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STATE OF CALIFORNIA — NATURAL RESOURCES AGENCY Gavin Newsom, *Governor*

CALIFORNIA ENERGY COMMISSION
715 P Street
Sacramento, California 95814

energy.ca.gov

CEC-70 (Revised 7/22)

IN THE MATTER OF: *Understanding the Role of Long Duration Energy Storage in California's Evolving Energy System*	DOCKET NO. 20-MISC-01 NOTICE OF REMOTE-ACCESS WORKSHOP RE: Storage and Renewable Technology for a Decarbonized Grid

Notice of Workshop on Understanding the Role of Long Duration Energy Storage in California's Evolving Energy System

October 9, 2023

1:30 p.m. – 3:30 p.m.
Remote Access Only
See Attendance Instructions.

The California Energy Commission (CEC) will host a workshop to share capacity expansion modeling results from the project "Modeling of Long-Duration Storage for Decarbonization of California Energy System" awarded to The Regents of the University of California, Merced (UC Merced) under the Electric Program Investment Charge (EPIC) program. This project assesses the role of energy storage, including long-duration energy storage (LDES), in meeting California's clean energy goals.

The public can participate in the workshop consistent with the attendance instructions below. The CEC aims to begin promptly at the start time posted, and the end time is an estimate based on the proposed agenda. The workshop may end sooner or later than the posted end time.

Agenda

UC Merced's project team will present their analysis of the value of LDES to California's energy grid to reach California's clean energy goals established by Senate Bill 100 (SB 100) (De León, 2018). Input from vendors, researchers, community stakeholders, and other interested parties will guide the completion of UC Merced's project Final Report. Questions and comments will be taken at the end of the presentation.

At the workshop, UC Merced's project team will:

1. Summarize recent advancements in available LDES technologies and the inputs used in the analysis.

2. Present how cost targets for LDES depend on efficiency and how the cost targets will change relative to Li-ion batteries in 2030, 2035, 2040, and 2045.
3. Identify storage durations that would be most beneficial to California.
4. Present the effects of modeling sensitivities on the need and value of LDES, including:
   - electric vehicle charging profiles
   - solar and wind generation profiles
   - use of oxy-combustion
   - role of LDES in the transmission system at the California Independent System Operator (CAISO) and Western Electricity Coordinating Council (WECC) levels
   - use of electrolyzers as flexible loads to help stabilize the grid.
5. Summarize key conclusions for CEC and LDES companies/customers.

Background

California has established goals for greenhouse gas (GHG) reductions in the electric sector and economywide. In 2018, Governor Brown extended those goals by signing SB 100, which requires all retail electricity to be supplied by zero-carbon resources by 2045, and an executive order calling for the state to achieve carbon neutrality by 2045 (EO B-55-18). Previous studies have indicated that 90 percent or more GHG reductions in the electricity sector are achievable with today's technology. This includes a mix of solar photovoltaics, wind resources from in-state, out-of-state, and offshore, and existing energy storage technologies such as lithium-ion batteries and pumped storage hydropower or compressed air energy storage. Reaching a GHG reduction of 100 percent may require newer technologies, including different types of long-duration energy storage.

This project is evaluating scenarios that include a mixture of existing and emerging long-duration storage technologies to understand the role and cost targets for long-duration storage options to reach California's zero-carbon and related goals by 2045. There are different pathways to meet California's energy goals. The objective of capacity expansion modeling is to understand the potential role and value of LDES under different grid conditions and mixes of energy resources.

Attendance Instructions

Remote participants may join via Zoom by internet or phone.

- **To join via Zoom.** Click on https://energy.zoom.us/j/82010690375?pwd=bjlxMEJLTWlsUWhvNE5BNnNXVUg4QT09 or login in at https://zoom.us/ and enter the Webinar ID 820 1069 0375 and passcode 012157 and follow all prompts.
- **To join by telephone.** Call toll-free at (888) 475-4499 or toll at (669) 219-2599. When prompted, enter the Webinar ID 820 1069 0375 and passcode 012157.

Zoom Closed Captioning Service. At the bottom of the screen, click the Live Transcript CC icon and choose "Show Subtitle" or "View Full Transcript" from the pop-up menu. To stop closed captioning, close the "Live Transcript" or select "Hide Subtitle" from the pop-up menu. If joining by phone, closed captioning is automatic and cannot be turned off. While closed captioning is available in real-time, it can include errors.

Zoom Difficulty. Contact Zoom at (888) 799-9666 ext. 2, or the CEC Public Advisor at publicadvisor@energy.ca.gov, or by phone at (916) 957-7910.

Public Comment.
The CEC encourages the use of its electronic commenting system. Visit the e-commenting page for this docket at https://efiling.energy.ca.gov/EComment/EComment.aspx?docketnumber=20-MISC-01. Enter your contact information and a subject title that describes your comment. Comments may be included in the "Comment Text" box or attached as a downloadable, searchable document in Microsoft® Word or Adobe® Acrobat®. The maximum file size allowed is 10 MB.

Oral comments will be accepted at the end of the workshop. Comments may be limited to three minutes or less per speaker and one person per organization. To comment via Zoom, use the "raise hand" feature so the administrator can announce your name and unmute you. To comment via telephone, press *9 to "raise your hand" and *6 to mute/unmute.

Written comments may be submitted to the Docket Unit by 5:00 p.m. on October 23, 2023. Written and oral comments, attachments, and associated contact information (including address, phone number, and email address) will become part of the public record of this proceeding with access available via any internet search engine. Written comments may also be submitted by email. Include docket number 20-MISC-01 and "2020 Miscellaneous Proceedings" in the subject line and email to docket@energy.ca.gov.

A paper copy may be mailed to:
California Energy Commission
Docket Unit, MS-4
Docket No. 20-MISC-01
715 P Street
Sacramento, California 95814

Public Advisor. The CEC's Public Advisor assists the public with participation in CEC proceedings. To request assistance, interpreting services, or reasonable modifications and accommodations, call (916) 957-7910 or email publicadvisor@energy.ca.gov as soon as possible but at least five days in advance of the workshop. The CEC will work diligently to meet all requests based on availability.

Media Inquiries. Email mediaoffice@energy.ca.gov or call (916) 654-4989.

General Inquiries: Email Jeffrey Sunquist at jeffrey.sunquist@energy.ca.gov or call (916) 776-0816.

Availability of Documents: Documents and presentations for this meeting will be available in the Docket Log at https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=20-MISC-01. When new information is posted, an email will be sent to those subscribed to the "Electric Program Investment Charge (EPIC) Program" and "Energy Research and Development" email subscriptions. To receive these notices or notices of other email subscription topics, visit Subscriptions, at https://www.energy.ca.gov/subscriptions.

Dated: August 25, 2023, at Sacramento, California.

Jonah Steinbuck
Director of the Energy Research and Development Division

Subscriptions:
Electric Program Investment Charge (EPIC) Program
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