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SolarCity Comments - 2015 Draft IEPR

Additional submitted attachment is included below.

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November 10, 2015

RE: Docket No. 15-IEPR-01

SolarCity respectfully submits the following comments on the draft 2015 Integrated Energy Policy Report (IEPR).

Background

SolarCity is a full service solar power provider for homeowners and businesses – a single source for engineering, design, financing, installation, monitoring, and support. The company provides cost-effective financing that enables customers to go solar without high upfront costs. SolarCity has more than 6,000 California employees, based at more than 30 facilities around the state and, as of September 30, 2015, has provided or contracted to provide clean energy services to more than 298,000 customers nationwide.

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 the zero net energy (ZNE) section of the 2015 IEPR.

Overall Comments

SolarCity commends the leadership of the California Energy Commission (CEC) in developing the 2015 IEPR in a timely and efficient manner. As part of the energy efficiency section of the 2015 IEPR, CEC has included recommendations on how to reach California's ZNE goals for 2020 and beyond. We recognize the critical role the CEC's development of the 2019 building efficiency standards will play in meeting the ZNE goals for both the residential and commercial sector. We therefore appreciate the opportunity to comment in particular on the importance of including and recognizing the value of energy storage and load shifting technologies in achieving the recommendations outlined for ZNE in the 2015 IEPR.

Value of Energy Storage for Zero Net Energy

As the recently finalized New Residential Zero Net Energy Action Plan points out "energy storage is a critical component to ZNE and the management of grid impacts."[1]Energy storage allows energy from onsite renewables or grid power to be dispatched to times of greatest value for both the consumer and the grid. As a result, energy storage helps to flatten demand and supply peaks on the electric grid by balancing the difference in building load and onsite renewable generation. Because electricity cost is correlated with emissions, using batteries to store energy when it is inexpensive for use when it is more costly can significantly reduce emissions. This value is amplified when pairing storage with solar systems. We believe it is important for these benefits to be recognized and accurately valued in the TDV-weighted energy calculations or by other mechanisms created by the CEC that incentivize the deployment and viability of pairing these technologies with ZNE buildings.

Value of Load Shifting for Zero Net Energy

[1] 2015 New Residential ZNE Action Plan, pp.27

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Load shifting strategies, sometimes referred to as demand response (DR), "will be important strategies in achieving the ZNE goals" as pointed out in the New Residential Zero Net Energy Action Plan.[2] Load shifting allows for appliance loads to be managed in a way that reduces electricity consumption during periods of peak grid demand and shifts the load to periods with excess renewable generation or low grid power costs. As a result, more electricity is used during low electricity cost and low emissions periods while avoiding periods of high electricity cost and high emissions. These strategies can be extended beyond the usual critical or high grid load DR events and applied on a daily basis, which helps to reliably flatten demand and supply peaks on the electric grid. We believe it is important for these benefits to be recognized and accurately valued in the TDV-weighted energy calculations or by other mechanisms created by the CEC that incentivize the deployment and viability of pairing these technologies with ZNE buildings.

Time Dependent Valuation (TDV) for Zero Net Energy

TDV is a tool used by the CEC in its Title 24, Part 6, building energy efficiency standards to gauge the value of energy efficiency measures. With each round of updates to the building efficiency standards, the CEC also updates the TDV calculation. One of the outstanding issues specifically highlighted by the 2013 IEPR is the need for "updating TDV-weighted energy calculations with refined electricity and natural gas information and costs."[3] Additionally, we believe that the update of the TDV calculations should include an analysis to determine the value of energy storage and load shifting technologies. Currently, energy storage and load shifting capabilities are not part of the Title 24, part 6 compliance software and we urge the CEC to develop this functionality in the tool. While we recognize that the actual update of TDV calculations is outside the scope of the 2015 IEPR, we believe it is important to recognize the value of energy storage and load shifting in meeting the state's ZNE goals. Therefore, the 2015 IEPR ZNE recommendations should explicitly acknowledge the need to update the TDV calculations with regards to energy storage and load shifting.

Conclusion

The ZNE recommendations identified in the 2015 IEPR will play a role in informing the development of the 2019 building efficiency standards. Therefore, it is important that the CEC specifically recognize the value of energy storage and load shifting for ZNE in the 2015 IEPR as outlined in our comments above.

SolarCity thanks the Commission for the opportunity to comment on the ZNE portion of the 2015 IEPR and we look forward to being an active participant in the stakeholder process going forward.

Respectfully submitted,

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SolarCity

[2] 2015 New Residential ZNE Action Plan, pp.27
[3] Draft 2015 IEPR, pp. 48