



**Comments of First Solar, Inc. on
California ISO's Deliverability Assessment Methodology Issue Paper
May 16, 2019**

First Solar, Inc. submits these comments to the California ISO's Deliverability Assessment Methodology Issue Paper dated April 24, 2019. First Solar appreciates the CAISO's responsiveness to stakeholder comments and the CAISO's decision to initiate a separate stakeholder proceeding this year to examine the complex set of issues raised by changing the deliverability assessment methodology.

The process is facilitating increased stakeholder understanding of the CAISO's study methodology and an important conversation about the impacts on the commercial interests of renewable generation developers that have already invested in transmission upgrades. We appreciate the CAISO's willingness to consider a new framework to accompany a shift in the deliverability assessment methodology that will mitigate the congestion and curtailment risk that the CAISO has identified would result from methodology change. While the CAISO is pushing to change its deliverability allocation methodology to measure system conditions when resource adequacy resources are needed most, the state relies on supply from solar resources when the sun is shining. The consequences of the shift in methodology on the ability of the state to continue to work towards its GHG reduction goals need to be well understood and managed before the CAISO implements these changes.

First Solar raises an initial series of questions and suggestions based on our understanding from the stakeholder call, and we look forward to continuing to engage in this process as the CAISO scopes this initiative to examine these important issues.

Sensitivities, "off-peak" studies, and studies identifying transmission upgrades needed to support gross consumption conditions

The CAISO asserts that transmission upgrades to support deliverability of additional solar resources under peak gross consumption conditions is a matter of economics or policy rather than a transmission or reliability decision. Given the importance of developing and designing a transmission grid to accommodate California's policy goals, and the potential impacts of the new methodology on existing and new solar development to meet energy needs, First Solar believes this perspective should be modified.



As parties have indicated in prior comments, the current transmission planning process simply won't work, for a number of reasons, to relieve constraints and congestion caused by CAISO's shift in methodology. CAISO has indicated a willingness to examine its transmission planning process in a separate initiative. First Solar believes that any changes made to the methodology should be done as a comprehensive package if the CAISO plans to rely on its transmission planning process as part of the solution. Otherwise, there will be a significant time lag between the increased curtailment and the transmission solution to mitigate it, given the current process. If the transmission planning process is not reformed, then the generator interconnection process should continue to be used to require that upgrades be constructed to mitigate curtailment and congestion by the time the new interconnecting generator is operational. Otherwise, there is a substantial risk of harm to renewable generators and state policy goals.

We suggest that CAISO perform studies to evaluate sensitivities, off-peak conditions and gross load consumption conditions to demonstrate impacts on energy deliveries and incorporate the results into the generator interconnection process, or a reformed transmission planning process.

We also suggest that to the extent the studies we suggest above do not cover it, the CAISO should conduct a congestion and curtailment analysis during each planning cycle and develop a plan to mitigate congestion. This could be done either through obligations imposed on new interconnecting generators or through the current transmission plan. However, if done via the transmission planning process, anticipated congestion and curtailment associated with new interconnecting facilities should be mitigated by the time the facility is anticipated to come on line. This analysis should be conducted for both energy-only facilities and those requesting deliverability.

First Solar also requests that the CAISO elaborate on why studying capacity under the current methodology no longer yields valuable results for deliverability, for identifying transmission needs or for meeting the state's increased renewables portfolio goals. We request that the CAISO provide greater clarity around the purpose of the change in methodology, explain how the new methodology will not degrade or impair the deliverability of solar that provides resource adequacy under current power purchase agreements, and provide examples illustrating how solar would be counted for resource adequacy purposes.

Finally, we believe that stakeholders would benefit from step-by-step examples illustrating how solar and wind generation is studied in the CAISO's current methodology and how it would be studied under the revised methodology. As is apparent from the stakeholder



calls, a lot of confusion arises from not understanding CAISO's basic deliverability methodology today. If this is better understood, it will make it easier to evaluate the revised methodology. Therefore, we request examples to better understand 1) how the exceedance values are applied in areas of high solar or combined renewable areas; 2) how the capacity values were generated or applied in the High and Secondary Needs hours; and 3) what seasonal snapshots in time would be studied.

Energy-only issues

CAISO makes a number of observations about energy-only projects and study implications in its issue paper. We believe the issue of increasing development of energy-only projects needs to be examined and doing it as part of this stakeholder process is in line with the important issues being discussed. We suggest that studies be done to assess impact of current energy-only projects in the queue on anticipated congestion and curtailment and that this process evaluate whether upgrades are needed to accommodate energy deliveries for these projects.

The CAISO's decision to tighten and increasingly limit the ability of projects to obtain and retain deliverability has caused important and viable projects to be cast into the energy-only category. While energy-only status still poses significant barriers to contracting, energy-only projects continue to be developed because interconnection customers have invested significant amounts in land, permitting and interconnection costs. Those interconnection customers are hoping for a deliverability allocation under the CAISO recently-reformed rules, but there's a chance that these projects will proceed to commercial operation as energy-only projects.

CAISO notes that in its proposed deliverability assessment methodology it will assume that energy-only generators are off-line unless needed to balance load. We request that the CAISO provide additional clarity about this assumption and why it is reasonable, as well as how it plans to manage the infrastructure upgrades to accommodate increased energy deliveries as it pushes more projects into the energy-only category.

Payment for network upgrades identified to minimize curtailment

The CAISO requested stakeholder feedback on how upgrades identified through studies designed to evaluate and minimize the impact on curtailment be funded. First Solar's initial reaction to this question is that these upgrades would be funded the same way they are today – by the interconnection customer and reimbursed once the interconnection customer is



operational. Since the transmission infrastructure development is supporting compliance with state policy goals and supporting the growth of a transmission grid capable of incorporating greater amounts of renewable resources without excessive curtailment, it follows that the reimbursement framework should be consistent with current practice.

Finally, with respect to the upgrades triggered by these studies to mitigate “excessive curtailment,” we request that the CAISO offer some clarity around what it considers “excessive curtailment” and what triggers it would consider around curtailment levels before requiring upgrades to mitigate it.

Process of identifying system upgrades needed to relieve congestion & nexus with the CAISO’s transmission planning process

We request greater clarification around the anticipated nexus between the generator interconnection process and the transmission planning process and how the new methodology will be incorporated to drive network upgrades that may be addressed through the transmission planning process.

Given the limitations of the TEAM methodology noted in prior comments from stakeholders and the CAISO’s observation that refinements to TEAM are out of scope, how does the CAISO anticipate delivery network upgrades showing up in the transmission planning process for consideration and how will that approval process work? CAISO notes that the locational marginal price is typically low during periods where solar resources are being curtailed, so how does the CAISO anticipate approving economic transmission projects to mitigate curtailment?

Transferability of deliverability

First Solar agrees with the comments and requests for clarification submitted by EDF-Renewables related to this topic.

First Solar looks forward to continuing to engage in this stakeholder process. Thank you for your consideration of these comments.

Sincerely,

Vladimir Chadliev
Director, Global Grid Integration