

DOCKETED

Docket Number:	16-IEPR-05
Project Title:	Electricity Demand Forecast
TN #:	212183
Document Title:	SolarCity Comments - Energy Demand Forecast 2017 and Beyond Workshop
Description:	N/A
Filer:	System
Organization:	SolarCity
Submitter Role:	Public
Submission Date:	7/7/2016 4:27:03 PM
Docketed Date:	7/7/2016

Comment Received From: Francesca Wahl

Submitted On: 7/7/2016

Docket Number: 16-IEPR-05

SCTY Comments - Energy Demand Forecast 2017 and Beyond Workshop

Additional submitted attachment is included below.



July 7, 2016

Commissioner Karen Douglas
California Energy Commission
Dockets Office
Re: Docket No. 16-IEPR-05
1516 Ninth Street
Sacramento, CA 95814-5512

RE: Workshop on Methodological Improvements to the Energy Demand Forecast for 2017 and Beyond

Dear Commissioner Douglas,

SolarCity respectfully submits the following comments on the methodological improvements to the energy demand forecast for 2017 and beyond in response to the June 23, 2016 workshop.

Background

SolarCity is a full service solar power provider for homeowners and businesses – a single source for engineering, design, installation, monitoring, and support. As of March 31, 2016, the company had more than 5,000 California employees, based at more than 40 facilities around the state and had installed solar energy systems for over 260,000 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, smart electric water heaters, and battery energy storage systems to help customers manage their energy use.

Overall Comments

SolarCity commends the leadership of the California Energy Commission (CEC) in developing the 2016 Integrated Energy Policy Report (IEPR) Update in a timely and efficient manner. We recognize the critical role the energy demand forecast plays in a variety of planning processes, particularly the Long Term Procurement Plan (LTPP) undertaken by the California Public Utilities Commission (CPUC) and the Transmission Planning Process (TPP) undertaken by the California Independent System Operator (CAISO). SolarCity previously submitted comments regarding the 2015 IEPR preliminary electricity demand forecast¹ and has also been an active participant in the Demand Analysis Working Group (DAWG). Interagency collaboration and stakeholder input are critical to developing a robust energy demand forecast for 2017 and beyond that will help guide policy in California. We therefore appreciate the opportunity to comment on the methodological improvements that were presented at the June 23 workshop.

In order to ensure the most accurate forecast possible, we offer the following comments regarding the energy demand forecast:

1. As the peak load impact of behind the meter (BTM) solar photovoltaics (PV) evolves through time, it is important to distinguish between the average peak impact and the marginal impact. A

¹ SolarCity comments available at http://docketpublic.energy.ca.gov/PublicDocuments/15-IEPR-03/TN205455_20150721T165944_Damon_Franz_Comments_SolarCity_Comments__Workshop_on_CA_Energy.pdf

marginal impact factor should only apply to incremental BTM PV additions, and not to the entire existing portfolio.

2. The evolving impact of incremental BTM PV additions on peak load must be based on hourly weather-normalized data, as well as the hourly shape of the probabilistic peaks used for system planning.
3. Adoption modeling must take into account policy implementation that can impact market potential and rates of uptake, such as mandatory time of use (TOU).

1. *Average vs. Marginal Peak Impact Factor*

Based on presentations from Southern California Edison (SCE) and San Diego Gas and Electric (SDG&E) describing their preliminary analysis, they seem to apply a reduction in marginal peak impact to the entire fleet of distributed generation (DG), which causes a step change increase in the peak load forecast. By applying the smaller impact factor to the entire fleet rather than applying that smaller marginal impact factor to only the marginal deployed megawatts (MWs) in each year, the contribution of the DG fleet as a whole is undervalued.²

While SolarCity acknowledges that the incremental peak impact of marginal additions of conventional PV technologies may decrease through time at very high penetration levels in certain local areas, this effect cannot be evaluated through illustrative examples based on actual load data like those provided by the investor owned utilities (IOUs) in their workshop presentations. As a starting point, hourly weather-normalized data is needed to properly assess the evolution of peak load effects of BTM PV in a typical weather year.

2. *Peak Impact Analyses Should Look at Extreme Weather Years in Addition to Average Weather Years*

In addition to looking at the average weather year, it is important to consider the hourly shape of the probabilistic peaks used in transmission and distribution planning (eg. 1-in-10; 1-in-5, etc.). Properly characterizing the hourly shapes of these more extreme weather years is important because the peak impact of solar on a 1-in-10 peak day may be different than on 1-in-2 or a 1-in-5 peak, due to differences in air conditioning load, demand response events, or other factors. The relative coincidence of solar generation with these peak conditions under different weather years could vary, and should be taken into account in the modeling of peak load.

3. *Market Potential and Modeling Adoption*

Economic potential may have historically been underestimated given stale assumptions about rates and technology costs. SolarCity, however, cautions against overestimating market potential by failing to take into account several of the important factors listed in the National Renewable Energy Laboratories' (NREL) presentation,³ particularly as all new solar customers will soon face mandatory TOU. Additionally, it is critical to incorporate changes to baseline consumption patterns from default TOU implementation. While Pacific Gas and Electric Company's (PG&E) described framework for adoption modeling looks promising, more detail is needed as part of a public process.

² SCE and SDG&E's presentations from June 23 workshop available at http://www.energy.ca.gov/2016_energypolicy/documents/2016-06-23_workshop/2016-06-23_presentations.php

³ NREL presentation from June 23 workshop available at http://www.energy.ca.gov/2016_energypolicy/documents/2016-06-23_workshop/2016-06-23_presentations.php



Conclusion

The CEC's load forecast is the first step in the planning processes that utilities and state agencies use to justify system upgrades and infrastructure expansions. The consequence of an overestimated load forecast is a potential increase in sunk costs and under-utilized infrastructure, which results in higher rates for all ratepayers. Ensuring both affordability and reliability in the future will require a new type of cost discipline made possible by more granular load forecasts and a more transparent planning process. This cost discipline will require an evolution of the utility business model where utilities are encouraged and incentivized to find opportunities for cost savings, rather than simply increasing rate base through capital expenditures.

As regulators try to strike this balance between reliability and affordability, technical support and expertise from a wider group of stakeholders will be critical. Again, SolarCity thanks the Commission for the opportunity to comment on the methodological improvements for the energy demand forecast for 2017 and beyond and we look forward to being an active participant in the stakeholder process going forward.

Respectfully submitted,

Damon Franz
Director, Policy and Electricity Markets
SolarCity