Advancing the Clean Energy Future

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Testimony in Support of S. 1747, S. 1786, S. 1748

Dear Chairmen Golden, Downing, and Members of the Committee:

Acadia Center is a non-profit, research and advocacy organization committed to advancing the clean energy future.

Acadia Center supports S. 1747 & S. 1786 as key proposals to decarbonize the Massachusetts economy and address the threat of climate change. While Massachusetts has made significant progress reducing GHG emissions – particularly in the electric sector[1] – additional measures are needed to drive the transition to a clean energy system across the Commonwealth's economy. Pricing carbon beyond the electric sector is one of the most efficient and comprehensive means of promoting conservation and clean energy, as producers, distributers, and consumers of emitting fuels will have economic motivations to reduce emissions.[2]

Additionally, Acadia Center support s. 1748 to establish statewide GHG reduction requirements for 2030. Having a statewide requirement of 25% reduction below 1990 levels for 2020 has helped Massachusetts develop and implement a range of policies to reduce GHG emissions, encompassed in the Clean Energy and Climate Plan for 2020.[3] The year 2030 is now only 15 years away, and the Commonwealth would benefit from additional clarity and advanced planning on GHG reduction pathways to achieve the 2050 requirement of reducing emissions 80% below 1990 levels. The 35% to 60% target for 2030 considered in S. 1748 is also consistent with a resolution from the New England Governors and Eastern Canadian Premiers to achieve a 35%-45% reduction in GHG emissions by 2030.[4]

In order to support the logic and benefits of carbon pricing, our testimony focuses on the precedents provided by the Regional Greenhouse Gas Initiative (RGGI) and lessons from climate policies implemented in jurisdictions ranging from California to China.

RGGI Experience

The successful RGGI program demonstrates that well-designed climate policy can help to reduce GHG and other emissions[5] without hindering state economies. Fuel-switching, improved energy efficiency and growing renewable

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[1] See: http://climatevision.acadiacenter.org/appendix-state-profiles/massachusetts

[2] Numerous economists and scientists have supported carbon pricing as one of the most efficient means of reducing GHG emissions. See: http://www.carbontax.org/scientists-economists/

[3] Available at: http://www.mass.gov/eea/docs/eea/energy/2020-clean-energy-plan.pdf

[4] Resolution available at: http://www.cap-cpma.ca/data/Signed%2039-1En.pdf

[5] Emissions of sulfur dioxide (SO_2), nitrogen oxides (NO_x), and mercury (Hg) from power plants in the RGGI program have all dropped significantly since the program was launched, and will drop even more under the new RGGI cap. In monetary terms, the reduction in hazardous emissions from 2009 (when RGGI launched) to 2013 translates into $10.4 billion for SO_2 and NO_x alone, and additional reductions in hazardous emissions under the new RGGI cap will lead to an additional $1.6 billion in health savings through 2020. For further detail on RGGI emissions and other information related to RGGI cited in these comments see Acadia

energy output have caused CO_2 emissions to drop significantly since RGGI launched,[6] while electricity prices are lower than they were before RGGI took effect. The rate of pollution reductions continues to outpace expectations, with emissions in 2014 falling 5% below a more stringent cap set just last year.

Contrary to expectations, electricity prices have declined since RGGI took effect. Comparing average retail electricity prices[7] from 2008 (before RGGI's launch) to 2014 shows that prices have dropped by an average of 2% across the region. During the same 2008-2014 period electricity prices in non-RGGI states increased by 13%. While RGGI's precise impact on electricity is difficult to isolate from other factors, it is important to note that the program has not caused electricity prices to increase across the region, and investments in energy efficiency funded by RGGI have helped to reduce consumer bills and wholesale electric prices.

Table 1: RGGI State Electricity Prices, 2008 and 2014 (Cents/kWh)

	CT	DE	MA	MD	ME	NH	NY	RI	VT	RGGI
2008	17.80	12.38	16.23	13.01	13.80	14.63	16.47	16.04	12.33	14.74
2014	16.89	11.36	15.22	12.12	12.63	15.22	16.26	15.54	14.58	14.42
% Change	-5%	-8%	-6%	-7%	-8%	4%	-1%	-3%	18%	**-2%**

The RGGI program has generated significant economic benefits for states participating in the program. By selling allowances (permits to emit CO_2), RGGI states raise revenue to reinvest in energy efficiency, renewable energy, and other consumer programs that increase economic activity in participating states. The majority of program revenue (62% through 2013[8]) has been invested in energy efficiency programs that reduce consumers' bills and reduce demand for power. Lower power demand means fewer emissions from power plants, and less money leaving the region to pay for imported fossil fuels. Consumers' energy bill savings are spent in part within the local economy, benefiting businesses that offer goods and services in the region. Independent macroeconomic analysis found that programs supported with revenue raised over RGGI's first six years of operation would generate over $1.73 billion in energy bill savings. These savings create over $2.76 billion in net economic gains and 28,500 job-years of employment.[9]

Center's *RGGI: A Model Program for the Power Sector,* available at: http://acadiacenter.org/document/rggi-a-model-program-for-the-power-sector-2015-update/.

[6] CO_2 emissions from the 167 power plants covered by RGGI totaled 86,307909 short tons of CO_2 in 2014, which was 5.2% below the 2013 emissions cap of 91,000,000 tons. Acadia Center analysis of emissions data from RGGI, Inc., at: https://rggi-coats.org/eats/rggi/index.cfm?fuseaction=search.rggi_summary_report_input&clearfuseattribs=true.

[7] Energy Information Administration (EIA) 826 Dataset, http://www.eia.gov/electricity/data/eia826/.

[8] RGGI, Inc., 2015, *Regional Investment of RGGI CO_2 Allowance Proceeds, 2012,* available at: http://rggi.org/docs/ProceedsReport/Investment-RGGI-Proceeds-Through-2013.pdf.

[9] These figures are based on the combined findings from two separate reports from the Analysis Group, the first of which covered impacts from 2009 through the first half of 2011 (New Jersey impacts have been excluded from this analysis), the second report covering 2012-2014. As a result, the combined benefits included above only account for five and a half years of revenue reinvestment, rather than the full six years from 2009-2014.

Declining Emissions, Growing Economies

As the regional economy has become less energy-intensive and efficiency investments have increased, the relationship between economic growth and emissions has broken, and emissions in RGGI states have declined faster than in other states, even as economic growth in the region has outpaced growth in non-RGGI states (see figure below). From 2009 (the year RGGI began) to 2014, emissions in the RGGI region dropped by 35% versus 12% in other states. Over the same period, RGGI states' economies grew by 21.2% versus 18.2% in other states.

Figure 5: Emissions in RGGI States versus Other States

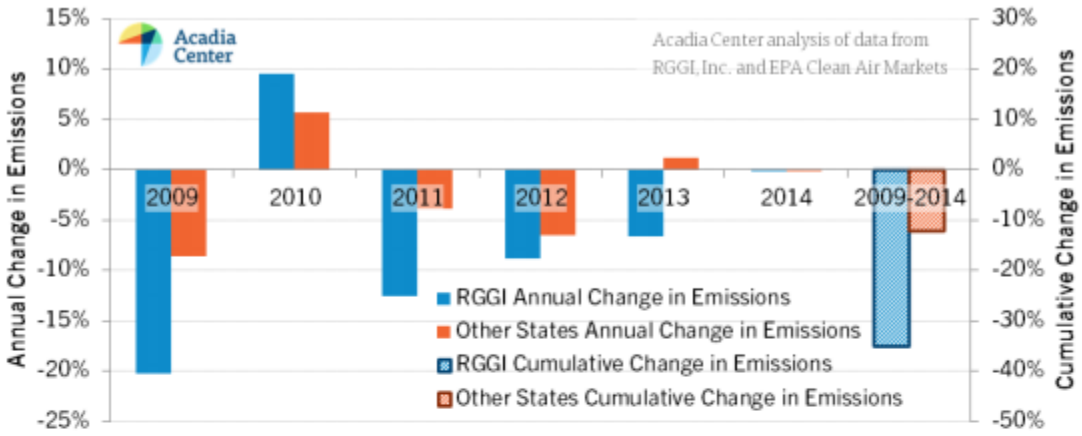
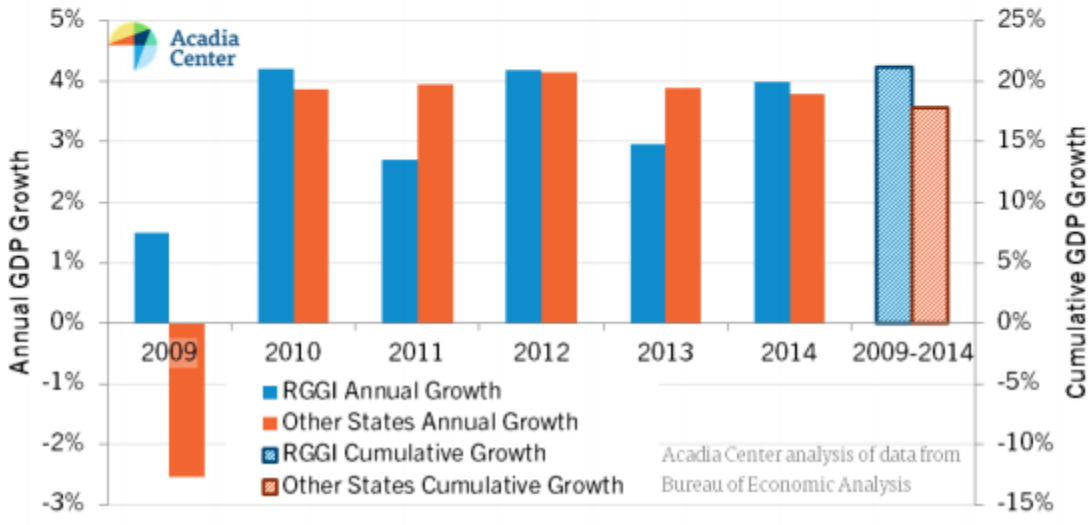


Figure 6: GDP Growth Rates in RGGI States versus Other States



This trend represents a fundamental shift from earlier periods when economic development was linked to increasing energy use and climbing emissions. The experience is similar in California, which implemented economy-wide carbon pricing in 2013. California's approach is most similar to the carbon pricing approaches proposed in S. 1747 & S. 1786. Specifically, California prices carbon in the transport, industrial and heating fuels sectors. S. 1747 & S. 1786 would cover similar sectors, while leaving RGGI in place to control power sector emissions. California's experience with economy-wide carbon pricing is encouraging. In 2013 the California economy grew by 2%, and job growth outpaced the rest of the country, while emissions from regulated entities dropped by 4%.[10]

Global Context

By implementing economy-wide carbon pricing, Massachusetts would be taking leadership strides *and* building on global momentum. According to the World Bank, almost 40 countries and more than 20 states, cities and other jurisdictions have developed or implemented policies to price carbon. When paired with additional countries considering carbon pricing, almost half of global emissions come from jurisdictions already placing a price on carbon or planning to do so.[11]

Even China – the world's largest GHG emitter – is developing a national carbon pricing program to take effect in 2016. With China moving forward, and a global climate accord likely to emerge later this year, the argument no longer holds that single states or countries should not act alone. Carbon pricing is taking root around the globe, and implementing economy-wide carbon pricing in Massachusetts will position the Commonwealth to benefit from developing, implementing, and selling clean energy innovations while showing meaningful leadership in addressing climate change.

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[10] EDF, 2015, *Carbon Market California: A Comprehensive Analysis of the Golden State's Cap-and-Trade Program*, at: http://www.edf.org/sites/default/files/content/carbon_market_california_year_two_executive_summary.pdf
[11] See: http://www.worldbank.org/en/programs/pricing-carbon