BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Develop An Electricity Integrated Resource Planning Framework and to Coordinate and Refine Long-Term Procurement Planning Requirements.	Rulemaking 16-02-007 (Filed February 11, 2016)

OPENING COMMENTS OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION ON PROPOSED DECISION SETTING REQUIREMENTS FOR LOAD SERVING ENTITIES FILING INTEGRATED RESOURCE PLANS

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I. Introduction

The California Independent System Operator Corporation (CAISO) provides comments on the *Proposed Decision Setting Requirements for Load Serving Entities Filing Integrated Resource Plans* (Proposed Decision). The CAISO provides comments on the following topics: (1) the integrated resource plan (IRP) process and procurement; (2) treatment of scenarios for the CAISO's Transmission Planning Process (TPP); (3) additional modeling details for the CAISO's policy-preferred portfolio analysis in the TPP; (4) greenhouse gas (GHG) targets; (5) load serving entity (LSE) IRP filing requirements; and (6) production cost modeling.

II. The CAISO Supports the Proposed IRP Process and Agrees that Procurement Should Be Based on Sound Assumptions and thorough Reliability-Based Analyses.

The CAISO agrees with and generally supports the two-year IRP cycle outlined in the Proposed Decision.[1] In the odd-numbered years, under the Reference System Plan, the Commission Energy Division Staff (ED Staff) will conduct modeling analysis to recommend a GHG emissions target for the electricity sector, identify the optimal portfolio of resources to meet the target, and calculate a GHG Planning Price.[2] The Proposed Decision provides that the Commission will adopt a Reference System Plan by December 31 of each odd-numbered year

[1] Proposed Decision, pp. 19-20.
[2] Proposed Decision, p. 18.

for use in individual LSE proposed Preferred Plan development. The Commission will then transmit the same Reference System Plan to the CAISO for use in the transmission planning process (TPP) commencing in February of the subsequent even-numbered year.[3] The CAISO understands that the Reference System Plan will not direct procurement, nor will the CAISO approve Category 1 policy-driven transmission projects based on the results of the Reference System Plan.

In even-numbered years, ED Staff will commence activities to develop the Preferred System Plan. These activities will include production cost modeling by ED Staff and interested stakeholders to aggregate individual LSE plans and conduct reliability assessments and to review the assumptions and results of the reference plan. The Commission will adopt a Preferred System Plan by December 31 of each even-numbered year that may direct procurement. The Commission will then transmit the same Preferred System Plan to the CAISO for use in the TPP commencing in February of the subsequent odd-numbered year.[4] The CAISO will use this plan to identify potentially necessary policy-driven transmission solutions in the TPP.[5]

The Proposed Decision further notes that several important "data updates and functionality improvements" to the RESOLVE model will likely begin in 2019.[6] These improvements include:

- Allowing existing resources to retire if not economical or uncontracted.
- Allowing the model to select existing, uncontracted resources as candidate resources.
- Including all distributed energy resources (DERs) as candidate resources at appropriate levels of aggregation, including energy efficiency, shimmy demand response, behind-the-meter photovoltaic (BTM PV), electric vehicles, and building electrification measures.
- Modeling system operations by having load following reserve requirements respond dynamically do the resources selected by the model.[7]

[3] Proposed Decision, p. 18.
[4] Proposed Decision, p. 19.
[5] Proposed Decision, p. 19.
[6] Proposed Decision, p. 42.
[7] Proposed Decision, p. 43.

The Proposed Decision explains why these improvements are needed and highlights several shortcomings of the current modeling framework and assumptions. For example, the Proposed Decision recognizes that there are no natural gas-fired retirements modeled beyond the once-through cooling (OTC) retirements.[8] The CAISO will work with the Commission and stakeholders to support analysis of impacts on gas-fired generation. Another problematic assumption is the high export limit which can "affect the assumed geography of renewable resource buildout"[9] within California and out-of-state. As the CAISO noted in previous comments, the Proposed Decision properly finds that the Commission should improve modeling capabilities and modify and thoroughly vet modeling assumptions prior to authorizing procurement. The CAISO has noted previously that the RESOLVE portfolios are not necessarily optimal, but rather arise from limiting or overly simplistic assumptions that results in a GHG Planning Price, which in turn is expected to drive to a particular portfolio.

The CAISO supports all of these changes and encourages updates as soon as possible, but at the latest in 2019. For example, LSEs may be able to address some of these assumptions (and potentially others) and modeling points in their individual IRP filings that are due in 2018. The 2018 production cost modeling assessments also may reveal additional modeling assumptions and methods in RESOLVE that need to be improved. The Commission should be open to implementing these improvements.

The CAISO agrees with the Proposed Decision's conclusion to decline early procurement at this time as premature and instead focus on modeling improvements.[10] In addition to the reasons provided in the Proposed Decision, any procurement decisions should be supported by a thorough reliability-based analysis, such as production cost modeling. Although it may be premature at this time to authorize early procurement, the CAISO remains concerned that long-lead time resources will continue to feel pressure regarding timing. Production cost modeling of the 42 MMT Scenario can serve as a calibration check on the key drivers of results, which currently favors a less diverse portfolio. The CAISO provides additional comments about the timing and application of production cost modeling and stakeholder engagement in Section VII below.

[8] Proposed Decision, p. 32.
[9] Proposed Decision, p. 34.
[10] Proposed Decision, p. 81.

III. The CAISO's TPP will Differentiate between Scenarios from the Reference and Preferred System Plans.

Section 10 of the Proposed Decision concurs with ED Staff's proposal to transmit the Default Scenario to the CAISO TPP for the reliability base case and the 42 MMT Scenario as the policy-driven scenario.[11]

The summary of party comments in the Proposed Decisions[12] does not reflect detailed comments regarding the treatment of the Reference System Plan scenarios the CAISO previously submitted.[13] The CAISO repeats those comments here to clarify that the treatment of the Default and 42 MMT Scenario will be different depending on whether the scenarios are from the Reference or Preferred System Plan. The different treatment arises because the Reference System Plan will not lead to procuring or identifying policy-driven transmission solutions. In contrast, the Preferred System Plan may lead to procurement and identifying policy-driven transmission solutions. Importantly, the CAISO assumes that all portfolios and necessary supporting data (such as MW disaggregation down to the substation as discussed in greater detail in Section IV) are provided to the CAISO in a timely manner in order to meet CAISO tariff timelines and obligations.

For the Reference System Plan:

- Default Scenario – The 2018-2019 TPP can reflect a Default Scenario from the Reference System Plan as the reliability case. The CAISO will exercise authority under its tariff to remove any generation from the case that may trigger policy-driven transmission upgrades.
- 42 MMT Scenario – The 2018-2019 TPP can reflect a Reference System Portfolio from the Reference System Plan as a **sensitivity** scenario to analyze policy-driven needs.

The CAISO tariff requires that the CAISO categorize policy-driven transmission solutions as either Category 1 or Category 2 transmission solutions. Category 1 solutions are

[11] Proposed Decision, p. 86
[12] Proposed Decision, p. 84.
[13] California Independent System Operator, Comments of the California Independent System Operator Corporation on Administrative Law Judge's Ruling Seeking Comment on the Proposed System Reference Plan and Related Commission Policy, October 26, 2017, p. 8.

those the CAISO finds to be needed and recommends for approval in the current planning cycle as part of the comprehensive Transmission Plan.[14] In contrast, Category 2 transmission solutions are:

> those that could be needed to achieve state, municipal, county or federal policy requirements or directives but have not been found to be needed in the current planning cycle based on the criteria set forth in this section. The CAISO will determine the need for, and identify such policy-driven transmission solutions that efficiently and effectively meet applicable policies under alternative resource location and integration assumptions and scenarios, while mitigating the risk of stranded investment.[15]

By reflecting the 42 MMT Scenario as a sensitivity, the CAISO can assess potential transmission solutions as Category 2 transmission upgrades. The CAISO will then be able to reflect the portfolio in the TPP, thus identifying potentially necessary transmission upgrades without having to seek CAISO Board approval for new policy-driven transmission solutions in the 2018-2019 TPP cycle.

For the Preferred System Plan:

- Default Scenario – The 2019-2020 TPP can reflect a Default Scenario from the Preferred System Plan as the reliability case.
- Preferred System Portfolio – The 2019-2020 TPP can reflect a Preferred System Portfolio from the Preferred System Plan as the policy preferred (baseline) portfolio. The CAISO's tariff would reflect transmission solutions identified based on this portfolio as Category 1 solutions.

IV. The CAISO's TPP Requires Additional Modeling Details to Map Renewable Resources from the Policy-Preferred Portfolio.

Section 10 of the Proposed Decision delegates responsibility to ED Staff, the California Energy Commission (CEC), and the CAISO to develop the required granularity needed to disaggregate RESOLVE modeling outputs to the required level of granularity for the TPP.[16] Although the CAISO does not object to this process, the Commission must still provide detailed

[14] CAISO Tariff Section 24.4.6.6.
[15] CAISO Tariff Section 24.4.6.6.
[16] Proposed Decision, p. 86.

guidance on which resources should be modeled as energy-only and which should be fully deliverable with a resource adequacy value. The Proposed Decision points to the Attachment A slide deck for guidance.[17] However, Attachment A only offers the general guidance that 25 percent of new renewable resources are energy-only.[18] The Commission needs to provide more information and guidance. For example, does the 25 percent apply pro-rata to each renewable zone or can a few zones have a higher concentration of energy-only resources but with the total proposed build-out adding up to 25 percent. It is unclear whether the 25 percent applies to both the Default and 42 MMT Scenarios. Furthermore, the Commission should consider the impact of declining qualifying capacity (QC) values that will result from the Commission eventually adopting an effective load carrying capability (ELCC) methodology. The CAISO looks forward to working with ED staff and the CEC on this effort and requests that the Commission clarify these matters.

V. LSEs should use a GHG benchmark in their IRPs.

The Proposed Decision agrees with SCE's suggestion that "each LSE be given the option to plan utilizing a GHG Planning Price (for LSEs conducting more detailed modeling and planning) or a GHG benchmark."[19] The Proposed Decision continues to note that:

> [a]s a general proposition, the GHG emission benchmark suggested by [ED] staff represents a simple and transparent approach to benchmarking emissions across multiple diverse LSEs. As suggested by SCE, we will adopt it as an option to be used voluntarily by LSEs as an alternative to the GHG Planning Price methodology.[20]

As noted in previous comments, the CAISO supports the approach utilizing the mass-based GHG emission benchmarks.[21]

Of the two options, the approach utilizing a GHG Planning Price has not been proven to achieve the expected GHG emissions target with a given GHG Planning Price. For example,

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[17] Proposed Decision, p. 34. Assumed to be the Attachment A, slide deck from the ALJ's Ruling.
[18] Attachment A, ALJ's Ruling, p. 114.
[19] Proposed Decision, p. 95.
[20] Proposed Decision, p. 102.
[21] California Independent System Operator, Comments of the California Independent System Operator Corporation on Administrative Law Judge's Ruling Seeking Comment on the Proposed System Reference Plan and Related Commission Policy, October 26, 2017, p. 11.

PG&E conducted RESOLVE modeling that showed the $150/MMT GHG Planning Price led to a greater buildout of renewables than the 42 MMT Scenario.[22] For each LSE, a mass-based GHG emission benchmark can be used either as a maximum amount of allowed GHG emission in the model, or as a target in the iterative process of searching for an optimal portfolio. Using a mass-based benchmark is consistent with the California Air Resources Board's (CARB's) Cap-and-Trade approach. The total GHG emission in the aggregated LSE plans is also predictable, and makes it possible for the Commission to align GHG emission benchmarks with the CARB targets. Therefore, the Commission should require the LSEs to use the mass-based GHG emission benchmark approach in developing their plans.

VI. The Commission Should Clarify the LSE IRP Review and Approval Processes.

The Proposed Decision provides that:

> each LSE [will] file its IRP in this rulemaking proceeding, R.16-02-007, as a 'compliance filing.' In this way, all of the IRPs will automatically be consolidated within this proceeding for our consideration.[23]

The Proposed Decision also notes that this proceeding will be re-categorized "as "ratesetting" in the near future, to account for the fact that some LSEs may request consideration of procurement authorizations within their IRP filings."[24] The CAISO understands the benefits of consolidating the LSE IRP filings within this proceeding, but requests additional clarification regarding the review and approval processes that will take place after LSEs file the IRPs. In particular, the Commission should clarify how it will consider the LSE IRPs, the subsequent production cost modeling on the LSE IRPs, and the actions the Commission will take if LSE IRPs are insufficient to meet the state GHG targets. The CAISO recommends that the Commission specify that it will conduct evidentiary hearings to review and approve the LSE IRPs prior to approving the Preferred System Plan and any associated procurement.

[22] Pacific Gas and Electric, Opening Comments of Pacific Gas and Electric (U39E) to Administrative Law Judge's Ruling Seeking Comment on the Proposed System Reference Plan and Related Commission Policy, October 26, 2017, Appendix 3.
[23] Proposed Decision, p. 106.
[24] *Id.*

VII. Production Cost Modeling Should Also Be Conducted on the Preferred System Plan.

The CAISO believes production cost modeling is a critical step for both the Reference and Preferred System Plans. For the Reference System Plan, the role of production cost modeling is to provide (1) a calibration check on the key drivers of results coming from RESOLVE (*e.g.*, GHG Planning Price), and (2) an operability and reliability check based on the underlying assumptions and plan results. For the Preferred System Plan, the role of production cost modeling is to ensure that the individual LSE IRP plan and the aggregated plan achieve the IRP objectives and revalidate operability and reliability.

As noted in Section II above, the two-year IRP cycle envisions production cost modeling in the even-numbered years during the Preferred System Plan development. The Proposed Decision notes that:

> [ED] Staff and any other parties conducting modeling will be asked to share their results and recommendations around April 2018. All parties will then have a formal opportunity to comment on the staff recommendations for the outcome of the calibration and vetting process, on the record in this proceeding, likely culminating in an ALJ ruling adopting the assumptions and other approaches to utilize in this round of IRP for analysis of the proposed PSP [Preferred System Plan].[25]

The CAISO agrees that calibrating models and improving modeling guidance is important for the IRP proceeding. However, the proposed process and timeline do not touch on the ultimate purpose of the production cost modeling in IRP, which is to assess if the Preferred System Plan can achieve state GHG emission reductions and RPS targets when critical operational constraints and reliability requirements are enforced. For example, because the timeline of the production cost modeling calibration and vetting process proposed in Section II of Attachment B only has milestones through May 2018, it only applies to the Reference System Plan.[26] The Proposed Decision later clarifies that the calibration and vetting process applies to an "updated RESOLVE 42 MMT core policy case built with the 2017 IEPR [which] is intended solely for the exercise of calibrating and vetting production cost models and does not replace the Commission adopted Reference System Plan and portfolio."[27] Sections V and VI of Attachment

[25] Proposed Decision, p. 114.
[26] Proposed Decision, Attachment B, p. 4.
[27] Proposed Decision, Attachment B, p. 5.

B briefly discuss Preferred System Plan production cost modeling, but do not specify a timeline.[28]

The CAISO strongly urges the Commission to reconsider the timeline and ensure there is sufficient time for the Commission and parties to vet the aggregated LSE Plans (which is the candidate for the Preferred System Plan), to conduct their production cost modeling of the aggregated LSE Plans, and to file their results and comments into the record of the IRP proceeding.

Also, the Proposed Decision does not define the actions to be taken if production cost modeling indicates that the aggregated individual LSE Plans cannot achieve the state GHG emission reductions and RPS targets. The Commission should define the actions it will take if it determines LSE IRPs are insufficient in meeting these targets or maintaining reliability and allocate time for corrective action before approving the Preferred System Plan.

In discussing the Reference System Plan, the Proposed Decision acknowledges that although RESOLVE may choose technology specific resources, LSEs will likely "procure renewables generally, without specific regard to the exact technology"[29] where "supply-side renewables" is one undifferentiated category. However, supply-side renewables can have vastly different profiles, integration needs, and costs. They are not interchangeable or equivalent on a MW-by-MW basis. The Proposed Decision states:

> Once procurement activities are undertaken, we expect that the LSEs will procure the most effective resources within the [resource] groups that meet their cost, reliability, and other needs such as impacts on disadvantaged communities, which may look different from what each LSE's plan proposes. In sum, the purpose of the reference system portfolio is to point the general direction for planning purposes, for individual LSEs and policymakers, while being updated with better information at least every two years. Each LSE will be required to plan toward adherence to the reference system portfolio, with specific justification given when its plan deviates from the reference portfolio. When it comes to actual procurement, we expect that LSEs will choose the most appropriate and effective resources offered to them that meet their customers' needs, when analyzing cost, reliability, and disadvantaged communities impacts, among other considerations.[30]

[28] Proposed Decision, Attachment B, pp. 9-10.
[29] Proposed Decision, p. 73.
[30] Proposed Decision, pp. 74-75.

Although the CAISO understands that some flexibility is needed for LSEs to manage procurement realities beyond the IRP, production cost modeling based on the Preferred System Plan will, at minimum, provide the baseline from which LSEs can choose the most appropriate and effective resources when procurement deviates from the IRP. Production cost modeling on the Preferred System Plan serves as a checks and balances measure to ensure that the aggregated LSE IRP plans achieve the IRP objectives and audit the operability of the portfolio.

VIII. Conclusion

For the reasons described herein, the CAISO respectfully requests that the Commission:

- Ensure that procurement authorization is based on sound assumptions and thorough reliability-based analyses;
- Modify the Proposed Decision to reflect the difference between scenarios transmitted from the Reference versus Preferred System Plan;
- Provide additional modeling details to map renewable resources from policy-preferred portfolios;
- Require LSEs to use a GHG emission benchmark in their IRPs as the GHG Planning Price may not guarantee the same portfolio as modeled by ED Staff and adopted by the Commission;
- Clarify the LSE IRP review and approval process to include evidentiary hearings; and
- Ensure that production cost modeling is also conducted on the Preferred System Plan.

Respectfully submitted,

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