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LSA Comments on RETI 2.0 Resource Values Workshop

Attached please find LSA's written comments in response to the RETI 2.0 Resource Values Workshop that took place on March 16, 2016.

Additional submitted attachment is included below.

Submitted online

California Energy Commission
1516 Ninth Street
Sacramento, CA 95814

Re: Docket # *15-RETI-02,* Renewable Energy Transmission Initiative 2.0, Resource Values Workshop

The Large-scale Solar Association ("LSA") appreciated the opportunity to participate in the RETI Resource Values Workshop on March 16th. During the workshop, LSA and several developers shared perspectives on future costs, technological improvements and services solar generation can provide.

Solar costs have declined an impressive 82% in the last six years, with estimated levelized solar photovoltaic (PV) costs ranging from $35/MWh to $57/MWh (*see* Lazard's LCOE 9.0, Nov. 2015). In addition, solar PV panel efficiency is also improving dramatically across technologies with recent announcements of 22.8% efficiencies for crystalline (SunPower) and 22.1% for thin film (First Solar). The solar energy industry expects these cost declines and efficiency improvements to continue. Large-scale solar development is also bringing much-needed jobs and tax revenues to some of the most economically disadvantaged areas of the state.

Much has been written recently about the integration of renewables in general and solar in particular, but that discussion has lacked the critical context of how the grid needs to change to meet our climate goals. We are now challenged to transform a system designed and built for fossil fueled resources to take best advantage of renewables attributes and abilities, including the potential for abundant, low-cost solar energy in the middle of the day.

There are multiple pathways to successful integration all of which should start by ensuring that we are making best use of existing resources. This means eliminating the institutional barriers that, for example, have caused increased imports into California at time of high solar production. California should also continue to promote efforts to increase sharing across the region, smart deployment of storage and targeted water pumping and electric vehicle charging.

Solar generation can offer more than just energy and capacity. Modern solar PV plants can offer ancillary services, operating flexibility, voltage control, fault ride-through, frequency response, primary frequency regulation, frequency droop response, real power control (including some ramping) and (when paired with storage) black start capability. Harnessing these capabilities will require appropriate market mechanisms, but these challenges are institutional, not technological.

Looking ahead, while it is important to understand the what kinds of values renewables can and do provide, further analysis of areas of future commercial interest) are most relevant to transmission planning needs for 50% RPS, the issue at hand. As part of this process, LSA recommends that the RETI examine the CAISO, WDAT, and other California balancing authority interconnection queues in order to use real market data from across the state to better understand future development areas. Significant attention has been paid to complex modeling efforts, but little effort has been made to understand where and why developers are submitting interconnection requests or why requests in certain locations have high dropout rates. LSA was heartened to learn that some of this analysis is underway and strongly recommends that RETI include a close examination of interconnection queues in order to capture where there is likely commercial interest in the next 5-10 years, highlight areas of interest from multiple technologies (including storage) and evaluate those findings in combination with the results of the complex but limited perspectives emerging from tools like the RPS Calculator.

This kind of effort would be particularly welcome because past portfolios haven't been designed to test areas with emerging development interest, i.e., to assess transmission that may be needed to truly utilize these areas and how total development costs compare across zones. The solar industry supports efforts test areas of emerging interest and to identify least-regrets options that can service multiple technologies and geographic areas.

We appreciate the opportunity to provide further input into the RETI 2.0 process. Please let me know if you have any questions about above recommendations.

Respectfully submitted,

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