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VIA ELECTRONIC MAIL

Analysis, Data & Metrics Working Group (ADM)
Governor's Council on Climate Change (GC3)
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RE: Comments of the Sierra Club Concerning Electric Vehicle Promotion

I. Introduction

The Sierra Club,¹ on behalf of its 8,000 members in Connecticut, respectfully submits the following comments to the Analysis, Data & Metrics Working Group of the Governor's Council on Climate Change ("GC3"). Connecticut has highly laudable existing zero emission vehicle ("ZEV") objectives and GHG emission reduction goals, as well as a mandatory duty to reduce ozone levels in the state. Electric vehicles ("EVs") have a uniquely important role to play in achieving all of these objectives, but the current rate of EV adoption in Connecticut is insufficient to achieve the desired results.

We think it is highly important that Connecticut act quickly to accelerate the buildout of EV charging infrastructure and to make financing of EV purchase rebates more robust, secure and reliable. With respect to advancing EV charging infrastructure, Connecticut should follow the lead taken by other states, including California, and have PURA issue a request for utility proposals to accelerate the installation of chargers while lowering rates and building a competitive third-party charging industry. In addition, Connecticut could leverage fleet electrification to resolve its ozone nonattainment issues, and it can use federal "CMAQ" funds to electrify public transit vehicles. We also encourage the GC3 to work with the Connecticut legislature to establish a legislative requirement that PURA and Connecticut's utilities implement time of use ("TOU") rates as soon as possible and grant PURA the authority to approve utility rate-basing to finance the build-out of EV charging infrastructure.

II. Comments

¹ Founded in 1892, the Sierra Club is the nation's oldest grassroots environmental organization with approximately 600,000 members in all 50 states, including approximately 8,000 members in Connecticut. The Sierra Club's mission involves promoting the responsible use of the earth's resources and protecting and restoring the quality of the natural and human environments. In view of this mission, the Sierra Club seeks to ensure the availability of safe and reliable energy in a manner that protects human health and promotes a healthy environment.

1. Achieving Connecticut's GHG Reduction and ZEV Goals Requires a Massive Expansion in Electric Vehicle Adoption and Infrastructure

Connecticut's Global Warming Solutions Act ("GWSA") set the State on a necessary path to reduce GHG emissions by 80% by 2050, promote renewable energy sources, and lower electricity rates through energy efficiency and distributed energy resources, among other strategies. Notably, these goals seek significant GHG emissions not just from the electric sector but from all sectors of the State's economy. These goals were recently reinforced by Governor Malloy's decision to join the Conference of New England Governors and Eastern Canadian Premier's resolution to achieve a 35%-45% reduction in GHG emissions economy wide by 2030.²

In order to achieve Connecticut's goals of a 35%-45% emissions reduction by 2030 and an 80% emissions reduction by 2050, it is critical that Connecticut make significant reductions in GHG emissions from its transportation sector. As shown in the GC3 November meeting presentation, the transportation sector is a major contributor of air pollutants,³ as it represents 40% of Connecticut's current GHG emissions.

In recognition of the need to address GHG emissions from its transportation sector, in 2013 Connecticut joined with seven other states in a ZEV Memorandum of Understanding ("MOU") and corresponding Multi-State Action Plan to commit to a goal of 3.3 million ZEVs on the road by 2025 across the eight states.⁴ This translates into 155,505 EVs on the road in Connecticut by 2025.⁵ Most recently, Connecticut announced its plan to work with other regional states to pursue clean transportation investments to reduce GHG emissions from the transportation sector 31-39% by 2030 from 2011 levels.⁶ Connecticut also joined the International ZEV Alliance in pursuit of making all new passenger vehicles ZEVs by no later than 2050.

These goals are clearly commendable, but Connecticut is not currently on track to meet its EV goals under the ZEV MOU, nor is it on track to achieve the reduction in GHG emissions from its transportation section needed to achieve its 2030 and 2050 GHG reduction goals. There are only 3,000-4,000 EVs on the road in the state, and current rates of EV adoption will not translate into more than 150,000 EVs by 2025. As the GC3 stated in its November meeting, the EV sales share must increase to 100% by 2050 in order to achieve Connecticut's 80% GHG reduction goal.⁷ Likewise, there are only approximately 300 EV chargers on the road in Connecticut, and chargers at "long dwell time" locations, including multi-unit dwellings and workplaces, are also not at the levels needed.

² Conf. of New England Govs. Resolution 39-1, <http://www.cap-cpma.ca/data/Signed%2039-1En.pdf>.

³ GC3 Meeting Slides (November 13, 2015).

⁴ ZEV Multi-State Task Force, Multi-State ZEV Action Plan 2 (May 2014).

⁵ Sierra Club, *Charging Up*, available at: https://www.sierraclub.org/sites/www.sierraclub.org/files/uploads-wysiwig/ChargingUp_DIGITAL_ElectricVehicleReport_Oct2015_0.pdf

⁶ <http://www.transportationandclimate.org/five-northeast-states-and-dc-announce-they-will-work-together-develop-potential-market-based>

⁷ *Id.*

At present there are two primary obstacles to EV adoption: higher up-front costs of the EVs themselves and the lack of an adequate charging infrastructure to support them. To meet its goals, Connecticut needs to address both of these obstacles. In furtherance of its ZEV MOU goals, Connecticut should use the ZEV MOU Action Plan as a model in crafting its own updated, state-specific EV action plan. However, while developing the Connecticut EV action plan, there are a number of specific initiatives that should begin immediately in order to rapidly expand EV adoption. As discussed below, Connecticut should expand and make permanent rebates that reduce the higher up-front cost of purchasing EVs, and it should rapidly expand 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. Along with implementing an EV action plan, we advise the GC3 to play a critical role in galvanizing state agencies to the specific initiatives discussed below to ensure a rapid EV expansion in Connecticut.

2. In Furtherance of the State's GHG Reduction and ZEV MOU Goals, Connecticut Should Expand Its EV Rebate Programs And Make Funding Consistent And Continuous

a. EV Purchases

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.⁸ CHEAPR is the only EV rebate in the country that is available immediately at the point of sale at the dealership.

While the CHEAPR program is 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. The GC3 should work with DEEP to establish a guaranteed and long-term funding source for CHEAPR and Connecticut's other EV rebate programs.

b. EV Charging Stations

EVConnecticut also offers rebates for charging infrastructure, providing up to \$10,000 per installation of publicly available EV charging stations.⁹ In 2013, EVConnecticut awarded grants for 56 publicly-available EV charging stations,¹⁰ and in May 2015 and December 2015, DEEP released additional financing from the fund to provide for more stations.¹¹

⁸ CT Dep't of Energy and Environmental Protection, *supra* note 28.

⁹ 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.

¹⁰ 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>.

¹¹ 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.

Despite the success of these programs, Connecticut only has approximately 300 publicly available charging stations.¹² In order to reach its ZEV MOU and GWSA GHG reduction goals, Connecticut must rapidly expand its EV charging infrastructure. Essential to this expansion is targeting MUDs and workplaces, since most EV charging –after at the home- is done at workplaces, which have long “dwell times” for recharging batteries. Research from the U.S. Department of Energy shows that people that have access to workplace charging are 20 times more likely to become an EV owner.¹³ Yet an EV owner often has no ability to install chargers at these locations, and employers and owners of MUDs often lack an incentive to spend the money to install chargers.

Because of these obstacles, a growing number of states are exploring ways for utilities to engage the EV charging market and lower the cost of deploying charging infrastructure. Between 2013 and 2014, the utility commissions in three ZEV states—California, Oregon, and Massachusetts—formally ruled to allow for utility participation in the EV service equipment market. In 2015, the state of Washington passed legislation approving utility investments in EV charging infrastructure as part of their regulated asset base. In the Middle West, utility companies in Kansas, Missouri and Kentucky are deploying EV charging infrastructure and have filed to include the assets in their rate-base. Underlying each of these actions is the notion that utilities should have an expanded role in EV infrastructure support and development in order to realize the potential benefits of widespread EV adoption.

In California, for example, two major utility EV charging proposals before the Public Utilities Commission have reached settlement, each with important protections to ensure that charging supports the grid and ratepayers. In San Diego Gas & Electric’s case, where the utility has proposed to deploy 5,500 charging ports across 550 workplace and multi-unit dwellings, the electricity will be sold using a specific vehicle-grid integration rate, in order to incentivize charging during efficient periods. Participating site hosts will be required to submit load management plans that detail how EV driver charging behavior will support the grid, the integration of renewables, and allow EV drivers to realize fuel cost savings relative to gasoline. Similarly, in Southern California Edison’s (SCE) rate case, where parties have reached agreement on the first phase deployment of 1,000 chargers at similar locations (the total program calls for a deployment of 30,000 chargers), electricity will be supplied using a standard time-of-use rate.

3. To Ensure Connecticut’s Rapid Expansion of EVs and Charging Infrastructure, PURA Should Establish an EV-Specific Docket for Expanding EV Charging Infrastructure, DEEP Should Use Fleet Electrification As An Ozone Compliance Mechanism, and the State Legislature Should Enact The Pending Legislative Mandate on Implementation of TOU Rates

To ensure that Connecticut is not left behind as other states move forward with their EV initiatives, PURA should issue a request for utility proposals to advance the buildout of electric

¹² U.S. Department of Energy, Alternative Fuels Data Center.

¹³ U.S. Department of Energy, Workplace Charging Challenge Progress Update 2014: Employers Take Charge, 5 (2014), available at: http://www.energy.gov/sites/prod/files/2015/11/f27/WPCC_2014progressupdate_1114.pdf

vehicle charging infrastructure in an EV specific docket. As noted above, successful proposals should preserve third-party market competition for the EV charging industry; manage EV charging loads to lower rates ensure savings to nonparticipants as well as participants (by increasing the kilowatt hours across which the costs of the grid and generation assets are spread); deliver emissions reductions in GHGs and conventional pollutants; facilitate the integration of renewables; be scalable; and secure the maximum build-out of charging infrastructure at the lowest cost. In addition, it is also very important that this new technology is accessible to disadvantaged communities. Indeed, low-income residents and communities of color are disproportionately impacted by air pollution and often lack sufficient transportation options, and proposals should ensure that these communities' needs are addressed.

As part of developing EV charging infrastructure, PURA should also begin to implement EV TOU rates. The Connecticut legislature passed Public Act 13-298 in 2013, requiring PURA to determine whether it is appropriate to implement EV TOU rates.¹⁴ While PURA opened a docket to consider the question, it has yet to reach a final decision.¹⁵ Implementing EV TOU rates in early 2016 will be essential to incentivizing the rapid buildout of EVs and charging infrastructure.

Connecticut is in nonattainment for the ozone NAAQS, and DEEP should build fleet electrification into its State Implementation Plans for the ozone NAAQS, as California is doing. Electrification of the transportation sector can deliver significant reductions in ozone precursors as well as GHG reductions. The Department of Transportation and DEEP could also do more to support cities and counties in submitting grant requests to the federal government for Congestion Mitigation and Air Quality ("CMAQ") funding for electric busses and other infrastructure needed to electrify public transportation. To date CMAQ funds have been used in Connecticut for chargers, but Connecticut should explore applying for CMAQ funds for bus electrification, both public and school busses. Doing so can significantly lower long term costs for the public as fuel costs and maintenance costs are greatly reduced. Muncie, Indiana is an example of a city that has used CMAQ funds for busses—though hybrid busses.

The Connecticut legislature could also advance EVs in Connecticut by completing the legislative agenda it started in 2015. This year, the state Senate passed a bill that would have required PURA to a) implement EV TOU rates for residential customers, thus lowering the cost of recharging electric vehicles while delivering important benefits like downward rate pressure; and b) determine whether it is appropriate to implement EV TOU rates specifically at public EV charging stations.¹⁶ However, the session ended before the House could also pass the bill. One way to incentivize EV adoption would be to ensure lower rates for EV charging, increasing the cost savings of EVs over fossil fuel based internal combustion engines, which the legislature could do by pushing PURA to complete its EV TOU rate docket. Alternatively, the legislature could simply mandate that PURA and Connecticut's utilities implement EV TOU rates as soon as possible and grant PURA the authority to approve utility rate-basing to finance the build-out of EV charging infrastructure.

¹⁴ C.G.S. § 29-252(a).

¹⁵ See CT Public Utilities Regulatory Authority Docket 13-08-39 (Aug. 20, 2015, 3:00pm), available at: [http://www.dpuc.state.ct.us/dockcurr.nsf/\(Web+Main+View/All+Dockets\)?OpenView&StartKey=13-08-39](http://www.dpuc.state.ct.us/dockcurr.nsf/(Web+Main+View/All+Dockets)?OpenView&StartKey=13-08-39).

¹⁶ SB 570, CT Senate, §18(8)(b) (2015).

4. The PURA RFP For EV Infrastructure Should Ensure that EV Load Is Properly Structured To Secure Maximum Grid and Emission Benefits While Facilitating Renewable Energy Integration

To re-emphasize a critical point made above, delivering the full range of benefits that can flow from fleet electrification will require that EV charging is structured to ensure off-peak charging and facilitation of renewable energy integration. This can be done through price signals, load management planning or managed charging, such as demand response. Off-peak charging is needed to driving overall electricity rates down and customer savings up because, despite the expenditure of funds to build out the charging infrastructure, it can lead to the increased utilization of otherwise idle generation assets (and other parts of the grid) while also minimizing strain on the grid. As a New York EV study found, controlled charging of EVs in New York could save ratepayers up to \$46 million annually in reduced generating costs and reduced monthly generating capacity costs and an additional \$103 million in reduced infrastructure upgrade costs over the next 15 years.¹⁷

Likewise, managing EV load to coincide with solar and wind resources will help achieve Connecticut's RPS goal of 27% renewable generation by 2020. Aligning EV load with variable renewable generation will allow the "dispatch-ability" of the EV load to complement the supposed "intermittency" of renewable load.

Managed EV integration also promotes customer education and engagement, as ratepayers are incentivized through financial rebates and bill savings to purchase EVs and take advantage of metering arrangements that encourage off-peak charging at the lowest cost. Programmatic mechanisms such as time-variant pricing and managed charging can be crucial to incentivizing off-peak charging. Likewise, siting stations at locations that allow for long dwell times, such as multi-unit dwellings or workplaces, is a crucial step towards greater EV penetration and maximized use of EV charging assets.

III. Conclusion

Connecticut must act quickly to seize the enormous potential of EV expansion. Not only will a wide-spread switch to EVs reduce GHG emissions, help reduce Connecticut's ozone problems, and promote renewable energy, but installation and operation of EV charging infrastructure will generate a multitude of economic and environmental benefits to Connecticut.

To fulfill Connecticut's GWSA GHG reduction goals and ZEV MOU objectives, Connecticut must match other states' efforts in expanding EVs and reaping the corresponding economic and environmental benefits. We urge the GC3 to work with PURA, DEEP, Connecticut's electric utilities, the CT Auto Retailers Association, the EV charging and auto industries, and other stakeholders in crafting a Connecticut ZEV action plan. To ensure that EV adoption continues to expand while that plan is being developed, we urge DEEP to continue and

¹⁷ Indeed, while rapid EV expansion can deliver tremendous benefits, as the April 2014 REV Staff Report warned, without proper planning, they have the potential to strain the electricity grid, aggravate peak demand and increase costs for New York utilities and ratepayers.

expand Connecticut's current EV purchase and charging installation rebate programs. We also encourage PURA to issue a request for utility proposals to advance EV charging infrastructure build out, to complete its pending EV TOU dockets, and to take the other actions identified above. We look forward to working with the GC3 further on these issues.

Respectfully submitted,

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