DOCKETED	
Docket Number:	19-SB-100
Project Title:	SB 100 Joint Agency Report: Charting a path to a 100% Clean Energy Future
TN #:	236068
Document Title:	American Dams Comments - Comments of American Dams in Response to SB 100 Joint Agency Report
Description:	N/A
Filer:	System
Organization:	American Dams
Submitter Role:	Public
Submission Date:	12/18/2020 6:35:46 PM
Docketed Date:	12/21/2020

Comment Received From: American Dams
Submitted On: 12/18/2020
Docket Number: 19-SB-100

Comments of American Dams in Response to SB 100 Joint Agency Report

Additional submitted attachment is included below.

AMERICAN DAMS

December 18, 2020

California Energy Commission
1516 Ninth Street
Sacramento, CA 95814

RE: Comments of American Dams in response to the SB 100 Joint Agency Report: Charting a Path to a 100% Clean Energy Future

Dear Ms. Weeks

American Dams (https://Americandams.org) is the voice for more than 80,000 small dam owners across the United States. Our mission is to educate the public on the benefits of dams, provide information on regulatory and operational matters, and provide guidance to dam owners on how best to operate their dams for the public's benefits. One of these benefits is hydropower.

Provided herewith are our comments on the draft SB 100 Joint Agency Report.

American Dams appreciates the efforts of the California Energy Commission (CEC), the California Public Utilities Commission (CPUC) and the California Air Resources Board (CARB) in preparing the Joint Agency Report. We will limit our comments on the aspects of the report that pertain to dams: pumped storage as a component of long-term energy storage, future capacity contributions of new hydropower in California, minor operational changes at existing run-of-river projects in California to meet future capacity needs during critical electrical demand periods, and incremental future capacity additions at existing dams.

LONG TERM ENERGY STORAGE USING HYDROPOWER PUMPED STORAGE

The draft report identifies both short and long-term energy storage as key elements in meeting California's future capacity needs. In fact, approximately 3.1 gigawatts of future long-term storage are identified. Pumped storage has been used successfully across the United States and specifically in California to meet system capacity needs. It is a proven technology and when considering costs, can be the lowest cost long term energy storage resource. The challenge of pumped storage projects is the high capital cost and time frame for construction.

In the past several years, new pumped storage projects have been permitted in California but the mechanism for ensuring a reasonable rate of return to the project proponents has been difficult to achieve. If pumped storage and particularly closed loop pumped storage is to be a component of a 100 percent clean energy future, then California and the California Independent System Operator (CAISO) must have a long-term vision that will permit these projects to compete with other long- and short-term energy storage projects. We suggest a 10-year planning horizon and consideration of avoided costs to select the best candidate projects. That is, projects that can be completed within 10 years should be allowed to bid on new capacity additions to meet the 100

percent clean energy future by 2045. Further, avoided costs can be used as a comparative mechanism for selecting future projects. To ensure 100 percent clean energy, the pumping sources should be considered in the analysis.

Since pumped storage projects have capacity, energy and ancillary services benefits, California should investigate ways to maximize the public interest without placing the full burden of risk on the public. Cost escalation and schedule delays should be the responsibility of the project proponents. Nonetheless, it should be possible to develop procedures to fairly differentiate among alternatives. In today's market, it appears that short duration energy storage capacity additions are being selected by default because the time horizon for capacity additions is so short.

There should be no minimum size for selecting pumped storage or other long duration storage projects. The US Department of Energy is funding modular pumped storage research projects that can be as small as 5 MW. We understand that previous legislation has been proposed that required projects to be greater than 200 MW. Such minimums are arbitrary and capricious. It would be the responsibility of the project proponent to pay for any interconnection or other charges. This would enable a decision based solely on the capital and operating costs and benefits of the alternative projects.

OPPORTUNITIES TO RECOVER ENERGY FROM FUTURE WATER STORAGE PROJECTS

Historically, California has faced water supply challenges during drought conditions. With climate change and, in particular, with warmer temperature conditions, precipitation that previously fell as snow during winter and then melted over the spring months, may now fall as rain. Without a way to store this winter runoff, it will flow to the ocean and be under-utilized. Consequently, state agencies, irrigation districts, and others have identified a need for more water storage. There are several projects being considered that include off-stream water storage. These projects would withdraw water from streams and rivers when it is plentiful and then release water when it is needed for irrigation, municipal and industrial, and environmental purposes. These projects would typically release water during the summer and fall months, which coincide with the time of year that California experiences maximum electrical demand.

American Dams recognizes that the combined MW capacity of these projects is likely less that 1,000 MW and as such would not need to be modeled as part of the ongoing analysis. However, the Joint Agency Report should consider these projects as part of the solution for meeting future clean energy capacity needs. Given that these projects might be capable of providing more than 30 MW of capacity, California should consider doing away with the arbitrary and capricious 30 MW capacity limitation for defining projects eligible for Renewable Portfolio Standard (RPS) benefits versus zero-emissions projects. While we understand the original basis for limiting hydropower projects to 30 MW for purposes of meeting the RPS standard vis-à-vis the significant amount of large hydro in the state (i.e., hydropower accounts for about 20 percent of the existing generation capacity in California), that arbitrary size limit has outlived its usefulness.

American Dams agrees with the draft Joint Agency Report that large new hydropower on existing rivers in California is unlikely; hence, the state should eliminate the 30 MW RPS standard for new projects. This would allow maximum public benefit for new water supply projects that would recover the pumping energy and could assist in meeting electrical demand during critical demand periods. Otherwise, such project might be limited to recovering less than 30 MW, when they could be recovering significantly more power. This would waste energy when meeting water supply demand. Since these projects would be subject to rigorous National Environmental Policy Act and California Environmental Quality Act processes, environmental impacts would be mitigated. Hence, we see no reason why any future new hydro could not be included in RPS and qualify for such benefits.

MAXIMIZING THE CAPACITY VALUE OF RUN-OF-RIVER PROJECTS

Existing run-of-river hydro projects could present a unique opportunity to increase the state's generation capacity during critical electrical demand periods. In examining the CEC website, we identified 189 small hydropower projects in California. With minor operational changes, many of these projects have the potential to help meet electrical demand during critical electrical demand periods. Again, this is likely something that does not need to be modeled because in total, the capacity increase is likely to be less than 1,000 MW. However, this may be something to consider when there is a capacity shortfall, such as what happened this past summer (i.e., there was a shortfall of about 1400 MW).

As an example, this past summer, a hydropower project owner in Virginia worked with the US Fish and Wildlife Service and state resource agencies to increase the generation of a run-of-river project during the 5 highest days of electrical demand in the PJM ISO. The agencies agreed to allow the owner to conduct tests for short periods during up to 10 peak demand days. The result was very encouraging. The project generated significantly more power during the critical demand periods and had only a minor effect on the environment during the brief period the project increased generation.

For 2021, the project owner will receive significantly more capacity value than they received in 2020 because of the tests. The owner plans to continue these tests in 2021 with the expectation that even greater generation can be achieved that will determine the capacity benefits for 2022.

American Dams would be pleased to present the report complete with photographs to better explain how the operational changes were implemented and how environmental effects were minimized. The CEC and resource agencies can be leaders in California in undertaking a similar program to benefit the public.

NEW CAPACITY AT EXISTING DAMS SHOULD QUALIFY FOR RPS

Although California has over 14,000 MW of hydropower capacity, there is a potential for adding new capacity at existing dams (e.g., minimum flow units). If the capacity additions qualified for RPS, we envision that project owners would consider capacity expansions and unit upgrades. These contributions would be difficult to model, but they would certainly facilitate meeting the 100 percent clean energy future.

The US Department of Energy is assessing the potential for constructing new hydro using standardized modular hydro (SMH) at various sites across the country. These projects would capitalize on existing stream reaches that currently do not have dams. Although these projects may have merit, the SMH concept does not appear to warrant being included in the Joint Agency Report at this time. We mention it so that the CEC will engage the US DOE as that research develops. A key to the program is to develop these projects in harmony with the environment.

We would like to close by acknowledging the important role that dams can play in meeting climate change challenges. Dam operations in California are likely to change in the long term to meet the needs of the environment and the public. This could include improved ways to California's generation capacity needs.

American Dams appreciates the opportunity to comment on the Joint Agency Report. American Dams would be pleased to provide additional supporting information as requested by the CEC, CPUC and CARB staff. American Dams can be reached at (916) 719-7022 or at American_Dams@yahoo.com.

Sincerely.

Wayne M Dyok,
Executive Director