



Generation Deliverability Assessment

Submitted by	Organization	Date Submitted
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NextEra Energy Resources, LLC (NextEra) appreciates the opportunity to comment on the California ISO's (CAISO) effort to update the deliverability assessment methodology.

Much of the August 5th stakeholder meeting focused on concerns that curtailment of renewable resources would be exacerbated by the reduction in transmission infrastructure needed to award variable energy resources Full Capacity Deliverability Status (FCDS) under the proposed new deliverability assessment and on whether coupling a solution to that consequence constitutes a necessary precondition to implementing the updated methodology. NextEra believes the controversy largely amounts to fighting a past battle, rather than concentrating our collective gaze on future challenges.

The present issue arises because the updated deliverability assessment proposes modeling significantly reduced dispatch levels for variable generators, which will lessen the need for new transmission infrastructure. However, the CAISO noted in its hybrid resources stakeholder process that 42% of all projects in the latest queue involve generation coupled with storage. That trend will only accelerate. The result will be a probable future in which hybrid low-carbon resources, whether single resource ID or dual ID configurations, will be studied at or relatively near their interconnection injection capacity limit.

For this and other reasons, NextEra believes the two elements can, and should, proceed independently and sequentially. In short, NextEra generally supports the CAISO adopting an updated deliverability assessment methodology, subject to additional refinements set forth below, and subsequently proceeding with a more rigorous examination of potential solutions to California's growing curtailment challenge. As the CAISO acknowledges, any such solution involving application of penalty prices or a new transmission service is likely to be complex, should be properly understood, and must properly balance the interests of ratepayers and both past and future generators, as well as consider the impact of technological innovation.

NextEra Conditionally Supports Moving Forward with Adoption of the Revised Deliverability Assessment Methodology

Consistent with the comments of stakeholders considering this matter last year, NextEra agrees that changes occurring on California's electric system warrant the CAISO capturing a broader range of study scenarios than currently done under the on-peak

deliverability assessment. NextEra further finds value in utilizing an assessment that allows for greater availability of Transmission Plan Deliverability (TPD) allocation for new resources that should result from the declining qualifying capacity values of variable energy resources, especially solar, due to the adoption by the CPUC of an Effective Load Carrying Capacity (ELCC) methodology. Similarly, identifying fewer transmission upgrades to support FCDS reduces a project's commercial risk and contracting complexity. But those interests must be balanced against the effectiveness of the deliverability assessment to preserve system reliability and not unduly harm the commercial interest of existing generators.

In light of these considerations, NextEra respectfully questions some of the proposed assumptions underlying the revised deliverability assessment. Although a gross simplification, ELCC looks at 8760 hours and is an average of multiple probabilistic outcomes. Thus, to the extent the CAISO's deliverability snap-shot ignores the performance of resources over a significant number of hours and therefore fails to identify infrastructure needed to make those resources deliverable in those hours, the level of reliability resulting from the transmission system's capability will be less than that assumed by the CPUC's ELCC analysis. That mismatch should be reasonably minimized.

Here, for example, the CAISO proposes to use a "50% exceedance level" under the Secondary System Need scenario due to "mild risk of capacity shortage." But the mild capacity shortage risk is, in part, due to the high probability of output of variable generation during the period covered by that scenario. Moreover, while the snapshot does not match the hours of greatest curtailment risk, it more closely conforms to those instances than the High System Need scenario. Accordingly, selecting a lower exceedance level to determine generator dispatch, particularly for the Secondary System Scenario, e.g. 20% or 30%, would seem to correspond sufficiently to the ELCC and partially mitigate the concerns over curtailment.

The CAISO presentation at slide 25 states that the "GIP may identify LDNU/ADNUs in in the primary system need scenario and ADNUs in the secondary system need scenario." NextEra recommends that the Secondary System Need scenario also identify LDNUs. Expanding the scope of DNUs that can be identified in either scenario will similarly serve as a bridge to addressing curtailment risk. Absent adoption of this recommendation, NextEra requests further explanation of the rationale for the distinction.

Given the prevalence of hybrid resources in the queue, NextEra also recommends the CAISO specify, to the extent currently possible given the status of CPUC review, how those resources will be studied under the two deliverability scenarios. For dual resource ID configurations, NextEra assumes that the storage resource will be fully credited to its nameplate capacity, consistent with CPUC counting criteria, during the High System Need scenario, but it is not clear how storage will be addressed in the Secondary System Need scenario when there is more of a likelihood of charging. Greater clarification would be appreciated. It is also assumed that treatment of single resource ID configurations will be more fully addressed in the pending hybrid resource stakeholder process and at the CPUC.

NextEra Recommends Further Evaluation of Potential Solutions to Renewable Resource Curtailment Prior to Adopting the Significant Market Change Included in the Current Proposal

Curtailment of renewable generation is a problem in California, and it will become increasingly so as the State advances towards its carbon reduction goals. However, NextEra believes it is unnecessary to address these curtailment issues by rushing fundamental changes to the CAISO market structure through transmission planning without methodically vetting the consequences among the various effected constituent groups.

Simply put, NextEra appreciates the CAISO's efforts to respond to legitimate concerns of the renewable development community, but requests more time be given to evaluating the various options and proposals put forth. As an initial matter, solutions should be commensurate with the problem and cognizant of who currently bears the cost of the problem as well as who would bear the cost of any solution.

It is not entirely clear whether the CAISO, or any party to these discussions, fully understands the scope of how the cost of curtailments are presently borne. The CAISO correctly recognizes that supporting deliverability of renewable resources to reduce curtailment largely involves an economic decision or policy-driven concern, rather than satisfying a reliability concern. That cost can be estimated from a societal standpoint by valuing, among other potential items, the lost energy and environmental attributes and increased capital investments.

However, depending on the underlying commercial arrangements, who actually bears that cost may be different. For instance, many legacy contracts with the investor-owned utilities involve an allocation of the risk of curtailment with the resource owner taking an initial "bucket" of hours and the utility ratepayers assuming responsibility for any curtailment that exceeds that level. There is further the critical distinction between "economic" and "reliability" curtailment, with the former being more frequently compensated. These issues were likely a matter of negotiation and, it could be, but is not necessarily true, that the developer accounted for the risk of realization of full curtailment in the underlying energy cost. The point is that in some cases load already bears that cost and it may be prudent to devise a solution that allows that constituency to determine when and how additional costs are spent to alleviate the problem. Alternatively, it could be that generators bear the cost, but additional consideration is needed.

However, at a minimum, the CAISO can ensure more market clarity and efficient administration of contracts by clearly delineating what constitutes an economic or a reliability curtailment. Reliability curtailments should reflect extreme conditions on the system that do not involve routine congestion management, including Exceptional Dispatch.

Further, in addition to the many complex questions regarding the impact various options may have on bidding behavior, potential anti-competitive behavior, siting and interconnection incentives, etc, there are foundational considerations of how the options impact the development of other market solutions, such as storage. Does increasing the

output of renewable resources during periods of local congestion increase the probability of overgeneration? If so, was that the most efficient solution? NextEra does not have answers to these questions. But they do seem to warrant careful assessment by all impacted parties and for this reason, NextEra recommends further vetting before going beyond selection of Option 1, an option which was not recommended by the CAISO.

Thank you for considering these comments.