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State of California **California Natural Resources Agency**

M e m o r a n d u m

To: Commissioner Andrew McAllister, Presiding Member
Commissioner Noemi Gallardo, Associate Member

Date: October 23, 2024

From: **California Energy Commission**
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Subject: ISSUES IDENTIFICATION REPORT FOR THE WILLOW ROCK ENERGY STORAGE CENTER (21-AFC-02)

In its *Notice of Site Visit and Informational Hearing, and Committee Order* filed October 2, 2024 (TN 259430), the Willow Rock Energy Storage Center Committee ordered California Energy Commission (CEC) staff to file no later than October 23, 2024, a "concise Issues Identification Report summarizing the major issues that [staff] believes, thus far, are presented in the Supplemental AFC." CEC staff previously filed an Issue Identification Statement (TN 258407) on August 9, 2024, pursuant to a prior Committee order, so this filing serves as an update to that prior filing.

Project Description

The Willow Rock Energy Storage Center (WRESC) is a proposed compressed air storage energy storage facility by Gem A-CAES LLC (applicant), a wholly owned subsidiary of Hydrostor, Inc. On December 3, 2021, the applicant filed its original Application for Certification (AFC) for the project located at 8684 Sweetser Road in Rosamond, Kern County. In March 2024, the applicant filed a Supplemental AFC for the project, changing the location to 88.6 acres of private land immediately north of Dawn Road and between State Route (SR) 14 and Sierra Highway within unincorporated Kern County, California, approximately 4 miles north of Rosamond, California. The new project site is on undeveloped land in an area zoned Limited Agriculture (A-1) District. The area surrounding the project boundary is largely undeveloped with very sparse residential development; the nearest residence is approximately 0.8 mile northwest of the northwest corner of the WRESC site.

WRESC would be a nominal 520-megawatt (MW) gross (500 MW net) and 4,160 megawatt-hour (MWh) gross (4,000 MWh net) facility using Hydrostor, Inc.'s proprietary, advanced compressed air energy storage (A-CAES) technology. The overall facility would consist of four nominal 130 MW (gross) power turbine trains, outputting a total of 500 MW net at the point of interconnection. Each train would contain an electric motor-driven air compressor drivetrain, heat exchangers, an air turbine generator, air

exhaust stacks, and ancillary equipment. Each train would share a common set of thermal storage tanks (hot and cold water), as well as the air storage cavern. The WRESC would interconnect to Southern California Edison's Whirlwind Substation located southwest of the WRESC at the intersection of 170th Street W and Rosamond Boulevard, via a new approximately 19-mile 230-kilovolt (kV) generation-tie (gen-tie) line.

Staff Discovery Efforts

Staff commenced its discovery efforts immediately following the Executive Director's recommendation (TN 257763, docketed July 16, 2024) that the supplemental application be considered complete. Staff filed Data Request Set 1 on July 26, 2024, which included data requests covering the following technical areas: Alternatives, Cultural and Tribal Cultural Resources, and Socioeconomics. Staff filed Data Request Set 2 on August 22, 2024, which included data requests covering the following technical areas: Air Quality; Hazardous Materials and Wildfire; Land Use, Agriculture, and Forestry; Public Health; and Transportation. Staff filed Data Request Set 3 on September 23, 2024, which included data requests covering the following technical areas: Biological Resources, Greenhouse Gas Emissions, Hazardous Waste, Reliability, Transmission System Engineering, Water Resources, and Worker Safety and Fire Protection. Staff filed Data Request Set 4 on September 27, 2024, which included data requests covering the following technical areas: Biological Resources, and Hazardous Materials and Worker Safety/Fire Protection. Staff may file additional data requests covering the same or additional technical areas or following up on prior data requests up until the Committee ordered deadline for discovery activities, which is January 13, 2025.

At the date of this report, the applicant has provided responses to Data Request Set 1 and 2. CEC staff is evaluating these responses for completeness and sufficiency.

Issues Identification

Based on staff's analysis of the project as it is presently described in the applicant's supplemental application materials filed in the docket, staff continues to draw the Committee's attention to potential issues in the technical areas of Biological Resources, Cultural and Tribal Cultural Resources, and Water Resources that could significantly affect staff's schedule for preparing its Preliminary Staff Assessment (PSA).

Biological Resources

A total of 3,449 western Joshua trees are present in the Study Area (Figure 4, WSP 2024a, 2024c). The Study Area includes the 1,000-foot radius around the Willow Rock Energy Storage Center (WRESC) and 500-foot buffer around the gen-tie line alignment. Trees on the project's gen-tie route are anticipated to be avoided, and several trees would be relocated. Final numbers would be determined through the review and approval of the Western Joshua Tree Relocation Plan (WJTRP).

The Project Area includes the WRESC site, parcels within the project boundary, and the right of way associated with the WRESC's gen-tie line (WSP 2024b). Primarily the Project Boundary and Staging Areas contain the greater number of western Joshua trees, which is also the eastern portion of the Project Area. The Project Boundary includes the WRESC site and parcels of land that will be allocated for potential temporary staging and laydown, or the permanent architectural berm. The Staging Area includes P1, P2N, P2S, and VH.

Staff and the California Department of Fish and Wildlife (CDFW) have requested the WJTRP in Data Request Set 4, Data Request 92 (TN259326). Staff, CURE, and the Center for Biological Diversity met with the applicant on October 7, 2024, as part of an information exchange where the applicant provided an overview of their draft WJTRP and requested feedback from staff and the intervenors. Since CDFW was unable to attend this meeting, another information exchange meeting was held on October 17, 2024, to accommodate CDFW. Applicant's response to Data Request 92 is anticipated to be received on October 28, 2024.

References Cited

WSP 2024a – WSP USA Inc. (TN254820). WRESC Western Joshua Tree Report 1 of 2. March 2024. Available online at: https://efiling.energy.ca.gov/GetDocument.aspx?tn=254820&DocumentContentId=90468

WSP 2024b – WSP USA Inc. (TN254816). WRESC Biological Resources Assessment Report. March 2024. Available online at: https://efiling.energy.ca.gov/GetDocument.aspx?tn=254816&DocumentContentId=90465

WSP 2024c – WSP USA Inc. (TN254806). Willow Rock Energy Storage Center SAFC Volume 1, Part A. March 2024. Available online at: https://efiling.energy.ca.gov/GetDocument.aspx?tn=254806&DocumentContentId=90427

Cultural Resources/Tribal Cultural Resources

There are substantial information gaps concerning cultural and tribal cultural resources that could delay the project schedule. The CEC staff have data requests concerning the cultural resources survey reported in the Supplemental AFC and confidential cultural resources technical report (WSP 2024a, 2024b). Specifically, significant portions of the project area and gen-tie routes have not been surveyed because property owners denied access to surveyors, and a substantial number of built environment resources were not described in the confidential cultural resources report or shown on the survey report maps. CEC staff asked for additional survey data and other information in Data Request Set 1.

Pursuant to the CEC's Tribal Consultation Policy and the California Environmental Quality Act (CEQA), the CEC staff initiated consultation with California Native American tribes, inviting consultation on the project generally, as well as welcoming consultation on the development of a revised Cultural Resources Phase II Testing Plan. Although a query of the California Native American Heritage Commission's Sacred Lands Files has not identified the presence of tribal cultural resources documented in the Project Area of Analysis, tribal consultation could result in the identification of significant tribal cultural resources.

Several archaeological resources within the project area were not evaluated in the confidential cultural resources assessment. The applicant developed a Cultural Resources Testing Plan to satisfy the CEC staff's data adequacy requests associated with the project application and to evaluate sites subject to potential impact for significance under CEQA (WSP 2024c).

The applicant has determined that potential impacts to the 11 as-yet-unevaluated archaeological resources within the WRESC facility footprint and along the preferred gen-tie route can be minimized but cannot be avoided fully through project redesign (WSP 2024c, page 1). Thus, the project could encounter challenges should the archaeological investigation conclude that one or more archaeological resources are significant under CEQA. Without complete baseline data, staff cannot definitively say whether project impacts are significant or can be mitigated to a less than significant level.

The applicant indicated in Data Response Set 1 that unresolved cultural resources data requests would be addressed in resubmitted drafts of the Phase II Cultural Resources Testing Plan and a Revised Cultural Resources Survey Report (WSP 2004d). Staff has yet to receive either document for review and data requests related to cultural and tribal cultural resources remain unresolved.

References Cited

WSP 2024a – WSP USA Inc. (TN 254806). Willow Rock Energy Storage Center SAFC Volume 1, Part A. March 2024. Available online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=21-AFC-02

WSP 2024b – WSP USA Inc. Cultural Resources Assessment of Willow Rock Energy Storage Center (WRESC) Advanced Compressed Air Energy System (A-CAES) Project. March 1, 2024. Confidential filing

WSP 2024c – WSP USA Inc. (TN 257813). Willow Rock Energy Storage Center Cultural Resources Phase II Testing Plan. Confidential filing. June 17, 2024

WSP 2024d – WSP USA Inc. (TN:258681) Willow Rock Data Request Set I Response Report. August 2024

Water Resources

Staff has identified two issues related to Water Resources, specifically dealing with permitting requirements for waste discharge.

The first issue relates to the handling of brine reject from the reverse osmosis system. The Supplemental AFC states brine waste is proposed to be evaporated in a zero-discharge, lined, evaporation pond. The Supplemental AFC also states that there will be no waste discharge to the ground during the construction or operation phases and that a permit is not anticipated. A water balance diagram provided indicates an estimated discharge of 20,000 gallons per year (55 gallons per day) to the evaporation pond (WSP 2024b). During Data Adequacy, staff requested the applicant resolve the perceived inconsistency related to the stated process of a proposed zero waste discharge and discharge to the pond. In response, the applicant reiterated that there would be no waste discharge (TN256622). Based on past experience, whenever wastewater is discharged to a surface pond, Waste Discharge Requirements would need to be issued by the Lahontan Regional Water Quality Control Board (RWQCB) to regulate the discharge. Lahontan RWQCB staff informed staff that a Report of Waste Discharge is required for land disposal regulated under California Code of Regulations, Title 27, and indicated a 401 Water Quality Certification application would be required (TN 257954).

The second issue relates to whether the process of using compressed air to displace water in the underground storage cavern should be included under the Underground Injection Control (UIC) Program administered by the U.S. Environmental Protection Agency (EPA). The Supplemental AFC indicates that the project is expected to be exempt from the requirements of a UIC permit since the process is a closed loop system and the shafts and the cavern would be lined. The applicant indicated that they expect to be able to provide supplemental information to U.S. EPA to support a determination of non-applicability (WSP 2024b).

For both issues, the applicant did not submit copies of any preliminary correspondence between the project applicant and state and federal resource agencies regarding whether federal or state permits from those agencies would be required for the proposed project.

In a preliminary discussion, Lahontan RWQCB staff said they were unaware if the applicant provided preliminary correspondence, and they had not reviewed the project in sufficient detail to render an opinion regarding permit applicability.

An email from Lahontan RWQCB staff (TN 258495) confirmed that an application for the land disposal unit is required. In addition, the Lahontan RWQCB staff identified multiple issues in which additional information is required before RWQCB staff can determine if other permit applications are required including waste characterization, water process diagrams, dewatering waste handling, and other various reports and information.

References Cited

WSP 2024b – WSP USA Inc. (TN 254805). Willow Rock Energy Storage Center SAFC Volume 1, Part B. March 2024. Available online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=21-AFC-02

TN 256622 – WSP USA Inc. (TN 256622). Willow Rock Data Adequacy Response

TN 257954 – RWQCB (TN 257954). Email from Lahontan Water Board re 401 Water Quality Certification Application

TN 258495 – RWQCB (TN 258495). Lahontan Water Board Staff review and comments