SolarCity

November 21, 2016

Chairman Mary Nichols
California Air Resources Board
1001 I Street
Sacramento, CA 95814

RE: Workshop on 2030 Target Scoping Plan Update - GHG Policy Scenarios, Natural & Working Lands, and Public Health Analysis

Dear Chairman Nichols,

SolarCity respectfully submits the following comments in response to the 2030 target scoping plan update workshop regarding greenhouse gas (GHG) emissions policy scenarios.

**Background**

SolarCity is California's leading full service solar power provider for homeowners and businesses – a single source for engineering, design, installation, monitoring, and support. The company currently has over 4,000 California employees based at more than 40 facilities around the state and had installed solar energy systems for over 285,000 customers nationwide as of June 30, 2016.

In addition to rooftop solar, SolarCity develops and deploys other non-solar distributed energy resources (DER) for both residential and commercial applications. Specifically, SolarCity offers smart thermostats and battery energy storage systems to help customers manage their energy use. Accordingly, SolarCity has a strong interest in deploying technologies that help reduce the state's GHG emissions and meet its climate and clean energy goals.

**Comments**

SolarCity commends the leadership of the California Air Resources Board (ARB) and staff in developing the 2030 target scoping plan update GHG scenarios analysis in a timely and efficient manner. The GHG scenarios analysis will play a critical role not only in the scoping plan update but will also likely serve as an important input for the Integrated Resource Planning (IRP) process being undertaken by the California Public Utilities Commission (CPUC).

SolarCity is pleased to see that building electrification is included as one of the specific policy areas in Alternative 1. Electrification of buildings presents a large untapped opportunity for reducing GHG emissions and meeting the state's carbon targets. Not only does it reduce GHG emissions when natural gas building end uses are converted to electricity produced by renewable generators, but many of those end uses constitute flexible loads that can help integrate renewable resources into the grid.

One specific area that has large potential in reducing building emissions and providing renewable integration is the electrification of water heating paired with rooftop solar. Technology exists today that can match the match the operation of an electric water heater with the output of a rooftop solar array, such that the water is heated almost entirely with renewable power, thereby eliminating the emissions from water heating. In addition to the emissions reduction benefit, the water heater acts as a form of energy storage, providing a renewable integration benefit.

In previous comments to ARB regarding the Aliso Canyon mitigation strategy, we quantified the opportunity of switching the heating fuel source from natural gas to solar-generated electricity in

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California homes and provided a detailed justification for the benefits of rooftop solar plus grid enabled electric water heating.[1] While we will not repeat this analysis here, we reiterate the potential for GHG reductions and grid integration of this easily-implementable solution.

Although abnormally low natural gas prices in California make the economics of switching away from natural gas water heating a challenge for residential customers, a relatively small state rebate would likely kick-start this market and bring the practice of pairing solar photovoltaics (PV) with electric water heating more into the mainstream. Unfortunately, there are currently no programs or incentives in place that would encourage consumers to transition to transition away from natural gas end uses in favor of efficient or low-carbon electric end uses in buildings, such as pairing electric water heating with rooftop solar.

SolarCity would therefore like to see greater recognition by ARB within the 2030 scoping plan update scenarios regarding the lack of policy structures in place to incentivize the electrification of buildings. Furthermore, beyond including building electrification in Alternative 1, it should also be included in the Draft Scoping Plan scenario. Rooftop solar potential is included in all three scenarios and transitioning to electric water heating could be viewed as a natural extension of this policy, pending the development and deployment of adequate incentive mechanisms.

**Conclusion**

In order for California to meet the 2030 GHG reduction target, a strong policy framework will need to be in place. This includes further recognition of the importance of the electrification of buildings within the GHG policy scenarios discussion.

SolarCity thanks the Air Resources Board for the opportunity to comment on the GHG policy scenarios. We look forward to participating in the scoping plan update process going forward and helping California develop a framework that meets its carbon targets.

Respectfully submitted,

Damon Franz
Director, Policy and Electricity Markets
SolarCity

[1] SolarCity comments to ARB on Aliso Canyon Mitigation Program, March 22, 2016. Available at https://www.arb.ca.gov/lists/com-attach/40-alisompdraft-ws-UiFXMgRxV30KU1Q3.pdf\