FILED
04/15/19
04:59 PM

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)

REPLY COMMENTS OF HYDROSTOR, INC. ON PROPOSED DECISION ADOPTING PREFERRED SYSTEM PORTFOLIO AND PLAN FOR 2017-2018 INTEGRATED RESOURCE PLAN CYCLE

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April 15, 2019

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I. INTRODUCTION

Hydrostor, Inc. ("Hydrostor") herein submits reply comments in response to the submissions to the March 18, 2019 Proposed Decision of Administrative Law Judge Julie Fitch adopting the Preferred System Portfolio and Plan for the 2017-2018 Integrated Resource Plan Cycle (the "Proposed Decision" or "PD"). Hydrostor would like to commend the California Public Utilities Commission (the "Commission") and staff on the work on the 2017-2018 Integrated Resource Planning ("IRP") cycle and the significant effort that was undertaken to arrive at the Proposed Decision.

II. REPLY COMMENTS

Need for More Analytical Rigor in 2019-2020 IRP Cycle

Hydrostor recognizes that the 2017-2018 IRP cycle was the first of its kind and that there were lessons learned by all parties in the proceeding. However, the need for additional analytical rigor going forward was raised by a number of parties in their comments on the PD. While the Commission has taken steps in the 2019-2020 cycle to improve the analysis and modeling, it is not clear all issues have been addressed.

One of the technical shortfalls of the 2017-2018 cycle was that it did not fully consider all available technology options available for deployment in California and the California Independent System Operator ("CAISO") grid. Consequently, it is unclear if the resulting portfolio is truly co-optimized for environmental, reliability and cost considerations. As Range

Energy Storage Systems, LLC ("Range") notes in their comments, pumped hydro was used by the Commission as a proxy for all bulk-scale, long-duration technologies.[1] However, there are trade-offs in cost, round-trip efficiency, ability to scale and siting flexibility which differentiate other bulk scale, long-duration technologies such as compressed air energy storage ("CAES"), and its subset Advanced-CAES, from pumped hydro. The IRP process is the appropriate avenue to assess these trade-offs and this shortcoming must be corrected through the inclusion of CAES as a candidate resource in the 2019-2020 IRP cycle.[2]

Long Duration Storage is Appropriately Included in Procurement Track

Some parties expressed a concern that the PD was too prescriptive in terms of the resources which were listed for consideration within the procurement track. For example, Southern California Edison ("SCE") comments that the scope should be broadened from "long duration (8 hour) storage" to simply "storage".[3] Meanwhile, Pacific Gas and Electric Company ("PG&E") argues that additional stakeholder input is required before prescribing the resources for the procurement track.[4]

We strongly disagree with these assertions. As we've noted in past comments[5] and included in the PD, long duration resources can provide significant, differentiated reliability benefits.[6] Long duration storage can help address California's reliability challenges by providing transmission benefits such as unplanned outage protection, improved maintenance options and enhanced renewable integration while also providing the generation benefit of meaningful capacity.[7] The need for storage resources that do not suffer from degradation (such as many long duration resources) is supported by comments from the CAISO where they note that battery

[1] Range comments on Proposed Decision, page 3.
[2] For more information see "Comments of Hydrostor, Inc. on Administrative Law Judge's Ruling Seeking Comments on Inputs and Assumptions for Development of the 2019-2020 Reference System Plan" dated January 4, 2019.
[3] SCE comments on Proposed Decision, page 9, A-3, A-6.
[4] PG&E comments on Proposed Decision, page 5.
[5] For more information, see "Comments of Hydrostor, Inc. on Ruling of Assigned Commissioner and Administrative Law Judge Seeking Comment on Policy Issues and Options Related to Reliability" dated December 20, 2018.
[6] Proposed Decision, page 126.
[7] For more information, see "Comments of Hydrostor, Inc. on Ruling of Assigned Commissioner and Administrative Law Judge Seeking Comment on Policy Issues and Options Related to Reliability" dated December 20, 2018.

storage resources are subject to "significant cell degradation" due to frequent cycling thus reducing their reliability benefits.[8]

Other parties argue that a procurement track should not be started at all as resources, particularly lithium-ion batteries, can be brought online at any speed at any time.[9] Despite potentially longer timelines to deploy, this ignores the significant benefits of many long duration resources such as lower overall cost, longevity, synchronous inertia and lack of degradation. Consequently, we agree with the statement in the PD that certain beneficial resources can have "long lead times… and we may not be able to wait until the end of the next IRP cycle to begin the procurement and development process".[10] We believe this should be explicitly addressed in the PD, and / or there should be clarifications therein to the procurement pathway that will address these important issues.

Further, there are important procurement-related issues which the Commission notes in the PD which will need to be addressed[11] and delaying engagement and resolution of those issues will only delay procurement processes. If the timing of the need does not change, deferring resolution of issues simply compresses timelines for deployment which could result in higher cost options that can be deployed in the compressed timeframe. This is counter to the long term planning objectives of the IRP proceeding in balancing cost, reliability and environmental considerations.

Finally, despite the clear benefits that long duration resources can provide, energy storage procurements to date do not properly value long duration[12] and, consequently, the need to explicitly address the procurement of long duration storage as set out in the PD is warranted.

Other

A number of parties indicated a need for better alignment of the IRP and CAISO Transmission Planning Process ("TPP").[13] As we've noted in past comments[14], we are supportive of greater integration of the IRP and CAISO TPP processes.

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[8] CAISO comments on Proposed Decision, page 5.
[9] See, for example, Protect Our Communities Foundation comments on Proposed Decision, page 8.
[10] Proposed Decision, pages 135-136.
[11] Proposed Decision, pages 136-137.
[12] For more information, see "Comments of Hydrostor, Inc. on Assigned Commissioner and Administrative Law Judge's Ruling Seeking Party Comments on Issues Pertaining to Energy Storage Technology Diversity" dated August 28, 2018.
[13] Range comments on Proposed Decision, page 4, CAISO comments on Proposed Decision, page 6.
[14] See "Comments of Hydrostor, Inc. on Ruling of Assigned Commissioner and Administrative Law Judge Seeking Comment on Policy Issues and Options Related to Reliability" dated December 20, 2018.

III. CLOSING

We appreciate this opportunity to participate in the 2017-2018 IRP cycle and believe that long duration storage is appropriately included as a resource for the procurement track in the PD while 2019-2020 IRP cycle can be improved by including CAES as a candidate resource. We look forward to working with the Commission in relation to the procurement track and through the 2019-2020 IRP cycle.

Dated: April 15, 2019

Respectfully submitted,

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