

**DOCKETED**

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*Comment Received From: GreenGenStorage, LLC  
Submitted On: 7/5/2023  
Docket Number: 21-SIT-01*

**GreenGenStorage Comments on Staff Workshop for the Next  
CAISO 20 Year Transmission Outlook**

*Additional submitted attachment is included below.*



July 5, 2023

California Energy Commission  
Docket Unit, MS-4  
Docket No. 21-SIT-01  
715 P Street  
Sacramento, CA 95814-5512  
Submitted Electronically to [docket@energy.ca.gov](mailto:docket@energy.ca.gov)

**Re: Docket No. 21-SIT-01 Staff Workshop on Resource Portfolio Assumptions for the Next CAISO 20 Year Transmission Outlook – GreenGenStorage, LLC Comments**

GreenGenStorage, LLC (GreenGen) appreciates the opportunity to submit comments to the Joint Agency Staff Workshop on Resource Portfolio Assumptions for the Next CAISO 20-Year Transmission Outlook held on June 23, 2023. GreenGen is a California-based pumped storage hydro (PSH) development company that is permitting a long duration pumped storage water battery project in parts of Amador and Calaveras Counties, California.<sup>1</sup>

GreenGen appreciates that the 20 Year Outlook for CAISO explores the longer-term grid requirements and options for meeting GHG reductions and renewable energy goals reliably and cost effectively. The purpose of our comments is to 1) confirm that pumped storage is part of the incremental technology agnostic long duration energy storage category in the 2045 SB 100 Portfolio given pumped storage’s attributes, and 2) to provide additional publicly available sources to support the geographic allocation of pumped storage projects in development, with a focus on two pumped storage projects in Northern California.

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<sup>1</sup>

FERC Docket P-14796. Filing can be accessed at: <https://elibrary.ferc.gov/eLibrary/search/>; See also: <https://greengenstorage.com/>



**1. Confirm that Pumped Storage is Also Part of the Technology Agnostic Clean Base Load/LDES category in 2045 SB 100 Portfolio**

GreenGen supports the potential for 5,000 MW of additional long duration energy storage in the 2045 SB 100 Portfolio.<sup>2</sup> Since there is no express category adding incremental pumped storage, GreenGen seeks confirmation that pumped storage will be considered as part of this technology-agnostic long duration energy storage category given its storage attributes. While there is no explicit category adding incremental PSH resources, GreenGen assumes that development efforts such as GreenGen’s pumped storage project in Northern California would be considered as part of the 1250 MW of technology agnostic clean base load/LDES category. We also would appreciate confirmation that the long duration energy storage category intends to include resources with at least 8 hours of storage. GreenGen thanks the agencies for recognizing that there is potential for this in Northern California.

**2. Federal Energy Regulatory Commission’s (FERC) Hydro Licensing Website Provides Helpful Information of Pumped Storage Projects to Inform Resource Mapping Efforts**

To inform the geographic allocation of potential pumped storage projects, GreenGen would like to encourage the use of the FERC licensing website to identify the locations of pumped storage projects in development here in California.<sup>3</sup> Some pumped storage projects are currently not in the CAISO queue or may not have been identified in the land use screens. Since pumped storage is a long lead time resource that undergoes a rigorous and important environmental review process, the FERC website would serve as a valuable resource to understand the status and location of pumped storage projects in California. Based on the FERC’s website, there are approximately four California pumped projects with a potential 2,180 MW that have active preliminary permits and another eleven pending preliminary permits as of May 22, 2023. Here in Northern California, the Mokelumne Water Battery Project is an eight-hour, 400 megawatt pumped storage project that will store 3,200 megawatt-hours per day of clean,

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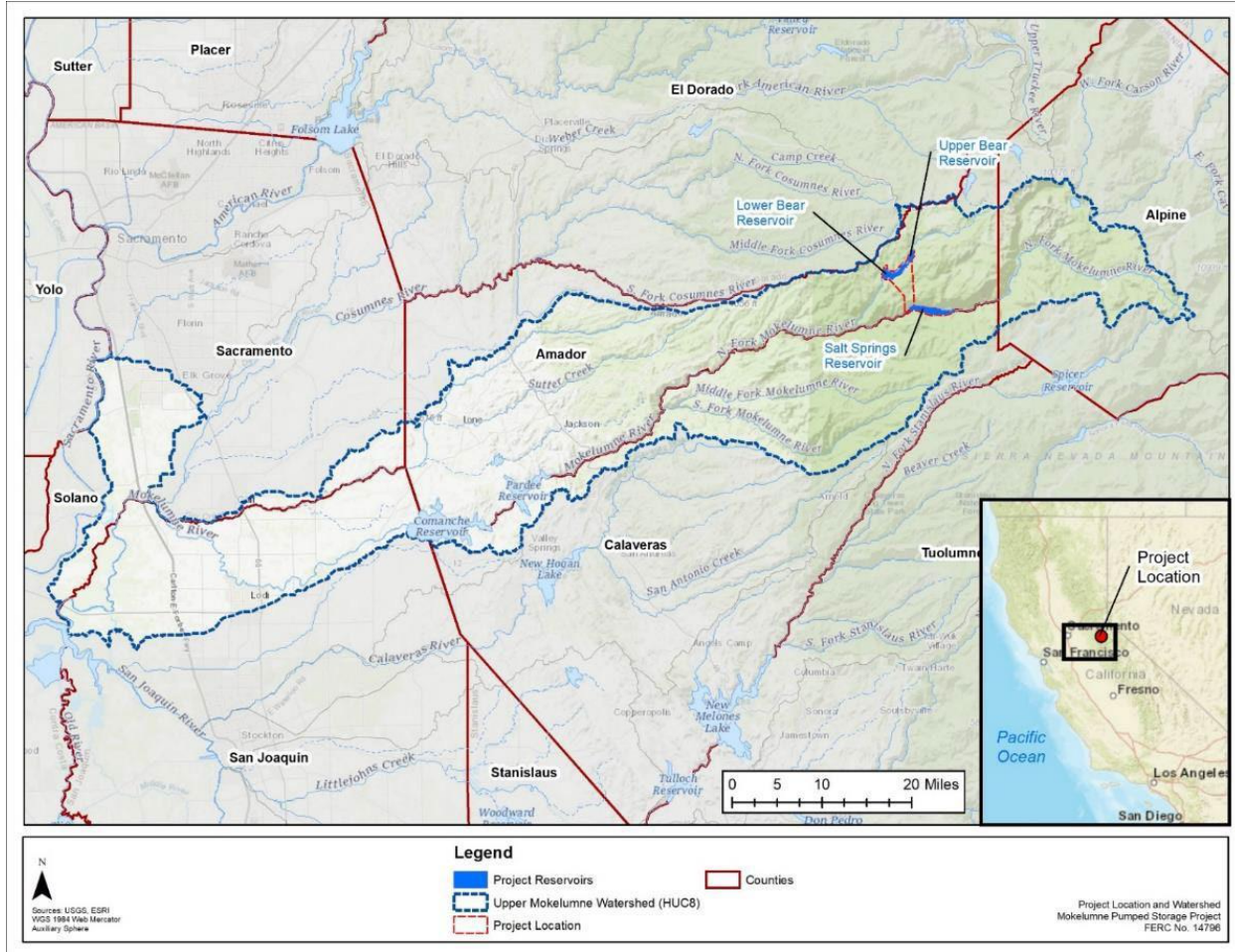
<sup>2</sup> See slides 34 and 36 Resource Portfolio Assumptions in Next CAISO 20 Year Transmission Outlook Joint Agency Presentation <https://www.energy.ca.gov/event/workshop/2023-06/joint-agency-staff-workshop-resource-portfolio-assumptions-next-caiso-20>

<sup>3</sup> See FERC Hydropower Licensing at <https://ferc.gov/licensing>



reliable, and dispatchable energy.<sup>4</sup> The Project is anticipated to be online by 2030.<sup>5</sup> The Project will interconnect with the bulk electric system at the existing Salt Springs substation located less than one mile from the proposed powerhouse and switchyard. The interconnection voltage for the Project is expected to be at 230 kV. See figure 1 for a more detailed map of the proposed project location.

Figure 1. Mokelumne Water Battery Project location and Upper Mokelumne River Watershed



<sup>4</sup> FERC Docket P-14796. Filing can be accessed at: <https://elibrary.ferc.gov/eLibrary/search/>; See also: <https://greengenerator.com/>

<sup>5</sup> The Project minimizes land and water impacts by taking advantage of existing infrastructure, including reservoirs and transmission facilities. As this Project is a long-lead time resource, GreenGen has been working collaboratively with stakeholders in the proposed Project vicinity, including resource agencies, Tribes, non-governmental organizations, and interested members of the public since 2018.

Also in Northern California, GreenGen points to the MQR Pumped Storage Water Battery Project, a proposed 280 MW, closed-loop project that will store 2,240-plus MWh per day of clean, reliable, and dispatchable energy.<sup>6</sup> The MQR Project is anticipated to be online by 2030. The Project will interconnect with the bulk electric system at the existing Tesla substation located less than two miles away or at another substation in the vicinity of the Project. The interconnection voltage for the Project is expected to be at 230 kV. See figure 2 below for a more detailed map of the proposed project location.

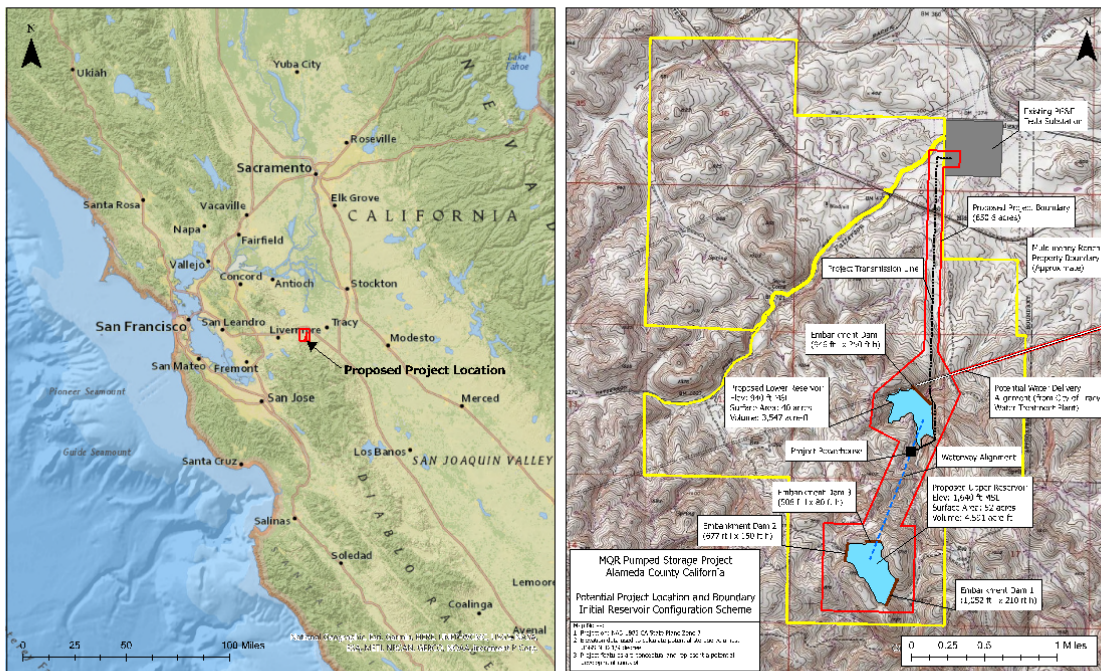


Figure 2. Proposed Project Location (left) and conceptual layout (right).

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<sup>6</sup> FERC Docket P-15312. Filing can be accessed at: <https://elibrary.ferc.gov/eLibrary/search>



**Conclusion**

GreenGen thanks the CEC, CAISO and CPUC for considering our comments and recommendations. We look forward to continued participation in the process.

Sincerely,

A handwritten signature in black ink, appearing to be the name "Nicholas Sher".

Nicholas Sher  
Managing Director, GreenGenStorage, LLC  
[Nicholas@greengenstorage.com](mailto:Nicholas@greengenstorage.com)