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LSA Comments on the April 18, 2016 RETI 2.0 Plenary Group Meeting

Attached please find comments of the Large-scale Solar Association (LSA) on the April 18, 2016 RETI 2.0 Plenary Group Meeting.

Additional submitted attachment is included below.

Submitted online

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California Energy Commission
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Docket No. 15-RETI-02

Subject: Comments on the April 18, 2016 RETI 2.0 Plenary Group Meeting

The Large-scale Solar Association (LSA) appreciates the opportunity to provide written comments in response to the discussion that took place during the April 18, 2016 RETI 2.0 Plenary Group Meeting. In addition to responding to the specific questions posed by staff in advance of the meeting, LSA would like to reiterate the shared concern communicated by the Joint Renewable Energy Parties (the Independent Energy Producers, California Wind Energy Association, and LSA) in a letter filed on February 5, 2016 that the work product from RETI 2.0 will serve as a barrier to the development of renewable resources in California rather than a "development guide" to future transmission needs.

After the most recent Plenary Group meeting and two additional meetings of the Environmental and Land Use Technical Group (ELUTG), the intent of this effort and how the outputs will be used remains unclear. LSA understands that this is a data gathering exercise, however we are concerned that adding additional layers of data will not lead to better decisions around transmission planning unless this process and its intended results and future use are clearly delineated. The existing transmission planning process is generally adequate for identifying renewable transmission needs, and this planning process can be improved and leveraged to test higher levels of renewables resources to enhance our understanding of future transmission needs. RETI 2.0, on the other hand, continues to appear to be a loosely knit land-use planning effort that will identify potential impacts throughout the state, rendering future renewable energy development in California more challenging. Finally, in terms of data use we

recommend quality over quantity and are challenged to see the usefulness of including datasets without clear priorities, which should be informed by statewide policies, including the 50% RPS.

Responses to Discussion Questions

1. What conclusions can be drawn from long-term renewable resource portfolios about the kinds of resources that may be important for California utilities to procure by 2030?

The presentations during the April 18th workshop drew a number of conclusions regarding potential fit of various 2030 renewable resource portfolios. LSA questions whether the conclusions drawn were realistic or appropriate given the limitations of the studies presented. The scenarios presented by the CPUC (RPS calculator), NREL (2030 Low Carbon Grid Study), CEERT (Low Carbon Grid Study), and The Nature Conservancy (Optimal Renewable Energy Build-Out Model) largely focused on California resources, and each study sought some sort of balance – whether it be a balance of resources or a balance of development with conservation. LSA agrees that resource diversity, geographic diversity, and environmentally-responsible siting and development practices are all important elements of the ultimate renewable energy portfolio necessary to meet 2030 needs, however, LSA takes issue with a number of the models, assumptions and how the information was presented. None of the presentations aimed to optimize the resource mix over a given time period. Each used a method that attempted to provide information about the potential value of a particular approach—or in the case of the RPS calculator, a chunky and limited view of resource procurement. While interesting, the conclusions that can be drawn from these studies are limited. Going forward, the focus should be on identifying a range of potential optimal solutions that bring overall system value at lowest cost. With that in mind, we offer a number of observations on the presentations:

- **The RPS Calculator**
    - The CPUC presentation on the RPS calculator included presentation of one scenario in the final slide – pitting wind against solar in the long-term, siting declining capacity value and increasing curtailment of solar, which would theoretically favor wind in the 2022-2024 timeframe. The glaring omission in this slide and its overall characterization, however, is the suite of practices and other technologies that can lead to us to more efficient operation of the grid. LSA views solar and wind to be

complementary to a suite of additional integration tools, such as storage, vehicle electrification, changes to importing and exporting practices, and demand response. LSA disagrees with the characterization made by the CPUC, as it presents a narrow perspective on which to base future assumptions or conclusions about future transmission needs.

- LSA has ongoing concerns with the use of a PV ratio as a proxy analyzing resource diversity in the RPS Calculator. We encourage the agencies to find a different metric for resource diversity that examines the penetrations of all generation types, rather than relying on the percentage of a single resource type.

- **2030 Low Carbon Grid Study**
  - An important finding from the NREL study not highlighted during the workshop is that under the high solar scenario, multiple tools help California achieve its climate goals with little to no-cost impact. One of the most notable findings in the study in fact is that the high solar case with flexibility measures and the target case have very similar and favorable results. Here we agree with the overall finding of the study that in order to make the future high-renewables grid economic and reliable, there is need to focus on flexibility measure. These include increasing the efficiency of and participation in CAISO's current energy markets, making smart decisions about how we incentivize and use existing resources and ensuring procurement of new resources that appropriately values cost, carbon reduction and ancillary services.
  - While the study made the best assumptions on technology costs at the time, the solar industry continues to exceed expectations and costs continue to decline. At the end of 2015, solar costs were between $1.59/w and $1.38/w, closing in on the low cost sensitivity used in the study: the SunShot goal of $1/w. Given that the NREL results are highly sensitive to the technology cost assumptions, the continued decline in solar costs should be accounted for in understanding and evaluating the results.
- **The CEERT Geothermal Report**
  - This study looked at understanding the potential value of geothermal resources in the comparison with a select scenario, rather than looking to optimize a cost-effective, best-fit means to achieving renewable energy and climate goals. Because of this, the study offers a limited perspective on potential resource values, which likely depends

on the costs assumptions used. Because the cost assumptions for solar resources are now stale, as noted above, and those assumptions, along with the resource adequacy costs are likely key drivers of the results understanding the interplay of the cost assumptions, what happens when lower costs for various resources are used is critical to evaluating the results and conclusions of this study. Furthermore, we note the assumptions around solar's future capacity value will be strongly dependent on future load shapes and the rest of the generation portfolio. On that point, it isn't clear how possible changes to load shapes were modeled due to TOU rates, which could materially change the results.

- **The Nature Conservancy's RPS Calculator Study**
  - Finally, the TNC study incorporates environmental information to develop a suitability model, however the land-use assumptions made in the study were not vetted by industry; therefore the areas that appear as 'optimal' for renewable development may not actually be appropriate or optimal for development from industry's perspective, based on a variety of factors including local land use policies, physical site characteristics (e.g. hydrology), and interconnection needs.

While each of the studies presented at the April 18th workshop provides some useful information, LSA cautions the agencies against taking resulting scenarios from these studies as the basis for transmission planning decisions moving forward. What is clear is that the goal should be to reflect the transmission needs based on a range of low-cost, optimal portfolios dominated by renewable energy where renewable provide not only energy but also essential reliability services – a portfolio where solar PV can and should play a major role along with other technologies. Given the nascent development of the IRP process, which is tasked with developing optimal portfolios, it remains unclear how exactly this process will be used and useful.

2. What lessons about the role of transmission can we learn from the studies?

The existing transmission system is capable of integrating higher levels of renewables through a suite of practices such as improved incorporation of renewable energy forecasts into the market,

reduction in self-scheduling, economic dispatch, and optimizing the capabilities of storage, demand response and the use of grid-friendly renewables to provide essential reliability services.

3. *Based on these studies and prior information, where should RETI 2.0 focus in examining transmission options and implications?*

Even once the practices outlined above are incorporated and refined, new transmission may be needed; this transmission should serve areas with the most promising renewable resource potential, which LSA recommends be evaluated by using the CAISO and other interconnection queues as a key indicators of development interest and viability. Areas with high levels of interest should then be tested to create a better understanding of the potential transmission needs if they are fully built out (e.g. adding increments 1000 MW at a time to focus areas to create a picture of potential future needs). This information could then be used to help focus on areas of potential high value, where there is strong development interest and for example, the relative cost of the next level upgrade is likely to be the most beneficial.

4. Is the proposed Transmission Assessment Focus Area approach appropriate for guiding the next phase of the RETI 2.0 project?

The primary indicator of renewable energy development potential and interest should be the CAISO and other interconnection queues. LSA suggests that areas with high developer interest should be studied to see what the transmission needs would be if full build-out could occur, as explained above. LSA offers limited feedback on the sample TAFAs for illustrative purposes. More information, expected during the May 2 Agency Executives Workshop, is necessary to allow for a full response:

- The Solano and Sacramento River Valley is an area with substantial technical potential according to the RPS calculator, however very little generation is anticipated in this area relative to the RPS calculator estimates or the current interconnection queue data. Additionally, this is an area that appears to have sensitive ecological resources, which may have already inherently impacted developer interest in the area. LSA recommends that this area not be designated as a priority focus area.

- The Greater Imperial area has significant developer interest according to the interconnection queues, which appears to exceed the estimated existing energy-only transmission capacity. LSA has noted in the context of the DRECP that while developer interest overlaps with Development Focus Areas (DFAs) described in the BLM's Land Use Plan Amendment in Imperial, the area is clearly transmission constrained, which, if prolonged, will severely restrict future development in this area.

We look forward to discussing the recommendations above and getting further clarity on the goals and aims of this effort.

Respectfully submitted,

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