



## State Water Project Flexible Resources Study

### Introduction

The Department of Water Resources (DWR) is responsible for operating and maintaining the State Water Project (SWP) - a water conveyance system that includes 36 water storage facilities, 700 miles of rivers, pipelines, and canals, and 21 pumping plants. It is powered by a system of power-generation and power-recovery plants. The SWP is both a major producer and consumer of electricity. The SWP uses five hydroelectric generating plants and four hybrid pumping/generating plants to generate clean power. DWR sells most of the power it generates from the SWP to the California Independent System Operator (CAISO) market during peak demand hours to help displace fossil generation and lower overall grid greenhouse gas (GHG) emissions. The SWP is also the largest single consumer of electricity in California: electricity is used to operate the SWP pumping plants, which help deliver water throughout the State. SWP operations are optimized along the following parameters: first, the SWP meets its water delivery obligations; second, it operates within CAISO power market design constraints by consuming more energy during solar hours, which reduces greenhouse gas emissions, and by generating power during super peak hours, which helps displace fossil generation, again reducing greenhouse gas emissions. Because of the SWP's large power demand and its power production for CAISO, which provides electricity to approximately 80 percent of California, there is great potential to utilize SWP to advance statewide clean energy goals.

On October 9, 2019, Governor Newsom signed SB 49, Energy: appliance standards and State Water Project assessment (SB 49). The bill requires the California Natural Resources Agency (CNRA), the California Energy Commission (CEC), and DWR to collaborate on assessing the opportunities and constraints for potential operational and structural upgrades to the SWP to aid California in achieving its climate and energy goals, and to provide associated recommendations. The implementation of the recommended actions will be a staged process, ultimately driven by SWP reliability needs, available funding and economic viability, and the strategic timing and portfolio fit of each action.

The SWP's Flexible Resources Study is an ongoing power planning study that started a few years ago to develop a roadmap for the SWP's future participation in CAISO's evolving market. DWR is continuously engaged with CAISO to better position the SWP to help alleviate some of the challenges that CAISO operators are and will be facing. With the passage of SB 49, the study will be used to investigate how the SWP could provide varying ranges of electrical grid reliability

Agenda Item: 11

Meeting Date: August 18, 2021

Page 2

services that could help reduce reliance on fossil fuel energy resources and better integrate renewable resources in California. The study will look at the viability of implementation and needed capital investments. The Flexible Resources Study is a dynamic approach to meeting the state's clean energy goals: the study's scope and recommendations will change over time, evolving as state mandates addressing climate change, technology developments, CAISO's market design, reliability needs, and price trends continue to evolve.

### **Background**

This briefing, the second of three that the Commission will hear this year, will advance two goals within the Commission's Strategic Plan. Goal One calls on the Commission to "serve as a primary public forum for the discussion of improving water management policy to assist regions in achieving climate resiliency" and Goal Two directs the Commission to remain apprised of the operations and construction activities of the State Water Project, focusing on how the SWP adapts and responds to hydrological extremes expected with climate change, restores critical ecosystems, and addresses aging infrastructure. The Flexible Resources Study Plan briefings will bring to the Commission's public forum a discussion of how the operations of the SWP can be used to address policy priorities.

### **Meeting Overview**

At the August meeting, SWP Power and Risk Office (PARO) Manager, Ghassan ALQaser will update the Commission on the progress of the different planning tracks of the SB 49/SWP Flexible Resource Study, focusing on the potential grid reliability and emissions reductions benefits, and on SWP's opportunities and challenges relative to the implementation of the study's planning tracks, in the context of SB 49 goals.

This is an informational item.

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