COMMENTS OF THE OFFICE OF RATEPAYER ADVOCATES OF THE CALIFORNIA PUBLIC UTILITIES COMMISSION ON THE CAISO'S DRAFT 2015-2016 TRANSMISSION STUDY PLAN

Submitted By	Company	Date Submitted
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I. INTRODUCTION

The Office of Ratepayers Advocates' (ORA) provides these comments on the California Independent System Operator (CAISO) draft Study Plan for the 2015-2016 Transmission Planning Process dated February 17, 2015. In sum, ORA makes the following recommendations:

1. The CAISO should respond to each round of stakeholder comments and provide a schedule thereof in the Study Plan;
2. ORA supports the CAISO's 50% renewable portfolio special study approach that assumes the renewable generation to be energy-only resources;
3. The CAISO should also study the energy-only option for all generation resources;
4. Preferred resources such as distributed generation and energy storage should be modeled online in the initial base cases rather than only using them as potential mitigation measures;
5. To the extent CAISO is only willing to use preferred resources as potential mitigation measures, CAISO should consider the preferred resources in the three investor owned utilities' (IOUs) service territories; and

6. The Study Plan should include the details of the CAISO Reliability Assessment involving the Qualifying Facility (QF) generation retirements in the Pacific Gas & Electric (PG&E) local areas.

II. DISCUSSION

1. Schedule of CAISO Responses the 2015-2016 Planning Cycle

Background

Table 2-1 of the Study Plan provides the schedule for the 2015-2016 planning cycle. It does not appear to delineate when the CAISO responds to each round of Stakeholder comments.

ORA Recommendations

ORA believes that stakeholders' review, the CAISO's resulting responses and changes to the Study Plan are integral to creating this ever improving process, but this important aspect has not received much attention in the past. ORA requests that Table 2-1 should be expanded to identify when such responses would be available. ORA proposes the following schedule (Table 1) for the CAISO's consideration.

Table 1: Suggested CAISO Response Schedule

Due Date	2015-2016 Activity
November 6, 2015	CAISO responses to stakeholder comments on the 2014-2015 Conceptual Statewide Plan Update for the 2015-2016 Transmission Planning Cycle
November 20, 2015	CAISO responses to stakeholder comments on the September 21 – 22, 2015 Stakeholder Meeting stakeholder meeting #2 to discuss the reliability study results, IOUs' reliability projects, and the Conceptual Statewide Plan with stakeholders.
January 16, 2016	CAISO responses to stakeholder comments on the November

	16 - 17, 2015 Stakeholder Meeting stakeholder meeting #3 to present the preliminary assessment of the policy driven & economic planning study results and brief stakeholders on the projects recommended as being needed that are less than $50 million.
March 26, 2016	CAISO responses to stakeholder comments on the 2015-16 Draft Plan and stakeholder meeting #4 to discuss the transmission project approval recommendations, identified transmission elements, and the content of the Transmission Plan.

2. ORA supports the CAISO's 50% renewable portfolio special study approach that assumes the renewable generation to be energy-only resources

Background

Governor Brown's announcement of a 50% renewable energy goal for California has a target date of 2030. Considerable detail about the goal and how it will be assessed remains to be resolved. It is not yet a formal state approved policy requirement, so in accordance with the CAISO tariff, the CAISO cannot use it as a basis for approving policy-driven transmission. The CAISO and the state energy agencies want to explore informational analysis to understand potential transmission implications of increased grid connected renewable generation – to the extent the goal ultimately calls for such generation. The CAISO is therefore coordinating with the California Public Utilities Commission (CPUC) to perform a Special Study in the 2015-2016 TPP. This Special Study will be for information purposes only and will not be used to support a need for policy-driven transmission in the 2015-2016 planning cycle. However, it will provide information regarding the potential need for public policy-driven transmission upgrades to support a state 50% renewable energy goal; and will help inform the state's procurement processes about the cost impacts of achieving the 50% RPS goal.

In going beyond 33%, the Special Study will explore a new approach and assume the incremental renewable generation to choose energy-only option. At the same time, this Special Study will estimate the expected amount of congestion-related curtailment of renewables that would likely result from the increase of renewable generation from 33% to 50%. The Special Study will also consider what transmission could then be rationalized based on cost effectively reducing renewables curtailment (from a customer perspective).[1]

ORA Recommendations

The CAISO identified an important distinction in the manner in which this Special Study in 2015-2016 TPP will differ from past studies for accommodating the 33% RPS generation. The Special Study will assume the incremental renewable generation as energy-only resources. ORA agrees with the CAISO's clarification that the 50% RPS goal is not a State Policy at this time, nor is the assumption of 50% level for RPS resources, as opposed to an expanded definition of renewable resources, a necessary part of the Governor's proposal. ORA encourages the CAISO to continue to make this clear to stakeholders as it performs this study. Furthermore, the study is to estimate the expected amount of congestion and curtailment associated with the 50% RPS. ORA supports this study's approach for the following reasons:

- With the energy-only transmission option, we can meet the 50% RPS requirement. Similar to the 33% RPS requirements, the 50% RPS requirement would require that 50% of the energy consumed to be supplied by renewable generation. A transmission grid that can meet the above requirement should be sufficient; there is no need for the transmission grid to ensure that all the renewable generation to be deliverable to load centers during peak hours.
- Transmission needs should be identified based on load not generation capacity. The goal for transmission planning is to ensure load can be served. According to the North America Reliability Corporation (NERC), total generation capacity in

[1] CAISO, "Unified Planning Assumptions & Study Plan 50% Renewable Energy Goal for 2030 (Special Study)," 2015-2016 Transmission Planning Process Stakeholder Meeting, Neil Millar Executive Director, Infrastructure Development, February 23, 2015.

California will be approximately 140% of the load capacity in 2024. Under this situation, transmission needs should be identified based on the load capacity. Planning for transmission based on generation capacity will lead to transmission over-build.

- Identification of areas of potential congestion with respect to its magnitude and duration provides important information to the procurement function in evaluating renewable energy offers from such areas.

ORA understands that the CAISO is still in the process of developing the details of the Special Study methodology and approach. In terms of considering what transmission could then be rationalized based on cost effectively reducing renewables curtailment, it is important to determine whether the renewable curtailments is a result of lack of transmission. It is possible that renewable curtailment can purely result from over-generation. In other words, such curtailments can occur even if transmission were completely unconstrained. Such curtailments can be solved by decreasing generation, increasing load, increasing energy storage charging, increasing exports, etc. Therefore, the CAISO's Special Study analysis, presumably based on a production-cost simulations tool, needs to recognize the complexities involved in identifying the causes and accordingly prescribe remedies associated with renewable curtailments. For problems caused by lack of transmission, solution should be transmission upgrade; however, for problems derived by other causes, using transmission as solution will be problematic.

ORA requests that the base cases for the incremental 50% RPS portfolio be included in the materials made available to stakeholders. To facilitate understanding of these cases, the resources making up the 33% RPS base portfolio should be distinguished from the incremental resources necessary for the 50% renewable portfolio.[2]

3. The CAISO should also assume energy-only for all generation resources

Background

[2] This is particularly important as the version of the CPUC RPS calculator used to develop the 33% RPS and the one proposed to be used for the 50% renewable portfolio are different in its resource selection methodology and nomenclature.

As part of the annual TPP, the CAISO performs a deliverability assessment on the base renewable resource portfolio under the assumption that all the renewable generation projects in the base portfolio seek full capacity deliverability status and need to be delivered to the "aggregate of load" based upon a strict set of deliverability criteria.

In Section 3.1.1 (Achieving 33% renewable energy on an annual basis) of the Study Plan, the CAISO states the following:

> "The state's mandate for 33% renewable energy by 2020 refers to the share of total electricity consumed by California consumers over the course of a year that is provided by renewable resources. In the context of the transmission planning studies, the question to be investigated is whether a specified portfolio of renewable supply resources, in conjunction with the conventional resource fleet expected to be operating, will deliver a mix of energy over all 8760 hours of the year that is at least 33% supplied by the renewable portfolio on an annual basis. Through the studies the [CA]ISO performs to address this question, the [CA]ISO could identify policy-driven transmission additions or upgrades that are necessary in order to achieve the 33% renewable share of annual consumption by 2020."

In Section 3.1.2 (Supporting RA deliverability status for needed renewable resources outside the ISO balancing authority area), the CAISO states the following:

> "Deliverability for the purpose of a resource providing RA capacity is a distinct requirement and is integral to achieving the 33% RPS policy goal."

ORA Recommendation

While ORA agrees with the above Section 3.1.1, ORA disagrees with the above Section 3.1.2. True, deliverability is a distinct requirement for RA capacity qualification, but the 33% RPS policy does not require RA capacity qualification and the associated deliverability. Also, under the energy-only option, the transmission grid without the "deliverability" capability can ensure that 33% of the renewable energy can be generated by renewable generators, delivered through the transmission grid, and consumed by load customers. Transmission upgrades in addition to the energy-only upgrades will possibly result in transmission over-build.

With excess system capacity envisioned in the foreseeable future, spending monies to accommodate generator's deliverability request will most likely not be cost effective. Furthermore, full capacity deliverability will not guarantee the renewable generation will not be curtailed due to the fact that more generation are competing for serving demand. Curtailment could still happen due to over-generation issues. Moreover, we have observed that the dependency on the delivery network upgrades resulting from the interconnection of the full capacity resources ultimately create artificial obstacles for the commercial viability of those generators. Due to all reasons described above, similar to the CAISO's approach for the 50% renewables Special Study, ORA requests the CAISO to study the energy-only option for all generation resources in the 2015-16 TPP base portfolio.

4. Preferred resources such as distributed generation and energy storage should be modeled online in the initial base cases rather than purely using them as potential mitigation measures

Background

The Study Plan indicates that the portion of authorized local capacity derived from preferred resources such as demand response and energy storage will be modeled offline in the initial base cases and will be used as mitigation once reliability problems are identified.[3]

ORA Recommendation

While Energy Efficiency (EE) is included in the load assumption, ORA observes that distributed generation (DG) and energy storage (ES) is not modeled in the 2015-2016 power flow cases. Although it may be understandable to use DR resources for the purposes of mitigating identified reliability problems only, we fail to understand why DG and ES resources are not modeled to be "online" in the power flow cases. For instance, the CAISO has the DG data based on the CPUC Commercial-Interest RPS Portfolio, but it chooses to model these generators to be "offline" and uses them only to mitigate identified reliability problems. DG and ES resources should be included in the generation/load assumption, rather than be merely used to mitigate problems identified under the assumption that these preferred

[3] CAISO, "2015-2016 Draft Study Plan," Dated February 17, 2015, p.24.

resources do not exist. In other words, preferred resources should be given a similar treatment to the one given to conventional generation.

5. To the extent CAISO is only willing to use the preferred resources as potential mitigation measures, CAISO should consider the preferred resources in all the local areas in the three IOUs' service territories.

Background

The CAISO's preferred resource approach in the 2014-2015 TPP integrated preferred resources -- such as Energy Efficiency (EE), Demand Response (DR), and energy storage -- into the reliability assessment.[4] The CAISO's stated intent for this assessment was to (1) exclude the preferred resources when developing resource assumptions, (2) identify reliability problems based on its assumptions, and (3) consider preferred resources as potential solutions to mitigate identified problems. While the CAISO has considered preferred resources as transmission alternatives in the Los Angeles Basin/San Diego area in the last planning cycle, it failed to do so in PG&E's service area.

ORA Recommendations

ORA appreciates the major advances made by the CAISO in the 2014-2015 Transmission Plan in identifying the likely impact of preferred resources on the transmission grid in the Los Angeles Basin/San Diego area following the shut-down of SONGS. While the CAISO has continued this important work in the current plan, it did not expand this work beyond its original limited geographic area in Los Angeles Basin and San Diego area. ORA notes that the CPUC Energy Division (ED) has developed a methodology as part of Decision (D.)12-12-010[5], which assigns demand response to specific bus-bars for use in power flow and other modeling needs that require greater granularity. Following up on this methodology, the CPUC Energy Division (ED) staff has sent the resulting three spreadsheets for the three largest PTO service territories to the

[4] CAISO, 2015-2016 Draft Transmission Planning Process Unified Planning Assumptions and Study Plan (Draft Study Plan), p. 38.
[5] See CPUC D.12-12-010 (Decision Adopting Long-Term Procurement Plans Track 2 Assumptions and Scenarios), dated December 20, 2012, Appendix B (Assessing Impacts of Demand Response on Local Capacity Requirements).

CAISO for use in modifying power flow base cases. Similar data for Energy Efficiency has been provided by the California Energy Commission (CEC) to the CAISO.[6] Given that the CAISO has all the data that it needs to model the preferred resources in the three largest PTO service territories, ORA requests the CAISO consider preferred resources as transmission mitigation solutions in the three largest PTO service territories of the CAISO Balancing Authority Area.

6. The Study Plan should include the details of the CAISO Reliability Assessment involving the Qualifying Facility (QF) generation retirements in the PG&E local areas

Background

Table 4-2 (Summary of Study Sensitivity Scenarios in the ISO Reliability Assessment) of the Study Plan indicates that a sensitivity study involving the "Retirement of QF Generations" will be conducted in the 2015-2016 TPP.[7] However, no details are provided on this proposed study work.

ORA Recommendations

In the last planning cycle, certain transmission upgrades were justified in part due to potential QF retirements. QF plants to be modeled off-line in the base case as well as sensitivity reliability assessment need to be fully identified in the Study Plan as well as the criteria for assuming that they will no longer operate once their current power purchase agreements expire. In the event reliability issues are identified and associated with a QF shut down, the findings should be presented sufficiently in advance for a full range of options to be considered, including targeted procurement within the CPUC Long Term Procurement Plan (LTPP). ORA requests the CAISO to provide details on their underlying assumptions and approach for their proposed sensitivity study involving the retirement of QF generation in the final Study Plan.

[6] *Ibid.* Appendix A - Assessing Impacts of Incremental Energy Efficiency Program Initiatives on Local Capacity Requirements
[7] CAISO, 2015-2016 Draft Transmission Planning Process Unified Planning Assumptions and Study Plan (Draft Study Plan), P.15