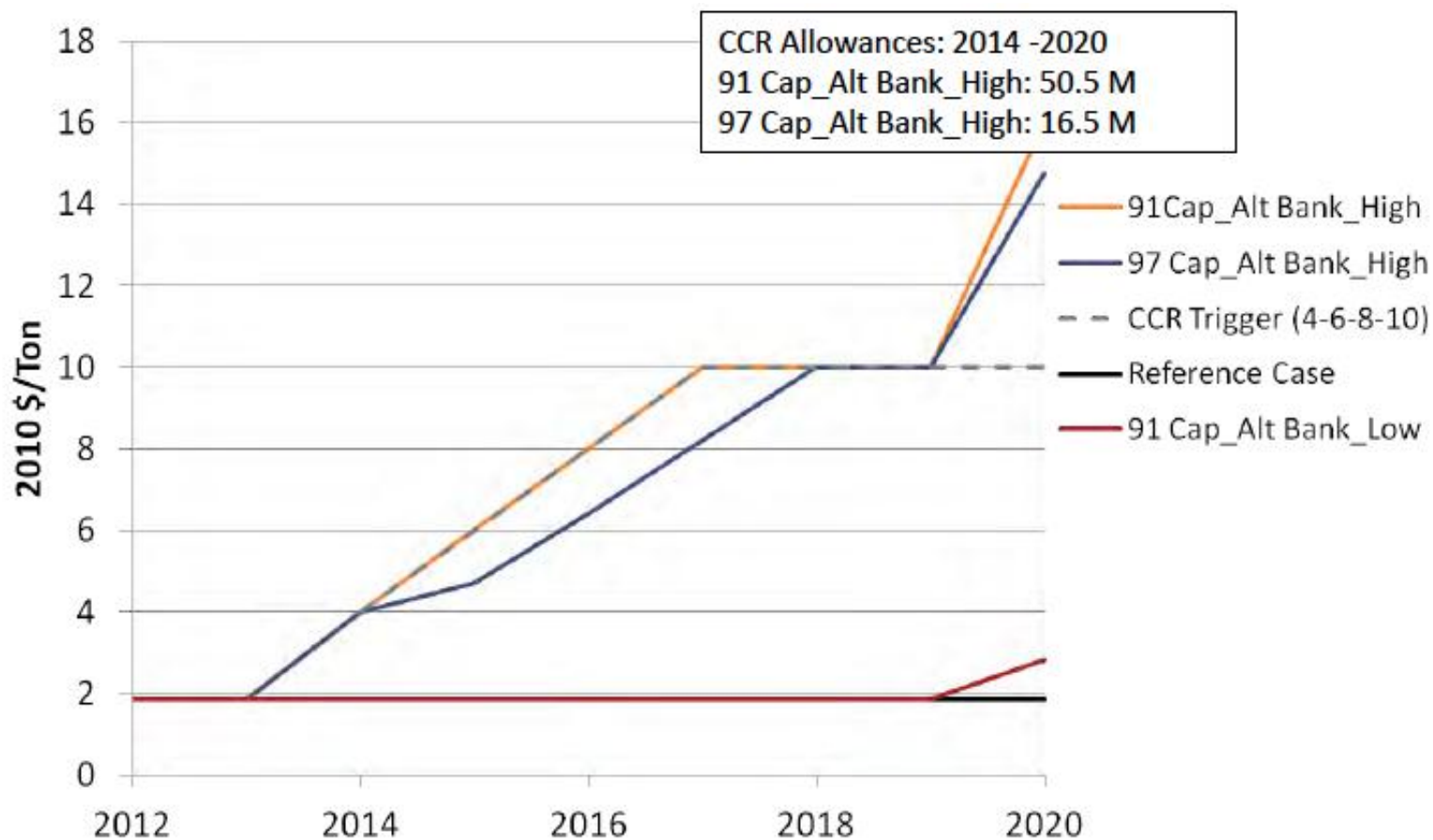


RGGI: Cap setting

- Electric sector modeling to estimate allowance prices for various caps (Using IPM)
- Macroeconomic modeling to estimate impacts on GSP, jobs, etc. (Using REMI)
- Bill impacts analysis



Cap setting: IPM Modeling Results



Cap setting: REMI Modeling Results

Summary of Regional Economic Impacts, 2012-2040

Scenario	91 Cap Bank
Cumulative Change in Gross State Product (\$2010)	\$8.2 Billion
Percent Change from Business-As-Usual	0.0%
Business-As-Usual Regional GSP:	\$48,000 Billion
Cumulative Change in Employment (Job-Years)	124,800
Percent Change from Business-As-Usual	0.0%
Business-As-Usual Regional Employment:	941,000,000
Cumulative Change in Real Personal Income (\$2010)	\$6.8 Billion
Percent Change from Business-As-Usual	0.0%
Business-As-Usual Regional Real Personal Income:	\$43,000 Billion



Cap setting: Bill Impacts

RGGI Average Monthly Bill Impact for years 2012-2020

Customer Class	Reference Case	91 Alt Cap	
	Average Monthly Bill (\$2010)	Monthly Difference (\$2010)	Percent Difference
Residential	\$ 79.68	\$ 0.23	0.3%
Commercial	\$ 593.15	\$ 5.01	0.8%
Industrial	\$ 6,600.67	\$ 64.66	1.0%



RGGI: Allocations

- Nearly all allowances sold at auction
 - Provides revenue for energy efficiency, clean energy, direct bill assistance, climate mitigation and adaptation, program administration, and other uses
 - Two thirds of 2009 – 2011 revenue used for energy efficiency
 - Avoids windfall profits for generators
- Small percentage in set-aside accounts



Massachusetts RGGI Investments by Category

Cumulative-to-Date



TOTAL INVESTED: \$150,383,182

* Massachusetts received \$150,391,182 in auction proceeds through December, 2011. An additional \$8,000 of future auction proceeds is committed to 2012 and future programs.

Massachusetts ranked #1 in the U.S. in the *American Council for an Energy Efficient Economy's* 2011 Scorecard.

The Economic Impacts of the Regional Greenhouse Gas Initiative on Ten Northeast and Mid-Atlantic States

*Review of the Use of RGGI Auction Proceeds from the First
Three-Year Compliance Period*

Paul J. Hibbard
Susan F. Tierney
Andrea M. Okie
Pavel G. Darling

November 15, 2011

1.3
BILLION

in energy bill
savings across
the region¹

1.6
BILLION

in net economic
benefit to region¹

16
THOUSAND
job-years created¹

RGGI: Price Containment

- Cost containment reserve includes up to 10 million allowances per year, above the cap
 - Released if auction prices exceed triggers:
 - 2014: \$4.00
 - 2015: \$6.00
 - 2016: \$8.00
 - 2018: \$10.00
 - 2019 – 2020: increase 2.5% per year
 - Immediate release (at same auction)
- Offsets also provide price containment



Regional Greenhouse Gas Initiative: Cap Setting, Allocation, and Price Containment

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Regional Greenhouse Gas Initiative: Offset Design and Implementation

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RGGI: Offsets

- Purposes of offsets:
 - Lower compliance costs for regulated power plants (because project-based reductions may be cheaper)
 - Incentivize reductions outside of the capped sector
- 3.3% of a facility's compliance obligation can be met with offset allowances
- Cost containment reserve replacing offset trigger mechanism in 2014
- No complete applications received



RGGI Offsets: Process

- Two step application process:
 - Consistency application: Shows that the project is “consistent” with regulations
 - Monitoring and Verification application: Shows that reductions actually occurred
- Offsets allowances are created (above the cap) and deposited in the project sponsor’s account



RGGI Offsets: Categories

- Five project categories:
 - Agricultural manure management
 - Forestry (to be revised for 2014)
 - Landfill methane capture and destruction
 - Reduction in emissions of sulfur hexafluoride
 - Reductions due to end-use energy efficiency
- Specific standards established in regulations
- Other categories to be added in the future?



RGGI Offsets: Forestry

- New standard based on California forestry protocol
 - Reforestation
 - Improved forest management
 - Avoided conversion
- Replacement for existing afforestation category
- Not all states planning to adopt in 2014



Regional Greenhouse Gas Initiative: Offset Design and Implementation

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RGGI: Additional Information

- RGGI web page: <http://www.rggi.org/>
- Massachusetts RGGI implementation: <http://www.mass.gov/dep/air/climate/rggi.htm>
- Contact: william.space@state.ma.us



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