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SCTY comments - 2016 Draft IEPR Update

Additional submitted attachment is included below.



November 7, 2016

Commissioner Karen Douglas
California Energy Commission
Dockets Office
Re: Docket No. 16-IEPR-01
1516 Ninth Street
Sacramento, CA 95814-5512

RE: Draft 2016 Integrated Energy Policy Report (IEPR) Update

Dear Commissioner Douglas,

SolarCity respectfully submits the following comments on the draft 2016 Integrated Energy Policy Report (IEPR) update.

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 the electricity demand forecast and environmental performance report of California's electrical generation system sections of the 2016 IEPR update.

Overall Comments

SolarCity commends the leadership of the California Energy Commission (CEC) in developing the 2016 IEPR update in a timely and efficient manner as this particular update includes a number of complex energy policy issues California is currently facing and will continue to impact the state over the next several years. Our comments focus on two particular sections of the 2016 IEPR update, Chapter 1 and 4, and also provide additional clarification regarding the relevance of FERC Order 1000 for a regional Independent System Operator (ISO).

Chapter 1 – Environmental Performance of the Electricity Generation System

While SolarCity agrees with many of the opportunities and challenges facing distributed energy resources (DERs) in California as described in this Chapter, there are several statements that require additional clarification and data.

First, the section on the "Integration of Distributed Energy Resources" states that:

"DER technologies have not been developed at a similar scale and pace...making them more unpredictable and challenging to integrate into the grid. However, there are many challenges with planning for and developing a highly distributed electric grid, especially those related to consumer choice and system reliability."

There is no question that the customer is central to the adoption and integration of DERs. While we agree that integrating DERs does not come without its challenges, it is important to clarify what levels of DER penetration are being discussed. Integration issues with DERs at relatively low levels of penetration are certain to be different from issues that emerge at higher levels.

Furthermore, DERs at their current level of deployment in California are providing benefits to the grid that are driving down the costs to operate the grid by improving reliability and resilience. The California Independent System Operator (CAISO) has said in a number of instances that solar power reduces the cost to operate the grid. For example, at a workshop on California's response to the drought of 2015, a representative of the CAISO specifically credited solar generators with helping the state deal with low hydroelectric conditions by helping meet the need for power during the summer without resorting to expensive and dirty peaker plants.¹ Moreover, PG&E recently credited a combination of DERs – rooftop solar and energy efficiency – with avoiding the need to make \$196 million in transmission investments in the CAISO's most recent transmission plan.² Finally, a recent report by the CEC found that DERs can provide ratepayer benefits compared with traditional infrastructure investments. The report finds that: "In the San Joaquin Valley Region, the primary benefit is transmission infrastructure deferrals, with an estimated long-term ratepayer benefit of over \$300 million."³

Second, Chapter 1 discusses the increased installation of distributed solar in California by noting that "due to the variability of solar resources at any location, these PV systems require support from the electricity grid in the form of increased operating reserves and ancillary services."⁴ This statement is factually incorrect and should be removed from the draft report. Operating reserves in California are set as a percentage of state's peak load. Since distributed rooftop PV systems serve load behind the customer's meter, they reduce the state's total peak load, which actually *reduces* the need for operating reserves – contrary to the above statement in the IEPR. While the infamous "duck curve" might imply that more flexible generation may be needed to integrate large-scale solar resources, a recent consultant report found that the duck curve is driven by utility-scale solar in California, not distributed resources. Analyzing several years of CAISO data, the report from consultancy Scott Madden found that: "If the belly of the duck is formed by less visible distributed resources, one would see it manifested in both the system load and the net load. This is not the case in the California Duck Curve. Instead, we see a smooth system load and a concave net load, which is indicative of the influence of utility-scale solar rather than distributed generation."⁵

Furthermore, Chapter 1 states that "net energy metering (NEM) customers are able to use the electric grid as highly valuable energy storage for very little cost, which increases the cost of maintaining and operating the electric system for electric consumers without NEM."⁶ In making this statement, the report errs by presenting the existence of a cost-shift as universal fact, without presenting any studies or evidence to support that conclusion, when in fact there are a number of studies finding that NEM does not shift costs to non-NEM customers. While there may be instances where costs are shifted between classes of utility customers, robust data collection and analysis is critically important to assess whether cost

¹ "Overview of California's Current Drought and its Effect on the Energy System," presented by Dede Subatki of the California ISO on August 28, 2015.

² Cal-ISO Board Approves Annual Transmission Plan." California Energy Markets, April 1, 2016.

³ "Customer Power: Decentralized Energy Planning and Decision-Making in the San Joaquin Valley," CEC Staff Paper by Matt Coldwell. July 2016. <http://www.energy.ca.gov/2016publications/CEC-200-2016-005/CEC-200-2016-005.pdf>

⁴ 2016 Draft IEPR, p. 67.

⁵ "Revisiting the California Duck Curve An Exploration of Its Existence, Impact, and Migration Potential," by Scott Madden Management Consultants. October, 2016. http://www.scottmadden.com/wp-content/uploads/2016/10/Revisiting-the-Duck-Curve_Article.pdf

⁶ 2016 Draft IEPR, p. 67.

recovery and shifting are occurring, the extent to which they are occurring, and whether reforms are necessary. A recent report by the Brookings Institution of state NEM cost-effectiveness studies found that “while the conclusions vary, a significant body of cost-benefit research conducted by PUCs, consultants, and research organizations provides substantial evidence that net metering is more often than not a net benefit to the grid and all ratepayers.”⁷

As laid out in SolarCity’s recent white paper, distributed energy resources offer net economic benefits to society worth more than \$1.4 billion per year in California alone by 2020.⁸ In a later section, the draft IEPR itself recognizes that “packaging distributed PV with other DER at the building and/or community scale may help smooth short-term ramps in generation output, provide needed grid services to the local distribution grid (such as reactive power, voltage support, and frequency regulation), and shift oversupply to meet evening peak demand and effectively level the net load.”⁹ Furthermore, SolarCity is pleased to see that the draft report acknowledges that in order to continue to drive the adoption of the DERs, there is a need for increased transparency into the investor owned utilities (IOUs) distribution planning processes.¹⁰ Such as in California where this type of progress has in large part been attributed to the distribution resource plans (DRP) proceeding.¹¹

Chapter 4 - Electricity Demand Forecast

As referenced within the draft report and during the October 24, 2016 CEC workshop, this IEPR provides the groundwork for future revisions to the electricity demand forecast. While the CEC has established many of the necessary improvements to refine the electricity demand forecast including providing access to more granular data, there are still several outstanding issues that need to be considered for 2017 and beyond.

As SolarCity has stated in previous comments on the IEPR electricity demand forecast, the forecast plays a critical role in a diverse set of planning processes undertaken by both the California Public Utilities Commission (CPUC) and CAISO. We therefore thank the CEC for directly acknowledging our previous comments regarding the need to ensure a wider group of stakeholders is engaged in the demand forecast refinement process.¹² In these comments submitted to the CEC in July 2016, SolarCity provided three main areas for refinement in the electricity demand forecast going forward in order to ensure the most accurate forecast possible. This included noting the importance of the peak shift impact of solar photovoltaics (PV) in the forecast.

SolarCity is encouraged to see that one of the recommendations in this update is to “continue to evaluate the impact of peak shift in 2017 IEPR energy demand forecast”¹³ yet we suggest that while this will be critical for future forecasts, it should not be included in the 2016 forecast as the methodology by which to calculate it has not been fully vetted. We also maintain the recommendation to further distinguish between average and marginal peak impact factor when evaluating the distributed generation fleet. It will be more appropriate to incorporate this impact once the load forecast is made on an hourly basis, so PV

⁷ “Rooftop Solar: Net Metering is a Net Benefit,” by Mark Muro and Devashree Saha. The Brookings Institution, May 23, 2016. <https://www.brookings.edu/research/rooftop-solar-net-metering-is-a-net-benefit/>

⁸ SolarCity, Pathway to a Distributed Grid, available at http://www.solarcity.com/sites/default/files/SolarCity_Distributed_Grid-021016.pdf

⁹ Draft 2016 IEPR, p. 68.

¹⁰ Draft 2016 IEPR, p.68.

¹¹ Draft 2016 IEPR, p.69.

¹² Draft 2016 IEPR update, p. 170.

¹³ Draft 2016 IEPR update, p.178.



profiles can be applied to that hourly load, and the peak impact can be assessed directly based on that hourly data.

General Comments –Regionalization

In several sections, the draft IEPR points to the development of a regional, west wide electricity market and how critical it will be to assisting with the integration of renewable resources.¹⁴ The report also references Federal Energy Regulatory Commission's (FERC) interregional Order No. 1000¹⁵, which is intended to require planning authorities to evaluate non-transmission alternatives (NTAs), such as energy efficiency, demand response and distributed generation, on a comparable basis with traditional wires investments in regional transmission planning.

The report should go a step further and recommend additional steps the CAISO should pursue in order to fully implement Order 1000. While Order 1000 offers massive potential to reduce costs by replacing proposed new transmission lines with less-expensive alternatives, implementation requires significant additional work by the CAISO to develop rules, processes and standards that would allow NTAs to participate in regional transmission planning. In particular, the CAISO will need to develop a cost allocation and recovery mechanism so that entities offering transmission alternatives can recover the costs of those investments on a comparable basis to transmission providers. Additionally, the CAISO will need to protocols for valuing the costs and benefits of NTAs in order to compare them in a fair and accurate manner with traditional transmission investments. In light of the discussion regarding regionalization in the draft IEPR, SolarCity recommends that the final 2016 IEPR emphasize and expand upon the critical need for implementing FERC Order 1000.

Conclusion

The draft 2016 IEPR update discusses many policy issues that will contribute to the development of the 2017 IEPR recommendations. SolarCity is pleased to see that the role of DERs is highlighted throughout the report and therefore recommends that the CEC integrate our clarifying comments in the final 2016 IEPR update.

SolarCity thanks the Energy Commission for the opportunity to comment on the 2016 draft IEPR update. We look forward to being an active participant in the 2017 IEPR stakeholder process once it begins.

Respectfully submitted,

Damon Franz
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SolarCity

¹⁴Draft 2016 IEPR update, p.5.

¹⁵Draft 2016 IEPR update, p.34.