BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Integrate and Refine Procurement Policies and Consider Long-Term Procurement Plans	Rulemaking No. 13-12-010 (Filed December 19, 2013)
Order Instituting Rulemaking to Integrate and Refine Procurement Policies and Consider Long-Term Procurement Plans	Rulemaking No. 12-03-014 (Filed March 22, 2012)

REPLY COMMENTS OF EAGLE CREST ENERGY COMPANY ON PLANNING ASSUMPTIONS AND SCENARIOS WORKSHOP

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REPLY COMMENTS OF EAGLE CREST ENERGY COMPANY ON PLANNING ASSUMPTIONS AND SCENARIOS WORKSHOP

Eagle Crest Energy Company ("Eagle Crest")[1] respectfully submits these Reply Comments in Response to the December 18th, 2013 Workshop and the draft Planning Assumptions and Scenarios for Use in the CPUC 2014 Long Term Procurement Plan Proceeding and the CAISO 2014-2015 Transmission Planning Process ("Assumptions and Scenarios"). These Reply Comments are submitted pursuant to the December 19, 2013 e-mail ruling issued by Administrative Law Judge ("ALJ") Gamson.

I. RESPONSES TO PARTIES' OPENING COMMENTS

A. The Commission Must Consider Long-Term Climate Objectives in Finalizing its Assumptions and Scenarios and in Choosing Which Scenarios to Study

The Commission and the CAISO must take decisive action, starting with the 2014 LTPP and TPP cycles, to begin laying the foundation necessary for California to meet its ambitious long-term climate change goals. As several parties have emphasized in their respective opening comments, the draft Assumptions and Scenarios do not represent the portfolio needed for dramatic reductions in greenhouse gas ("GHG") emissions after 2020.[2]

Although the 2050 time horizon is outside the 20-year planning scope of the LTPP proceedings, the Commission should not ignore this critical target. At the very least, in order to put California on the path to achieving its 2050 policy objectives, the Commission should analyze scenarios that achieve significant GHG emission reductions 10 and 20 years from now. The recent release by Energy and Environmental Economics, Inc. ("E3") of a new report

[1] Eagle Crest is developing the 1,300 MW Eagle Mountain Pumped Storage Project near Desert Center, California.

[2] *See, e.g.,* California Energy Justice Alliance ("CEJA") Opening Comments at pp. 2, 3; Environmental Defense Fund ("EDF") Opening Comments at pp. 2, 4; Union of Concerned Scientists ("UCS") and Sierra Club Opening Comments at pp. 4-5; Large-scale Solar Association ("LSA") Opening Comments at p. 2 ; Imperial Irrigation District ("IID") Opening Comments at pp. 2-4; California Wind Energy Association ("CalWEA") Opening Comments at pp. 2, 5-6; Brookfield Renewable Energy Partners LP ("Brookfield") Opening Comments at pp. 4, 5.

"Investigating a Higher Renewables Portfolio Standard in California" (hereinafter the "E3 Report") emphasizes the urgency of the situation.[3] The E3 Report highlights the changing environment -- driven largely by increases in renewable development -- in which assets procured pursuant to this proceeding will be operating over the course of their 20- to 40-year lifespans. Given the massive scale of change affecting the generation portfolio and the grid's operational needs, it is critical that the CPUC use a longer time horizon for planning in the 2014 LTPP cycle and beyond.

In addition, while Eagle Crest commends the efforts of the Commission, the CAISO, and the CEC in working together to better coordinate energy planning efforts for the State, we join in the recommendations made by other parties (including Brookfield, CalWEA and LSA) that the California Air Resources Board ("CARB") be included in these efforts as well.[4] By working with CARB, the designated steward of California's climate change policy, the joint agencies can further help implement the correct planning framework to establish possible pathways to meeting long-term climate objectives.

B. The Commission and Other Agencies Should Study At Least One Scenario that Includes Reasonable Pumped Hydro Storage Assumptions

The various filings in this proceeding contain a wide range of views regarding how storage should be addressed in the Assumptions and Scenarios, if at all. Yet -- as was reflected in ALJ Gamson's questions for consideration -- almost all the discussion was confined to the storage technologies and procurement targets covered by Commission Decision ("D.") 13-10-040 and simply ignored pumped hydro storage, which was outside the scope of D.13-10-040. Indeed, besides Eagle Crest, the only other parties to comment on the absence of consideration of pumped hydro in the Assumptions and Scenarios were other pumped hydro developers or energy storage advocates.[5]

The Commission must fill this void. Pumped hydro storage, coupled with high renewable penetration, offers a feasible and cost-effective means to reduce GHG emissions at scale and thereby make progress towards achieving the State's climate change objectives.

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[3] E3, "Investigating a Higher Renewables Portfolio Standard in California" (January 2013), *available at* http://www.ethree.com/documents/E3_Final_RPS_Report_2014_01_06_with_appendices.pdf.

[4] *See* Brookfield Opening Comments at p.5; CalWEA Opening Comments at p. 6; and LSA Opening Comments at p. 2.

[5] *See* Brookfield Opening Comments at pp. 1-4; Nevada Hydro Opening Comments at pp. 2-16; and California Energy Storage Alliance ("CESA") Opening Comments at pp. 2-3.

Further, pumped hydro resources can offer a reliable strategy to mitigate the threat posed by the curtailment of renewable resources that is predicted in the future, thereby protecting California's massive investment in renewable energy to date and in the future. The E3 Report shows frequent and substantial curtailment events starting at 33% renewable penetration from overgeneration; congestion may result in additional curtailments still. The problem is summarized in the following chart from that report:[6]

Overgeneration Statistics	33% RPS	40% RPS	50% RPS Large Solar
Total Overgeneration			
GWh/yr.	190	2,000	12,000
% of available RPS energy	0.2%	1.8%	8.9%
Overgeneration frequency			
Hours/yr.	140	750	2,000
Percent of hours	1.6%	8.6%	23%
Extreme Overgeneration Events			
99th Percentile (MW)	610	5,600	15,000
Maximum Observed (MW)	6,300	14,000	25,000

Given overprocurement and the geography of the resources already procured, the problems identified under a 40% scenario could occur closer to 2020 in southern California. Identifying physical enabling resources like high-value pumped storage will reduce the risk of curtailment.

In addition, the level of reported curtailment is only one challenge in the market. Market pricing will likely change dramatically, becoming more volatile and dynamic over time. Storage can reduce these market swings and increase the efficiency of existing and planned thermal generators throughout the year. Because of the immense benefits that pumped hydro can offer to California's electric system, the LTPP and TPP planning efforts should begin with at least the *possibility* of a future with installed pumped hydro to complement and balance large amounts of renewable generation.

Eagle Crest thus supports CESA's suggestion that the Commission should, at the very least, include reasonable assumptions for pumped hydro storage development in its policy-driven scenarios (high RPS target and/or expanded preferred resources).[7]

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[6] *See* E3 Report at p. 14.

[7] *See* CESA Opening Comments at pp. 4-5.

C. The Assumptions and Scenarios are Much Too Conservative With Regard to Renewables Targets

The parties' opening comments showed wide consensus that the draft Assumptions and Scenarios are far too conservative with regard to RPS projections. It is simply unrealistic for the Commission to assume in the majority of the scenarios that no renewable progress past 33% in 2020 will be made, nor should the high RPS scenario be limited to 40%.

Instead, Eagle Crest agrees with numerous parties that the Commission should increase its assumptions for renewable penetration across the board, and specifically study a 2030 scenario in which renewable generation well exceeds 40%.[8] Further, Eagle Crest suggests that the Commission study a scenario that includes *both* a higher renewables target *and* the operation of pumped hydro resources, since that combination can provide substantial environmental and climate benefits which the Commission cannot ignore.

In addition, as the Commission noted in its own documents, the current RPS calculator is out of date, and it needs a new methodology and portfolio tool to accurately model the mix of resources for 33% and for 40% scenarios.[9] Eagle Crest therefore suggests that when the Commission launches its new RPS calculator and the associated new renewable portfolios, it provide an additional opportunity for party comments on any revised renewable scenario assumptions.

II. CORRECTION TO EAGLE CREST'S OPENING COMMENTS

Eagle Crest made an error in its Opening Comments. In Section II.E, "Relative Cost Effectiveness and Value of the Project," incorrect units were used in describing the Eagle Mountain Pumped Storage Project. The following sentence provides an accurate description:

> In terms of installed cost per kWh of storage capacity (a common metric to value energy storage resources), the delivered cost of the project is expected to be between $88 and $118 per kWh in 2014 dollars, assuming an installed storage capacity of 22 million kWh.

The above sentence should replace the following sentence as originally appeared in Eagle Crest's Opening Comments:

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[8] *See, e.g.,* Natural Resources Defense Council ("NRDC") Opening Comments at pp. 12-14; CESA Opening Comments at p.4; CEJA Opening Comments at p. 3; EDF Opening Comments at pp. 5-6; UCS and Sierra Club Opening Comments at pp. 4-5; Center for Energy Efficiency and Renewable Technologies ("CEERT") Opening Comments at pp. 2-3; LSA Opening Comments at p.2; and The Vote Solar Initiative Opening Comments at p.3.

[9] *See* Assumptions and Scenarios at pp. 15-16.

> In terms of installed cost per MWh of storage capacity (a common metric to value energy storage resources), the delivered cost of the project is expected to be between $88 and $118 per MWh in 2014 dollars, assuming an installed storage capacity of 22,000 MWh.

Eagle Crest apologizes to the Commission and other parties to the LTPP proceedings for any confusion this error may have caused.

III. CONCLUSION

Decisions made during the course of the 2014 LTPP and TPP processes will have significant environmental and climate change impacts for decades to come. However, pumped hydro storage -- which may provide one of the best strategies for reaching the State's long-term climate objectives -- has thus far been excluded altogether from the Assumptions and Scenarios that will set the stage for these two key proceedings. The Commission should provide leadership by crafting the Assumptions and Scenarios so that pumped hydro at a bulk scale, combined with high penetration of renewable resources, is at least considered among the possible paths forward.

Respectfully submitted,

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