

Testimony of

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Thank you Chairman Inhofe, Ranking Member Boxer, and other members of the committee for inviting me to testify this morning. As Deputy Commissioner for Energy at the Connecticut Department of Energy and Environmental Protection, and as the Chair of the Regional Greenhouse Gas Initiative (RGGI), Inc. Board of Directors, I appreciate the opportunity to share Connecticut's experiences in addressing climate change and strengthening our energy system.

While the Clean Power Plan (CPP) is under litigation, Connecticut continues to move forward in building a reliable low-carbon electric system. Climate change remains a serious issue facing my State. To safeguard the economy, the environment, and the reliability of our grid, Connecticut has been a leader in implementing programs that reduce harmful greenhouse gas pollution while encouraging innovation, boosting clean energy, and generating savings for local families and businesses.

Connecticut is proud to be a charter member of the Regional Greenhouse Gas Initiative, the nation's first market-based, multi-state regulatory program to reduce carbon pollution from the power sector. Connecticut is one of nine states participating in RGGI, along with Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont. The RGGI program caps emissions by determining a regional budget of CO₂ allowances, and then distributes a majority of the CO₂ allowances through regional auctions so that the states may reinvest the value of the allowances into strategic programs. Collectively, the nine RGGI participating states represent 16 percent of the U.S. economy and generate a total gross domestic product of 2.4 trillion U.S. dollars.ⁱ

Through our participation in RGGI and other climate change mitigation programs, Connecticut's experience has shown that significant reductions in carbon pollution (such as those that the CPP will require) can be achieved affordably and reliably. Collectively, the RGGI states have already reduced power sector carbon pollution by over 45 percent since 2005, while at the same time transitioning to a cleaner energy system. The RGGI states' use of non-hydro renewables has increased by 74 percent, and in 2014 the RGGI states produced about half of their power from clean or renewable sources.ⁱⁱ As a group, the RGGI states are on track to reduce our power sector

carbon pollution to 50 percent below 2005 levels by 2020. This reduction in emissions goes well beyond the projected national reductions under the CPP, and does so within a shorter timeframe.

Our experiences with RGGI and with other climate change mitigation programs in Connecticut have been accompanied by consumer savings, economic growth, and reliable power. In Connecticut, as of 2013 we have achieved a ten percent reduction in emissions from 1990 levels economy-wide, while our population has grown nine percent, and our GDP increased by 44 percent. We see similar progress in all RGGI states. While power sector carbon pollution declined by 45 percent in the RGGI states since 2005, the region's GDP has grown by 8 percent [see Appendix, Graph 1]. Independent reports by the Analysis Group have found that the RGGI program produced net economic benefits in each and every RGGI state. A 2015 Analysis Group report concluded that RGGI's second three-year period (2012-2014) is adding \$1.3 billion in net economic benefit to the region, creating 14,200 job-years, and generating \$460 million in consumer energy bill savings.ⁱⁱⁱ These benefits come in addition to findings from the program's first three-year period (2009-2011), which is adding \$1.6 billion net economic benefit, 16,000 job-years, and \$1.3 billion in consumer energy bill savings.^{iv}

This track record demonstrates that climate action and economic progress are not just compatible, but complementary. And, real benefits to residents in Connecticut and the RGGI region go beyond the factors just described. The economic findings by the Analysis Group do not include the benefits of avoided climate change, or improvements to public health. If these factors were taken into account, the reported economic benefits would be far higher. Cleaner air is critical to safeguard the health of our families. One study by the Clean Air Task Force found that the RGGI region's transition to a clean energy economy is saving hundreds of lives, preventing thousands of asthma attacks, and reducing medical impacts and expenses by billions of dollars.^v

A 2015 peer-reviewed study also concluded that RGGI is playing a significant role in the region's reduction in carbon pollution.^{vi} The RGGI program works in tandem with complementary policies and market trends to reduce pollution and establish long-term solutions for a reliable energy system. These complementary policies include utility-administered energy efficiency programs and renewable portfolio standards, which are common across the country. Market forces are driving further reductions, by encouraging fuel-switching to less carbon-intensive fuels.

Across the region, RGGI's 32 auctions have generated over \$2.5 billion in proceeds. The reinvestment of RGGI auction proceeds in clean energy and consumer benefit programs is driving a virtuous cycle, further reducing carbon emissions and reinforcing these benefits. Through 2013, the RGGI states reinvested over \$1 billion in auction proceeds in energy efficiency, clean and renewable energy, and other strategic energy programs. More than 3.7 million households and 17,800 businesses participated in programs funded through these investments.^{vii} Connecticut accounted for more than \$84 million of this regional investment, with a significant percentage of

the State's auction proceeds directed toward energy efficiency projects and clean and renewable energy.

In Connecticut, the reinvestment of auction proceeds has helped fund innovative programs that are harnessing market forces and competition to scale clean energy deployment at the lowest cost. Under the leadership of Governor Malloy, our State established the nation's first Green Bank, a quasi-public organization that leverages limited public dollars to attract private investment in clean energy in the State. The Connecticut Green Bank has used RGGI proceeds to help fund projects such as the development of solar photovoltaic (PV) and fuel cell installations in commercial, municipal, non-profit, and educational settings, and the installation of residential solar PV systems. The Green Bank has also partnered with the Connecticut Energy Efficiency Fund and incorporated RGGI proceeds in the Clean Energy Communities Program, encouraging Connecticut cities and towns to reduce their municipal building energy consumption. Funded through RGGI proceeds and ratepayer contributions, the Connecticut Energy Efficiency Fund's investments in energy efficiency and peak demand reduction in 2014 resulted in annual energy savings of 387.8 million kilowatt hours, and will avoid 3.2 million tons of carbon pollution over the lifetime of the efficiency improvements.^{viii} Connecticut's energy efficiency investments planned for the next three years will reduce carbon emissions by 459,174 tons per year, and save enough energy to power a 262 megawatt power plant. These investments are lowering customers' bills, and securing our state's long-term energy future.

Climate change and aging infrastructure pose threats to our economy and to the electric grid. The 2014 National Climate Assessment projected global sea levels to rise between one and four feet by 2100. It found that even without any increase in storm strength, two feet of sea level rise would more than triple the frequency of dangerous coastal flooding throughout most of the Northeast.^{ix} Extreme precipitation is also on the rise in the Northeast: we've seen an increase of over 70 percent in the amount of precipitation falling in very heavy events, a trend which is projected to continue. My State's Climate Preparedness Plan has warned of negative climate change impacts to Connecticut's agriculture, infrastructure (especially coastal infrastructure), natural resources, and public health.^x This is why our State has set a long-term target to reduce greenhouse gases across all sectors to 80 percent below 2001 levels by 2050, and why Governor Malloy has made a commitment to limit global temperature increases to two degrees Celsius by signing on to the Under 2 MOU.

The 2015 Quadrennial Energy Review found that severe weather is the leading cause of power disruptions, costing the U.S. economy from \$18 billion to \$33 billion a year.^{xi} A new report on the health impacts of climate change by the US Global Change Research Program (USGCRP) underscores that these power disruptions can have cascading effects on the economy and human health. The report projects an increase in disruptions to the food supply chain. In particular, it cites

a statistically significant increase in human illness relating to food spoilage following the NY blackout of 2003.^{xii}

We have experienced these adverse climate impacts in Connecticut, resulting in direct costs to our citizens and businesses. According to our Department of Insurance, properties along the Connecticut coastline are collectively valued at over \$570 billion; insurance companies paid nearly \$1 billion for 200,000 covered claims as a result of five major storms in 2011 and 2012, including an unusual Halloween nor'easter, Tropical Storm Irene, and Superstorm Sandy. The cost of restoring power and rebuilding electric distribution lines damaged in those storms has reached to the hundreds of millions of dollars.^{xiii}

As Deputy Commissioner for Energy, I believe that reliability and affordability of energy are of utmost importance in implementing any carbon reduction program. RGGI helps manage these threats by reducing harmful emissions, and supporting reliability through energy efficiency, peak demand reduction, and other strategic investments. Investments funded through RGGI have advanced reliability goals in the region, even as our generation mix has changed and become cleaner.

Connecticut's experience with the feasibility of significant power sector pollution reduction is affirmed by analysis from experts. For example, MJ Bradley, a consulting firm whose client base includes electric and natural gas utilities, major transportation fleet operators, and government agencies, recently conducted a modeling report on the CPP. They concluded that the CPP's targets are "very achievable" across a wide range of scenarios and assumptions.^{xiv} Industry voices have also affirmed that continued reductions in power sector carbon pollution are achievable and affordable. Power generators Calpine, PG&E, and National Grid were joined by Austin Energy and Seattle City Light in filing a motion to intervene in support of the CPP. Their filing states, "The Power Companies support the Clean Power Plan because it will harness market forces to hasten trends that are already occurring in the electricity sector... the Power Companies have reduced CO₂ emissions within their respective generation fleets and portfolios. Their collective experience achieving those reductions demonstrates the achievability and reasonableness of the CPP."^{xv}

Many experts have further said that the CPP simply reinforces economic trends which are already underway. The North American Electric Reliability Corporation (NERC)'s Phase II report on reliability and the CPP found that integration of a large amount of renewables is likely to occur with or without the CPP, and major new transmission and infrastructure investments are also likely to be needed in either case. NERC found that with or without the CPP, the needed investments are significant enough that planning should begin without delay. In line with this reasoning, many states, utilities, and businesses are continuing to plan for a low-carbon energy system irrespective of the Supreme Court stay on the CPP.

Both expert analysis and common sense indicate that planning ahead is the most cost-effective path forward, and EPA can provide tools to help states do so. In April, Connecticut joined with environmental officials from thirteen other states in sending a letter to EPA requesting that the agency provide additional information and technical assistance related to the final Clean Power Plan in a manner that is respectful of the Supreme Court's stay of the regulations until the conclusion of pending litigation.^{xvi} In the letter, we requested a final model rule or rules, as well as additional information on the Clean Energy Incentive Program; tracking systems for allowances or credits; and energy efficiency evaluation, measurement, and verification, along with appropriate technical assistance related to this additional information.

Two especially important tools are the CPP's Federal Plan (FP) and Model Rule (MR). The RGGI states have submitted joint comments highlighting key opportunities for EPA in the FP and MR.^{xvii} When final, the FP and MR will provide important guidance to states planning for compliance with the CPP, or for a low-carbon energy future in general. Among other suggestions, the RGGI states have recommended to EPA that the FP should consist of a mass-based program, and should encourage the auctioning of allowances and the reinvestment of auction proceeds. RGGI's success story, along with a wide range of independent expert research, support the fact that this is the most cost-effective, transparent, and reliable way to achieve emissions reductions.

Of course, the relevance of a model rule and this other information will ultimately depend on the outcome of litigation. As we joined other states in expressing in the April letter, however, Connecticut would find the information helpful and important in the near term to help us prudently carry out a variety of planning and regulatory activities to meet our own state obligations and policy goals. A model rule and the other information that we requested would not impose any new requirements on states or other parties, but would rather provide more information about what kind of state plans would be approvable should the Clean Power Plan be upheld.

This information would also inform our decision making in a number of other contexts where we are taking action now to meet our own state goals and obligations, and where we have other deadlines that do not allow us to wait until Clean Power Plan litigation is resolved. For example, in Connecticut, we are working through the Governor's Council on Climate Change to explore mid-term targets for reduction of GHG emissions as required under the state's Global Warming Solutions Act. Through that effort, we are evaluating emission reduction strategies and recommending policies to meet those goals, as directed by Governor Malloy's Executive Order No. 46. Just this month, we initiated the process for our State's Comprehensive Energy Strategy, in which we will be evaluating the performance of the electricity generation sector and making resource planning recommendations to ensure cleaner, cheaper, more reliable electricity opportunities. We are engaging in dialogues with market participants, other state regulators, and our regional system operator (ISO-New England) to assess potential changes to market rules to

better accommodate state public policies in the design of our competitive wholesale electricity markets. We are also planning for how to meet both the current and new ozone standards. The entire State of Connecticut fails to meet the 2008 ozone standard – in fact, last month EPA “bumped up” Connecticut to next worse designation. We are in the process of determining our obligation under the new more stringent ozone standard. To make progress towards meeting both standards, we will need additional reductions from power plants, both in state and out of state.

In all of these contexts, having better information about how Connecticut and other states could comply with the Clean Power Plan will help our State make prudent decisions. We believe that EPA can provide such information in a way consistent with the stay, similar to the changes that it made to the Cross State Air Pollution Rule when it was subject to a stay.^{xviii} In particular, a final model rule or rules will provide states like Connecticut with a clear model or models of an approvable plan. It would also help us understand how other states might comply with the Clean Power Plan if it is upheld, which is important given the interconnected nature of the electricity system and electricity markets. This information will help our State evaluate the potential impacts to our residents, power companies, and others under different Clean Power Plan scenarios. Connecticut has joined other states in asking EPA for additional information so that we can make the best-informed decisions today in a way that will reduce carbon emissions in Connecticut, improve public health, maintain a reliable and low-cost electricity -system.

Together with the other RGGI states, we are continuing to plan ahead by moving forward with our comprehensive 2016 RGGI Program Review. The RGGI program review process began in November 2015 and will continue through this year, culminating in an update of our RGGI Model Rule. The program review process offers an opportunity to consider program design elements and successes, stakeholder and expert input, as well as considerations for CPP compliance. The RGGI states’ CPP targets are among the most ambitious in the country, and our states are well-placed to achieve them thanks to our existing market-based program and complementary policies. Our states’ commitment towards reducing harmful greenhouse gases remains unchanged.

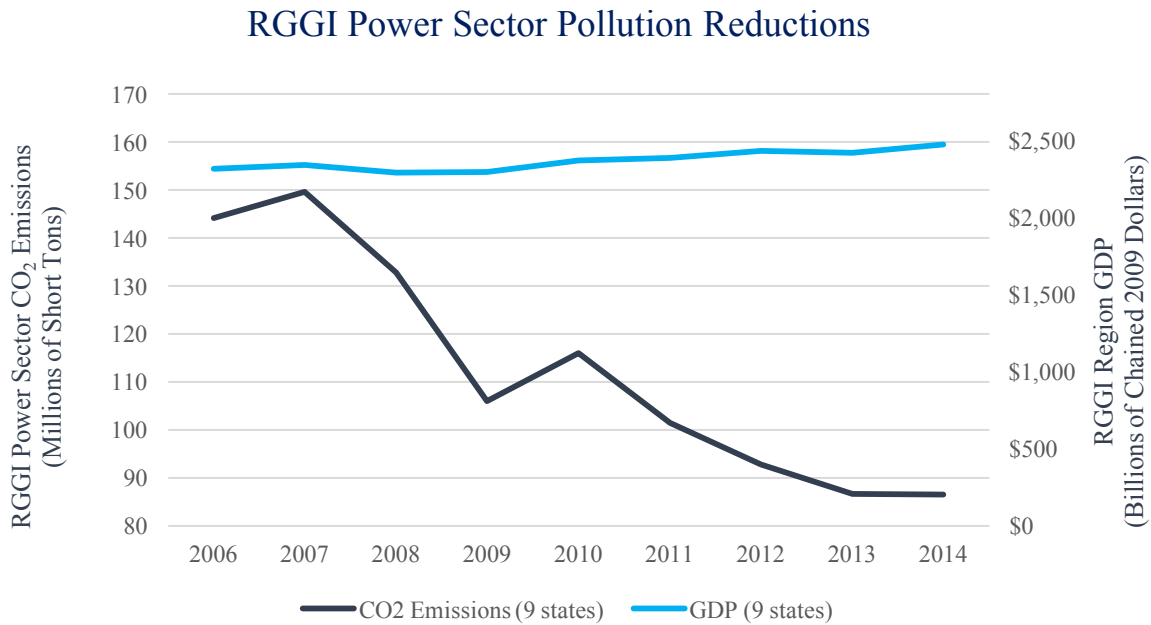
Multi-state approaches like RGGI have been repeatedly found to be the most cost-effective pathway to reduce harmful carbon pollution. Within the RGGI states, pollution reductions can be achieved where costs are lowest. Furthermore, the iterative process afforded by regular program review allows implementation to move forward in the near term, while still allowing the program to be continually improved in response to new information. Stakeholders and experts have valuable feedback to offer, and updated modeling can provide helpful context for discussion of program improvements. This flexibility increases the effectiveness of the program.

The Clean Power Plan supports multi-state cooperation to reduce power sector carbon pollution, offering many pathways by which groups of states can work together. Based on

Connecticut's experience participating in RGGI, I believe that it is important for states to begin and continue planning for the most cost-effective path to a low-carbon energy system, to ensure the best outcome in terms of cost and reliability. We look forward to sharing our success story to assist any other stakeholders, states, or regions who are interested in learning more. I again thank the Committee for the opportunity to testify.

Appendix

Graph 1:



ⁱ [BEA, Real GDP by State.](#)

ⁱⁱ [EIA, Detailed State Electricity Data](#)

ⁱⁱⁱ [“The Economic Impacts of the Regional Greenhouse Gas Initiative on Nine Northeast and Mid-Atlantic States: Review of RGGI’s Second Three-Year Compliance Period.”](#) The Analysis Group, 2015.

^{iv} [“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.”](#) The Analysis Group, 2011.

^v Banks, Jonathan and David Marshall. [“How science, advocacy and good regulations combined to reduce power plant pollution and public health impacts; with a focus on states in the Regional Greenhouse Gas Initiative.”](#) Clean Air Task Force, 2015.

^{vi} Murray, Brian and Peter T. Maniloff. [“Why have greenhouse emissions in RGGI states declined? An econometric attribution to economic, energy market, and policy factors.”](#) *Energy Economics*. 2015.

^{vii} [“Investment of RGGI Proceeds Through 2013.”](#) RGGI, Inc., 2015.

^{viii} [“Connecticut Energy Efficiency Board 2014 Programs and Operations Report.”](#) Connecticut Energy Efficiency Fund, 2015.

^{ix} [“Climate Change Impacts in the United States: The Third National Climate Assessment: Northeast.”](#) USGCRP. 2014.

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- ^x [Connecticut Climate Change Preparedness Plan](#). 2011.
- ^{xi} [Quadrennial Energy Review](#). US Department of Energy, 2015.
- ^{xii} “[Impact of Climate Change on Human Health in the United States: Food Safety, Nutrition, and Distribution](#).” USGCRP. April 2016.
- ^{xiii} Insurance Information Institute, <http://www.iii.org/article/connecticut-hurricane-insurance-fact-file>.
- ^{xiv} “[EPA’s Clean Power Plan: Summary of IPM Modeling Results With ITC/PTC Extension](#).” MJ Bradley. June 2016.
- ^{xv} “[Unopposed Motion of Calpine Corporation, the City of Austin D/B/A Austin Energy, the City of Seattle, by and Through Its City Light Department, National Grid Generation, LLC, and Pacific Gas and Electric Company for Leave to Intervene in Support of Respondents](#).” 2015.
- ^{xvi} California, Colorado, Delaware, Maryland, Massachusetts, Minnesota, New Hampshire, New York, Oregon, Rhode Island, Vermont, Virginia, Washington. Letter from 14 State Environmental Officials to EPA Acting Assistant Administrator Janet McCabe Requesting Additional Information on the Clean Power Plan, Apr. 28, 2016, <http://www.georgetownclimate.org/states-ask-epa-to-provide-model-rule-other-information-on-clean-power-plan>.
- ^{xvii} “[RGGI States’ Comments on Proposed Federal Plan and Model Trading Rules for the Clean Power Plan](#).” RGGI, Inc. January 2016.
- ^{xviii} EPA’s February 21, 2012, final revision rule made changes to the Cross State Air Pollution rule and federal plan while the rule was stayed by order of the D.C. Circuit Court of Appeals. In that action, EPA revised budgets for specific states based on updated modelling assumptions and made other changes. EPA noted that the action was “consistent with” and “unaffected by” the stay order and that it did not impose any requirements in and of itself on regulated units or states. Cross State Air Pollution Rule Final Revisions Rule, 77 Fed. Reg. 10,324, 10,326 (Feb. 21, 2012). EPA also proposed and finalized other changes to the rule during the stay, *see* Cross State Air Pollution Rule June Revisions Rule, 77 Fed. Reg. 34,830 (June 12, 2012).