



July 15, 2011

Submitted by email to regionaltransmission@caiso.com

**RE: Comments of the Large-scale Solar Association on the 2011/2012 Transmission Planning Process – Renewable Portfolio Assumptions**

The Large-scale Solar Association (LSA)<sup>1</sup> submits these comments in response to the California Independent System Operator's (CAISO) posting of the proposed renewable portfolio assumptions for the 2011/2012 Transmission Planning Process (TPP). The CAISO proposes to use the CPUC's portfolios from the Long-Term Procurement Plan (LTPP) proceeding. In a June 30<sup>th</sup> Market Notice, the CAISO provided stakeholders with background materials on the four LTPP scenarios – Trajectory, Environmentally-Constrained, Cost-Constrained, and Time-Constrained – and the June 6<sup>th</sup> letter from the California Public Utilities Commission (CPUC) recommending that the CAISO use a revised version of the Cost-Constrained Scenario as the base case for the CAISO's 2011/2012 Transmission Plan.

We support the efforts of the CAISO and CPUC to coordinate their planning efforts in accordance with the May 2010 Memorandum of Understanding. However, we do not support the CPUC's recommendation of the revised Cost-Constrained scenario as the base case, nor do we support the implied determination that the "most likely" scenario should fail to account for commercial interest beyond an outdated discounted core of projects.<sup>2</sup> We also remain concerned that the planning efforts would not be based on the best information available if they rest on these scenarios. Rather, we believe generally that the scenarios are based on out-of-date information and include flawed assumptions. Thus, we strongly urge the CAISO to take the following two steps to keep its planning efforts consistent with the CAISO's tariff requirements:

- Before proceeding with the transmission plan, ensure that the scenario designated as base case in the 2011/2012 Transmission Planning Process appropriately incorporates commercial interest and that the other "stress" scenarios properly incorporate the core commercial projects; and
- Work with the CPUC to establish a timely process to revisit the scenarios and scoring criteria on an annual basis to provide periodic updates of these fundamental planning assumptions and ensure that the state's planning efforts are based on correct and up-to-date information.

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<sup>1</sup> LSA represents 15 of the nation's largest providers of utility-scale solar generating resources. Collectively, LSA's members have contracted to provide over 7 GW of clean, sustainable solar power to California's load-serving entities. Its members develop, own and operate various utility-scale solar technologies, including photovoltaic and solar thermal system designs. LSA, and its individual member companies, are renewable energy industry leaders, advancing solar generation technologies and advocating competitive markets.

<sup>2</sup> As described further in footnote 4, discounted core is somewhat of a misnomer. Discounted core projects that require transmission are not guaranteed to be included in the scenarios.

The critical role that these scenarios are playing in the transmission planning effort and more broadly in the state's other energy planning proceedings demands that they be subject to thorough stakeholder review, and be both accurate and reflective of the most current information available. Unfortunately, these scenarios fall well short of meeting these criteria.

LSA is dismayed by the fact that the scenarios are only now being brought before the CAISO stakeholders as a foundation element in the transmission planning process, and in essentially the same form as they were in the LTPP Scoping Memo (from December 2010). The CAISO released the Draft Planning Assumptions in May. It is not clear why these scenarios were not subject to stakeholder review before the Draft Planning Assumptions were prepared, so that the renewable scenarios could have been included originally with the CAISO's Draft Planning Assumptions. We encourage both agencies to engage stakeholders proactively in providing input regarding the foundational renewable scenarios, rather than distributing this information to stakeholders so late in the process.

### **To Represent the “Most Likely” Scenario in Accordance with the Tariff, the Base Case for the CAISO’s Transmission Plan Must Account for Commercial Interest.**

In the present TPP, LSA's key concern is the CPUC's recommendation that the revised Cost-Constrained scenario be used as the base case for the CAISO's 2011/2012 transmission plan. The Cost-Constrained scenario is not consistent with the concept of the base case set forth in the CAISO's tariff. Specifically, according to Section 24.4.6.6 (Policy-Driven Elements) of the CAISO tariff, “[t]he CAISO will create a *baseline scenario reflecting the **assumptions about resource locations that are most likely to occur*** and one or more reasonable stress scenarios that will be compared to the baseline scenario.” (emphasis added) Accordingly, in the 2010/2011 Transmission Plan, the CAISO designates the hybrid scenario as the “base case because it is considered the more likely scenario to occur.”<sup>3</sup> Not only does the CAISO's tariff require the use of the most likely scenario, but planning transmission around the scenario that best describes the likely course of future generation development helps minimize the risk of stranded transmission investment, while also ensuring that sufficient transmission is planned to, among other things, ensure that California can meet its aggressive RPS goals. In addition, the stress cases studied by the CAISO should be thought of as identifying transmission elements that might be more vulnerable to becoming stranded investment under future changes in regulation or technology, and as such may require additional review in later planning cycles to resolve that uncertainty before being approved. At the same time, the determination to delay transmission itself requires judgment by the CAISO and CPUC about the impact on the large-scale projects that the Investor-Owned Utilities (IOUs) have indicated form the foundation of their 33% RPS compliance plans.

As yet, neither the CPUC nor the CAISO has provided any information suggesting that the Cost-Constrained scenario is the most likely scenario to occur. To the contrary, the Cost-Constrained scenario is based solely on general assumptions about technology cost and does not consider (aside from the inclusion of certain “discounted core” projects)<sup>4</sup> commercial interest, perhaps

<sup>3</sup> CAISO 2010-2011 Transmission Plan (May 18, 2011), p. 14.

<sup>4</sup> The discounted core is not held constant across the scenarios. According to the CPUC's Attachment 2 to the Scoping Memo, “to be included in the discounted core, the project must be a new, repowered, or restarted RPS-eligible

the best information available on the likely future of renewable development in the state, and the very first factor that CAISO is obligated to consider under its tariff. Commercial interest is the best indicator of what is happening on the ground, where developers are investing their resources and focusing their activities. Among the LTPP scenarios, only the Trajectory scenario places any weight on commercial interest beyond the discounted core, though even that scenario fails to fully account for up-to-date and comprehensive commercial interest. If any of the LTPP scenarios are to be used as a base case, the Trajectory scenario appears to be most appropriate, though the discounted core must be updated to reflect current market conditions and projects' statuses.

Generally speaking, the Trajectory scenario has been treated as a de facto base case in the LTPP, as it was identified as the scenario upon which different load sensitivities would be run. Shifting from the Trajectory to the Cost-Constrained scenario sends a negative signal to the market about the potential for large-scale solar projects in California, which are much diminished in the Cost-Constrained case. Combined with the changes to transmission cost recovery, using the Cost-Constrained scenario as the base case would provide the appearance of deterring needed transmission development and push the renewables market towards an artificial outcome – one that is based on flawed assumptions using static technology costs. In providing for a stable renewables market, it is critical that planning efforts account for renewable procurement to date and do not undermine existing renewable contracts.

In addition, the Cost-Constrained scenario does not appear to be consistent with the transmission approvals included in the CAISO's 2010/2011 transmission plan. While the CPUC and the CAISO provided assurances that this planning effort will not lead to revisiting past procurement decisions or transmission plans, failing to include this information in the plan sends troubling and confusing signals to the renewables market and raises questions about the CPUC and CAISO's commitment to their prior proceedings and determinations. In addition, the Cost-Constrained scenario appears to exclude transmission lines determined to be needed to support certain discounted core projects. It is unclear how these transmission lines will be treated in the future CAISO transmission planning studies. To provide stability and certainty, the CPUC and the CAISO must account for the renewables contracts that have been selected through competitive solicitations, those that are moving through the contracting and permit approval process, and those contracts that have been approved by the CPUC, in addition to the transmission lines that were found needed in previous planning cycles.

As noted above, the Trajectory scenario is more representative of the commercial interest at the time that the LTPP scenarios were developed – and, therefore, represents a more likely future than the other LTPP scenarios. However, the Trajectory scenario – and the other LTPP scenarios – rely on out-of-date information and must be updated before serving as the basis for the CAISO's Transmission Plan. Specifically, the Trajectory scenario does not include the most up-to-date

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generation project with: 1.) a signed power purchase agreement (PPA) either under review or already approved by the Commission as of June 1, 2010; and 2.) its major permit (Application for Certification if under the jurisdiction of the Energy Commission; Conditional Use Permit in most other cases) filed with and deemed data adequate by the appropriate agency, as of March 1, 2010.” However, even if a project meets these criteria and is deemed a discounted core project, it is not necessarily included in the different scenarios if it requires new transmission. Discounted core projects are only forced into the scenarios if discounted core projects would provide at least 67% of the energy (GWh) that could be accommodated over the new transmission line. Although discounted core projects are included in the scenarios, it is unclear which projects, if any, meet this 67% threshold and which projects are simply included based on meeting the scenario scoring criteria.

information on commercial interest from procurement and from the interconnection queue and sets its discounted core based on permitting and contracting status as of March 2010 and June 2010, respectively. So, simply using the Trajectory scenario in its current form as the base case, while a marginally better approach, still does not appropriately reflect the available commercial information. The underlying commercial information used to develop the Trajectory scenario must be updated if it is to be used as the base case. In addition, the treatment of discounted core projects in the LTPP scenarios and RPS calculator needs to be evaluated further – the amount of discounted core projects included varies by scenario. For any individual discounted core project included in a specific scenario, it is not clear whether the project was added initially or forced to compete with other commercial and generic projects before it was included in the scenario. Second, the IOUs recently filed testimony in the LTPP that included an IOU Common Case, with a different renewable buildout than the CPUC’s scenarios, based on commercial projections as of April 2011.<sup>5</sup> The chart below, copied from the Joint IOU Testimony in the LTPP, summarizes the renewable buildout under the different CPUC scenarios compared with the buildout under the IOUs scenario. This chart demonstrates significant differences in the expected renewable buildout in the Cost-Constrained, Trajectory, and IOU Common Scenarios. In particular, the chart indicates that, based on their own procurement expectations, the IOUs are anticipating a large-scale solar build-out significantly greater than that represented in the Cost-Constrained Scenario (and even larger than the Trajectory Scenario).

**Table 27: 2020 Renewable Resource Mix by Scenario (MW)**

	Biogas	Biomass	Geo-thermal	Hydro	Large PV	Small PV	Solar Thermal	Wind
CPUC Trajectory Scenario	212	657	1,821	843	3,543	1,052	3,841	8,661
CPUC Environmentally-Constrained Scenario	234	781	1,771	879	2,033	6,984	1,796	6,895
CPUC Cost-Constrained Scenario	242	792	2,117	851	1,841	1,052	2,003	10,187
CPUC Time-Constrained Scenario	240	725	1,703	933	2,511	1,947	1,808	10,523
IOU Common Scenarios	-	894	1,858	702	5,869	109	3,491	7,602

\* From Appendix A, Joint IOU Testimony in Track 1 of the LTPP (Submitted July 1, 2011)

Finally, the Trajectory scenario fails to account for the suite of projects that have submitted interconnection requests to the CAISO. In the 2010/2011 Transmission Plan, the CAISO used both the interconnection queue and the CPUC discounted core as criteria to serve as a proxy for commercial interest, while recognizing that “the first and most direct way to demonstrate commercial interest is to participate in the ISO queue-based process.” We recognize that it may

<sup>5</sup> Communication with Meghan Mao, SCE at July 11<sup>th</sup> CAISO/IOU Joint Workshop on LTPP Track 1 Testimony.

not be appropriate to replicate the entire queue in the base case scenario, however the queue does provide important information about the magnitude and location of renewable development interest in different areas. The CAISO should ensure that the base case scenario is consistent with the general trends reflected in the queue.

Ideally, the CAISO and CPUC would endeavor to develop as a base case a new scenario that incorporates the best information about the current, viable renewable projects in the contracting, permitting, and interconnection queues. Given the breadth of the planning process, the foundational role these scenarios are playing in energy and transmission planning, and the significant transition now underway at the CAISO relating to policy-based transmission planning, the need to support market certainty for renewables demands as much precision as the agencies can muster. After ensuring that the base case properly accounts for commercial interest, the CAISO should then consider stress cases that imply regulatory or technology shifts that could eventually affect the renewable market. The stress cases will continue to serve their intended function of highlighting uncertainty about key factors and pointing to the transmission elements that are potentially more vulnerable to becoming stranded investment; this risk can then be weighed by the CPUC against the risks inherent in delaying transmission, such as failure to achieve policy goals.

### **The LTPP Scenarios Are Based on Faulty, Out-of-date Information.**

LSA has been participating actively in the CPUC's LTPP proceeding. In that proceeding, we have raised concerns about the criteria used to develop the renewables scenarios. The scenarios proposed for use in the CAISO's 2011/2012 TPP were originally proposed by the CPUC over a year ago. In June 2010, the scenarios were presented to stakeholders and subject to only very abbreviated stakeholder input. In December 2010, the scenarios were released in a revised form, although at the time many of the inputs were unchanged. The scenarios have essentially remained unchanged. Since then, new information has become available and stakeholders have had some time to review the scenarios and underlying data and offer corrections and comments, which should be incorporated into the scenarios BEFORE they are used in this and other planning activities. Specifically, the scenarios should be updated to ensure that:

- All of the scenarios are consistent with CAISO's 2010/2011 Transmission Plan and include the approved transmission lines from that Plan
- The formula for triggering inclusion of an transmission upgrade to serve discounted core projects, rather than being based on energy ("67% of GWh"), be revised to a more appropriate metric, perhaps based on capacity utilization (i.e. "% of MW") that better aligns with the characteristics of renewable generation
- All scenarios include updated information on commercial projects and an updated discounted core. In particular, this should include:
  - Revisiting the CPUC list of commercial projects and the discounted core to include new information that has become available since June 2010 (when the scenarios were originally released for the LTPP)
  - Updating the scenarios to account for CAISO LGIAs and queue information
  - Correcting the treatment of Fairmont CREZ discounted core projects, which should be considered as discounted core projects in the Tehachapi Renewable Transmission Project CREZ (Tehachapi)
  - Confirming that all CREZ are taken into account in allocation of transmission capacity

- All scenarios include updated technology cost information
- All scenarios incorporate the updates made to the Cost-Constrained scenario, as described in attachments to the June 6<sup>th</sup> letter from the CPUC to the CAISO

The renewables market, both within and outside of California, is rapidly changing – and the cost data used to develop the original LTPP renewable scenarios is out-of-date. The Cost-Constrained scenario is based on assumptions regarding technology, financing and development costs derived from static and rapidly aging data. Despite the rapid changes in renewable technology and market evolution, the scenario reflects no sensitivities or other analysis capturing the potential for significant technology costs shifts to occur in the next ten years. Using static costs to develop this scenario essentially freezes renewable technology development by favoring mature technologies with lower costs currently over promising, but less mature, technologies with higher costs now, but potentially lower costs over the timeframe analyzed in the planning process. Thus, the Cost-Constrained scenario may not actually represent the lowest cost scenario over the planning horizon.

LSA also has concerns about the flawed assumptions used in the environmental scoring methodology. LSA has raised these concerns in the LTPP and with CPUC staff, but they have not been addressed in that proceeding. In short, the environmental scoring methodology used to develop the LTPP scenarios uses the almost the same environmental criteria as RETI, but employs a novel and markedly different weighting system. The LTPP methodology uses the project footprint as a multiplier against the remaining seven environmental indicators, in contrast to RETI, which used the project footprint of as one of eight equally-weighted criteria. Moreover, the project footprints are based on default footprint numbers that weigh heavily against large solar projects *and* solar-related transmission. Nothing in the LTPP explains how this weighting corresponds to actual environmental concern or why other environmental indicators, like transmission right-of-way, are presumed to be directly proportional to project footprint in this scoring methodology.

## Conclusion

In closing, LSA requests that the CAISO take the time needed to review these CPUC scenarios and determine whether updates or modifications are needed to the proposed scenarios to meet the CAISO's needs for the TPP and contribute to the broader goals that this planning effort is seeking to achieve. Specifically, prescribing a scenario that does not adequately account for commercial interest as a base case for transmission planning creates a serious and troubling disconnect between renewables development and transmission development, and would simply be inconsistent with the CAISO's tariff requirements. This result appears to be directly contrary to what the state is trying to achieve through better coordination and consistency in assumptions. The chosen scenario effectively ignores the information known by both the CPUC and the CAISO about the future of renewables development in the state.

While LSA applauds the increasing levels of cooperation between the CAISO and CPUC in the planning, permitting and construction of the transmission infrastructure necessary for California to realize its ambitious renewable energy and green house gas reduction goals, we believe that additional effort is required to develop the fundamental assumptions to serve as the basis for these planning efforts. Consistency of assumptions between the CPUC and the CAISO is a laudable goal, but simple consistency is not sufficient. These assumptions underlying these

planning efforts must be both accurate and up-to-date to provide a solid foundation for energy and transmission planning.

Respectfully submitted,

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Kristin Burford  
Policy Director, Large-scale Solar Association