



May 26, 2016

VIA ELECTRONIC MAIL

Governor's Council on Climate Change
Analysis, Data & Metrics (ADM) Working Group
Email: deep.climatechange@ct.gov

RE: Comments of the Sierra Club to the ADM Working Group

Dear Members of the ADM Working Group:

On behalf of the Sierra Club and its more than 8,000 members in Connecticut, thank you for the opportunity to provide comments regarding the Analysis Data & Metrics (ADM) Working Group's May 5, 2016 meeting. As emphasized in prior comments, we applaud the work of the Governor's Council on Climate Change (GC3) and the analysis that the ADM Working Group is undertaking to proactively plan to meet Connecticut's long-term climate goals. We greatly appreciate Governor Malloy's leadership in creating the GC3 and in providing it with the resources necessary to effectively achieve its mission. As the ADM Work Group's modeling illustrates, Connecticut will need to aggressively address climate pollution from all sectors concurrently in order to meet both its short- and long-term climate goals. The benefits of working across sectors are synergistic, with decarbonization of the electric sector dramatically amplifying the benefits of electrifying transportation and building heating and cooling, and enhancements in energy efficiency increasing the ease of meeting climate targets while reducing compliance costs.

The comments below express appreciation for the scenario development undertaken by the ADM Working Group to date and offer recommendations for putting into practice the lessons learned to date from this modeling work. The Sierra Club also notes that, while the focus of the ADM Work Group's analysis to date appears to have been on carbon dioxide, the most prevalent greenhouse gas, in planning for long-term climate mitigation, it is critical to consider the impact of methane, a more potent greenhouse gas, as well. Many of the strategies identified in the ADM Working Groups scenario analysis will have the impact of reducing methane emissions as well as carbon dioxide. However, these methane-specific impacts should be more fully evaluated.

I. Comments

A. The Sierra Club Strongly Supports the ADM Working Group's Scenario Development to Understand the Changes Necessary to Achieve Connecticut's Long-term Climate Goals

Critical to any effort to achieve a long-term climate vision for Connecticut is an understanding of the transformative change that this vision truly entails. The scenario

development undertaken using LEAP to identify a group of measures that would achieve Connecticut’s long-term 80% by 2050 climate target is commendable and highlights just how transformative the change in our economy must be. Connecticut’s goal was reached—but not exceeded—in a scenario in which, by 2050, 90% of all light-duty cars and trucks, 80% of commercial trucks, 60% of short haul trucks, and all passenger and freight rail were electrified, natural gas efficiency was increased five-fold and electric efficiency was increased ten-fold, oil furnaces and gas radiators were entirely phased out and replaced by air and ground source heat pumps, gas and oil water heaters were entirely phased out and replaced by solar water heaters, all generation to meet increased electric load came from solar, onshore wind and demand response, and no new natural gas plants were constructed in Connecticut after 2020.

Such transformative changes are not going to happen overnight. However, the magnitude of the necessary transformation underscores the need to evaluate energy decisions being made today for their consistency with this longer-term vision. As detailed below, we believe there are a number of near-term opportunities for the State of Connecticut to make significant progress toward actualizing a scenario that is compatible with Connecticut’s long-term goals. The flipside is that these same near-term decision points, if approached in a short-sighted manner, could impede Connecticut’s ability to reach its goals or significantly increase the cost of doing so.

B. The Current RGGI Program Review Provides the Best Opportunity to Ensure Connecticut’s Electric Sector Is on Track to Meet the State’s 2050 Climate Goals

One of the challenges of shaping electric sector climate emissions in a deregulated electric power market is the limited opportunity for prospective integrated resource planning. No centralized commission reviews resource procurement decisions or plant retirements for their consistency with climate or other policy goals. Connecticut, to its great credit, together with the other states in the region has created a construct in the Regional Greenhouse Gas Initiative (RGGI) through which it can shape the development of the electric sector in the coming decades to ensure its compatibility with Connecticut’s climate vision. Paired with statutorily-authorized resource procurements, RGGI provides a critical tool for Connecticut to foster the development of carbon- and methane-free resources and lock in an emission trajectory for the electric sector that phases down climate emissions consistent with Connecticut’s mid- and long-term goals.

As the Measures & Technologies table notes, large-scale renewable generation is one of a handful of measures that has “large” potential to produce further greenhouse gas (GHG) reductions.¹ Sierra Club, in its prior comments² detailed the results of an analysis by Synapse Energy Economics,³ which looked at the share of emission reductions that each sector would bear in meeting a 40% reduction in GHG emissions from 1990 levels by 2030 across the RGGI region in a least-cost manner. Consistent with numerous other analyses,⁴ the Synapse report

¹ Measures & Technologies for modeling in the Long range Energy Alternatives Planning System (LEAP) (May 5, 2016).

² Comments of the Sierra Club to the ADM Working Group (Mar. 31, 2016).

³ Synapse Energy Economics, The RGGI Opportunity 2.0: RGGI as the Electric Sector Compliance Tool to Achieve 2030 State Climate Targets (updated Mar. 4, 2016).

⁴ Clarke *et al.* (2014) summarized the results of nine top energy-environment-economy models looking at reducing economy-wide domestic greenhouse gas emissions by 50% and 80% by 2050. Leon E. Clarke et al., Technology and

concluded that the electric sector must lead on emission reductions, and will need to decline by an average of 5% per year between 2020 and 2030 to put the region on track to meet its climate goals. Synapse also found that pursuing this least-cost buildout to 40% by 2030 would yield significant economic benefits to Connecticut and the region as well. As a result of the modeled energy investments, the RGGI states would achieve \$25.7 billion in total savings while adding an average of 58,400 job-years per year. Connecticut would see carbon emissions from natural gas, buildings, and transportation decline, while adding thousands of jobs in the renewable and electric and gas energy efficiency sectors.

In the context of the ongoing RGGI program review, we urge Connecticut to ensure that the RGGI states model a robust array of policy scenarios, including a scenario in which the RGGI cap declines by 5% per year between 2020 and 2030—consistent with the findings of the Synapse analysis. We also urge Connecticut to push for selection of a cap level that is consistent with its own and other states’ mid- and long-term climate goals. Indeed, given Connecticut’s commitment to achieving its own state climate goals, ensuring an appropriately stringent RGGI cap is absolutely critical. Whatever actions Connecticut unilaterally takes to address in-state electric sector climate pollution, if paired with a lax RGGI cap, they will simply shift emissions to other less proactive states, thereby undermining overall climate progress and siphoning revenue out of the state.

We also offer two specific recommendations regarding both the reference case modeling that the RGGI states are undertaking and the modeling that the ADM Working Group is engaged in. First, as detailed in comments submitted to RGGI earlier this month,⁵ load forecasts for New England should be based on the most current ISONE projections: the 2016 CELT. It appears from the ADM Working Group’s May 5th presentation (slides 19 and 22) that Connecticut is relying on data from the 2015 CELT. Importantly, whereas the 2015 CELT concluded that (once energy efficiency, demand response and behind the meter solar are incorporated) annual load growth from 2015 to 2024 would be essentially flat in New England, the 2016 CELT projects that annual load growth in New England will be negative, declining by 0.25% per year between 2016 and 2025. This is a substantial revision of the load forecast—one with major ramifications for both the cost and feasibility of achieving Connecticut’s long-term climate goals. Both the RGGI reference case modeling and the ADM Working Group modeling should incorporate these updated load forecasts.

Second, we were surprised to see Bridgeport Unit 3 identified as “at risk” in the ADM Working Group’s presentation.⁶ Recent developments have established a firm retirement date for this unit. Specifically, the plant’s owner, PSEG, successfully bid a new combined cycle natural gas unit into ISO New England’s Forward Capacity Auction 10 (FCA10).⁷ Pursuant to a Community Environmental Benefits Agreement between PSEG and the City of Bridgeport, the effectiveness of which is triggered by the successful clearing of the new gas unit in FCA10, the

U.S. Emissions Reductions Goals: Results of the EMF 24 Modeling, The Energy Journal, Vol. 1 (Special Issue 1: The EMF24 Study on U.S. Technology and Climate Policy Strategies) (2014), at 21

⁵ Joint Stakeholders Comments on the RGGI Program Review (May 9, 2016), available at <http://www.rggi.org/design/2016-program-review/stakeholder-comments-2016>.

⁶ GC3 Analysis, Data, and Metrics Working Group Meeting (May 5, 2016), at Slide 18.

⁷ See P. Marrin, 3 New Plants Clear New England Capacity Auction as Prices Drop 25% YOY, SNL.com (Feb. 11, 2016).

existing coal unit (Unit 3) is obligated to retire by July 1, 2021. This retirement should be incorporated as a “firm” retirement into both the modeled RGGI reference case and the ADM Working Group’s modeling.

C. Continued Robust Investment in Energy Efficiency, Including Building Efficiency, Will Be Critical to Connecticut’s Achievement of Its Long-Term Climate Goals

Energy efficiency continues to be the least cost energy resource. At the same time, its potential to generate additional GHG emission reductions remains extremely large. The ADM Working Group’s Measures & Technologies table identifies numerous categories of electric and building efficiency measures as having “large” potential for further climate benefits.⁸ These include deep envelope retrofits for existing residential and commercial buildings, expanded high-efficiency lighting for commercial and industrial buildings, expanded renewable thermal technologies for residential, commercial and industrial buildings, and expanded district heating/cooling for commercial and industrial buildings.⁹ Given the cost-efficacy of these measures and their potential to offset the need for other most costly measures, Connecticut should continue to fully fund its “all cost effective” efficiency mandate and pursue ever increasing levels of energy savings going forward.

D. As the Most Recent ADM Working Group Modeling Highlights, Electrification of Transportation Is Critical to Achieving Connecticut’s Long-Term Climate Goals

As shown in the GC3 May meeting materials and as we highlighted previously in our March GC3 comments, electrifying the transportation sector is one of the most significant actions that the State can take to achieve its 2050 economy-wide climate goals and to meet or exceed its commitment under the New England Governors and Eastern Canadian Premiers’ resolution.¹⁰ The Measures & Technologies table identifies expanding advanced vehicles including battery electric vehicles, plug-in hybrid electric vehicles, and hydrogen fuel cell vehicles as one of a limited number of measures with “large” potential for further GHG reductions.¹¹

1. To Reach the State’s GHG Reduction and Zero Emission Vehicle Memorandum of Understanding Goals, the GC3 Should Encourage Connecticut To Make a Long-Term Commitment to Expanding its EV Rebate Programs

At present, there are three primary obstacles to EV adoption: higher up-front costs of the EVs themselves, the lack of an adequate charging infrastructure to support them, and lack of

⁸ Measures & Technologies for modeling in the Long range Energy Alternatives Planning System (LEAP) (May 5, 2016).

⁹ *Id.*

¹⁰ GC3 Analysis, Data and Metrics Meeting, “Technologies and Measures,” 3 (May 5, 2016).

¹¹ Measures & Technologies for modeling in the Long range Energy Alternatives Planning System (LEAP) (May 5, 2016).

sufficient public education. To meet its goals, Connecticut needs to address all of these obstacles. As we stated in our March GC3 comments, the GC3 should work with DEEP, PURA, and Connecticut's utilities to expand and make long-term rebates that reduce the higher up-front cost of purchasing EVs, as well as educating the public about rebates and the benefits of EVs and rapidly expanding Connecticut's charging infrastructure, especially in underserved areas and areas where the market falling far short, such as in multi-unit dwellings ("MUDs") and workplaces.

In response to Connecticut's participation in the ZEV MOU, the State created EVConnecticut in 2013, a partnership between DEEP and the Connecticut Department of Transportation. EVConnecticut offers the Connecticut Hydrogen and Electric Automobile Purchase Rebate ("CHEAPR"), a "cash on the hood" rebate of up to \$3,000 to Connecticut residents off the purchase or lease price of a new eligible EV.¹² CHEAPR is the only EV rebate in the country that is available immediately at the point of sale at the dealership.

EVConnecticut also offers rebates for charging infrastructure, providing up to \$10,000 per installation of publicly available EV charging stations.¹³ In 2013, EVConnecticut awarded grants for 56 publicly-available EV charging stations,¹⁴ and in May 2015 and December 2015, DEEP released additional financing from the fund to provide for more stations.¹⁵

While EVConnecticut's rebate programs are laudable, the current funding source is limited, and the lack of long-term program funding creates uncertainty for automakers, auto-dealers, and potential EV buyers. In order to provide this funding certainty, the GC3 should work with its Transportation Climate Initiative (TCI) regional partners as well as with DEEP at the state level to establish a guaranteed and long-term funding source for CHEAPR and Connecticut's other EV rebate programs that both reduces pollution and supports infrastructure as gas tax revenues decline.

2. To Ensure a Rapid Expansion of EVs and Charging Infrastructure, the GC3 Should Work with PURA and DEEP to Establish a Specific Electric Vehicle Proceeding to Further EV Deployment in Connecticut

We applaud the Connecticut state legislature for passing HB-5510, exempting EV charging stations from regulation as utilities, requiring that Connecticut's utilities and the State plan for increased EV charging into their electric distribution plans and ordering Connecticut's utilities to establish time-of-use rates for residential and commercial charging of EVs. Proactive planning and managing of EV load demand can facilitate charging EVs at times that renewable

¹² CT Dep't of Energy and Environmental Protection, *supra* note 28.

¹³ Multi-State ZEV Task Force, *State Initiatives* (Aug. 11, 6:30pm), available at: <http://www.zevstates.us/state-initiatives/>; see also Dep't of Energy and Environmental Protection, *EVConnecticut* (Aug. 10, 2015), available at: http://www.ct.gov/deep/cwp/view.asp?a=2684&q=525224&deepNav_GID=1619.

¹⁴ Dep't of Energy and Environmental Protection, *Governor Malloy Announces Funding for Electric Vehicle Charging Stations Across Connecticut* (Nov. 4, 2013), available at: <http://www.ct.gov/deep/cwp/view.asp?Q=534564&A=4380>.

¹⁵ CT Dep't of Energy and Environmental Protection, *New Round of Funding: Incentive Program for Electric Vehicle (EV) Charging Stations* (May 20, 2015), available at: http://www.ct.gov/deep/lib/deep/air/electric_vehicle/commissioner_letter_private_ev_incentives.pdf.

energy generation is at its highest, furthering achievement of Connecticut's renewable energy goals while also avoiding the need for traditional fossil-fuel generation investment.

To build on these initiatives, we urge the GC3 to work with PURA and DEEP to establish a proceeding to entertain proposals from utilities and comments from other stakeholders on how best to facilitate and structure the expansion of EVs and charging infrastructure. This expansion can drive rates down for all utility customers because, despite the expenditure of funds to build out the charging infrastructure, it can lead to the increased utilization of renewable sources and otherwise idle generation assets while also minimizing strain on the grid and the need for new generating capacity. These benefits are provided to all utility customers by providing lower rates, customer savings, a more stable utility industry, and cleaner air. This proceeding should also preserve third-party market competition for the EV charging industry, ensuring the maximum build-out of charging infrastructure at the lowest cost. Establishing this proceeding will be necessary to ensure both that Connecticut's ZEV MOU goals are met and that Connecticut's EV expansion reduces ratepayer and utility costs while maximizing economic and environmental benefits such as GHG reductions.

II. Conclusion

The Sierra Club appreciates the work of the GC3 and the ADM Working Group to proactively address and plan for achievement of Connecticut's climate goals, and to establish appropriately aggressive mid-term goals. The Club applauds the scenario analysis conducted by the ADM Working Group to date, which highlights the need for Connecticut to actively pursue three core pillars in meeting its long-term climate goals: (1) investing heavily in large-scale and distributed renewable generation and locking in electric sector emission reductions through an appropriately calibrated RGGI cap; (2) continuing to invest in all cost-effective energy efficiency to continue to enhance Connecticut's leadership in this area; and (3) electrifying transportation and building heating and cooling, including establishment of a dedicated funding source for Connecticut's exemplary EV rebate program and engagement of utilities in helping to accelerate bringing EV infrastructure to scale in the state. Investing in these three pillars will enhance Connecticut's ability to achieve its climate goals while improving environmental quality and growing Connecticut's economy. We look forward to working with the ADM Working Group and GC3 further on these issues.

Respectfully submitted,



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