



Comments of First Solar, Inc. on  
California ISO's 2019-2020 Draft Study Plan  
March 14, 2019

First Solar, Inc. submits these comments to the California ISO's draft 2019-2020 Transmission Planning Process Unified Planning Assumptions and Study Plan. Our comments are informed by our review of the draft 2018-19 Transmission Plan and the CAISO's posted materials and discussion during its December 18, 2018 stakeholder call related to revisions to its transmission plan deliverability study methodology.

First Solar appreciates the extensive work and study that goes into developing and drafting the transmission plan. It is a very useful document that shows how the CAISO balances the many differing perspectives offered by stakeholders throughout the process. We believe that in this time of transition, when policy drivers and renewable development dynamics are evolving along with needs from the transmission grid, it would be very helpful to add to the planned engagement with stakeholders this year.

First Solar requests that the CAISO schedule a workshop with stakeholders to review some of the persistent comments CAISO is receiving related to a number of these topics. We strongly agree with other commenters that there be further workshops regarding the assumptions and deliverability methodology prior to the 2019-2020 policy-driven sensitivity studies.

While we understand the relationship and dependencies between the CPUC proceedings and the CAISO's planning process, we believe that there are growing gaps in the assumptions driving how the grid is being planned and what is happening on the ground in California with renewable resource development. In addition, we believe there are complex issues associated with revising the assumptions around deliverability that should be worked through before the CAISO implements its new allocation methodology next year.

Our comments are focused on 6 general topics:

1. Deliverability study methodology
2. Including frequency response capabilities of utility-scale solar, wind and PVS
3. Policy studies & energy only assumptions
4. Expanding beyond CPUC portfolios for identifying areas of actual or likely renewable development to support California policy
5. Treatment of export limits in curtailment studies



## 1. Deliverability study methodology

First Solar was one of the parties urging the CAISO to hold further workshops to discuss the implications of applying the revised methodology for assessing deliverability and were pleased to see that the CAISO responded to stakeholder feedback to delay implementation for purposes of the allocating transmission plan deliverability to Q1 of 2020.

However, as CAISO has already deployed the revised methodology in the 2018-19 Transmission Plan to assess reliable deliverability of renewable generation portfolios, we believe the work should continue now to examine the study assumptions and results and evaluate the implications for the renewable generation fleet in California. We have a number of questions that we believe would benefit from a workshop-style format engagement.

First, we are not clear how this new methodology is aligned with the methodology used by the CPUC to calculate the effective load carrying capability of variable energy resources, or why developing a separate paradigm for evaluating capacity is required. Rather than developing a new methodology for valuing capacity on the system, the focus should be to test the transmission system for where it could support new renewable development using sensitivity analyses and plan for category 1 or 2 transmission upgrades. LSA provided valuable comments on this point in its November 30, 2018 submittal.

Second, CAISO mentions incorporating LDNU/ADNU information from the GIP studies in its work on RA and NQC development (see, e.g., Slide 24/page 35 of the November 16, 2018). First Solar would like to understand how the CAISO considers this information to inform its policy review of transmission that may be needed to support additional renewable development. Developers see the results only in their GIP study reports, available to a limited number of interconnection customers and not transparent in the broader study results for California. The LDNUs and ADNUs triggered by generator interconnection requests could be pulled in as portfolio mitigations to deliverability of generation in the sensitivity studies.

Some areas in the CPUC-provided portfolios are not representative of pending interconnection requests being assessed under the CAISO's GIP study process, and it is not clear whether the CPUC is evaluating transmission costs that may allow an increase in generation deliverability. We believe that stakeholders would benefit from greater transparency and understanding of the interchange of information between the CPUC and CAISO and how costs and options are taken into account in driving portfolio definition.



Finally, we note the comment on page 204 of the draft 2018-19 plan that CAISO plans to “refine the existing transmission capability estimates and provide updated estimates as an input in support of the ongoing IRP process.” First Solar believes the stakeholders would benefit from a better understanding of this process and results.

## **2) Including frequency response capabilities of utility-scale solar, wind and PVS**

Solar and wind resources are capable of providing primary frequency response. Inverter-based resources should be included in the CAISO’s transmission plan assessment of frequency response and overgeneration issues. Recent developments in reporting requirements under FERC Order 845 and NERC standards means that data is available to allow inclusion of these resources in CAISO’s transmission plan studies. For the last couple of years, NERC has requested validation of dynamic models based on field tests to show the capability of non-synchronous generation in responding to voltage and frequency changes at the point of interconnection. CAISO should request these results, certified by WECC for MOD 26 and MOD 27 NERC compliance, as inputs to its assessment of frequency response capabilities.

With the megawatts of utility-scale solar serving California load and supporting compliance with RPS standards continuing to grow, these resources need to be evaluated for the additional services they provide. If consideration is needed for compensation methods or contract revisions to support better integration of these resources into the fleet of generators capable of providing essential reliability services, we also urge CAISO to consider a parallel path of investigating needed policy changes.

## **3) Policy studies & energy only assumptions**

A number of parties have raised the concern that assuming large amounts of energy-only supply is inconsistent with the reality of contracted-for utility-scale solar generation in California. Parties have commented that load serving entities remain focused on procuring resources with deliverability. Assuming 40% energy-only seems unrealistic and detrimental comprehensive planning given the current course. First Solar has noted CAISO’s response in its 2018-19 Transmission Plan to these concerns, like the statement on page 8 where CAISO indicates that the assumptions are provided by the CPUC and that CAISO is continuing to coordinate with CPUC staff and referring stakeholders to the CPUC.



It seems that CAISO's independent obligation to plan for a transmission grid that can support planned renewable generation development to meet California policy goals should give it the flexibility to enhance the assumptions about development to reflect reality. Similar to our questions about assumptions regarding export limits, we would like to better understand the implications for assuming that such a large percentage of new renewable development will materialize as energy-only.

First Solar suggests that as part of the 2019-2020 transmission planning process the CAISO take a holistic look at the impacts to achieving state policy where the transmission infrastructure being planned is not keeping up with the desire by LSEs for deliverable resources.

#### **4) Expanding beyond CPUC portfolios for identifying areas of actual or likely renewable development to support California policy**

The CAISO should consider areas being proposed by renewable development in its generator interconnection queues, particularly where interconnection customers have received deliverability, are current on postings under their generator interconnection agreements and proceeding towards commercial operation. CAISO should also consider areas evaluated by the California Energy Commission as environmentally conducive to renewable development and providing preferred resource development locations, rather than exclusively relying on the output of the RESOLVE model. At a minimum, we believe a comparison of assumptions behind development locations for variable energy resources should be included in the transmission plan.

As CAISO notes, its studies are inputs to the CPUC's processes and vice versa, so there's potential for a circular process that has odd results creating challenges for renewable development. The process of relying on the CPUC portfolios does not seem to be working to adequately plan for transmission infrastructure that supports actual development underway to serve California's ambitious climate goals. We are concerned that the grid is not being planned to support real development in areas where interconnections customers have spent tens of millions of dollars on projects and where network upgrade costs might be mitigated with better least-cost, nested transmission solutions.

#### **5) Treatment of export limits**

CAISO has received a variety of comments on its production cost simulation study methodology and assumptions regarding export limits. While we appreciate that studying the scenario of no export limit provides a good approximation of renewable curtailment related to transmission constraints within California, we believe that CAISO should include a scenario where it does not



assume the ability to export and test the congestion that results. Given that California is a net importer much of the time, it isn't clear to us why the transmission plan shouldn't study the scenario where exports are constrained further to produce results about possible transmission solutions that could relieve congestion and avoid curtailments.

Thank you for your consideration of these comments.

Sincerely,

Vladimir Chadliev  
Director, Global Grid Integration