

**DOCKETED**

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**CALIFORNIA ENERGY COMMISSION**

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CEC-70 (Revised 06/2022)



*IN THE MATTER OF:*

*Proposed Final Scenarios to Assess the Role  
of Long Duration Storage*

Docket No. 20-MISC-01

NOTICE OF REMOTE-ACCESS  
WORKSHOP

RE: Storage and Renewable  
Technology for a Decarbonized Grid

**Notice of Proposed Final Scenarios to Assess  
the Role of Long Duration Storage Workshop  
July 12, 2022**

10:00 a.m. – 12:00 p.m.  
**Remote Access Only**

**See instructions below.**

California Energy Commission (CEC) staff will host a workshop to receive comments on research activities for 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). This project assesses the role of energy storage, including long duration energy storage (LDES), in meeting California's clean energy goals. This workshop builds upon UC Merced's presentation at the November 17, 2021 workshop entitled "Strategies to Model Long Duration Storage," which can be found on the CEC's [event page](https://www.energy.ca.gov/event/workshop/2021-11/staff-workshop-strategies-model-long-duration-storage) at <https://www.energy.ca.gov/event/workshop/2021-11/staff-workshop-strategies-model-long-duration-storage>.

A quorum of commissioners may participate remotely, but no votes will be taken. The location(s) of any remote-participating commissioners are listed in the instructions below.

The workshop will be held remotely. The public can participate in the workshop consistent with the directions provided below. The CEC aims to begin promptly at the start time posted and the end time is an estimate based on the agenda proposed. The workshop may end sooner or later than the posted end time depending on various factors.

## **Agenda**

UC Merced's project team will present an update of 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 collected from researchers, vendors, advocates, community members, and other interested parties participating in the workshop will guide the team's upcoming development of the final scenario to assess California's energy storage needs.

At the workshop, the project team will:

- 1) Present a study of the effect of time horizon and the energy capital cost of LDES on the duration selected by an optimization model. This study identifies the required time horizon needed to capture the value of LDES appropriately. It also shows the extent to which the cost of LDES will need to be reduced to motivate adoption of longer durations of storage.
- 2) Present a study to understand how the value of LDES changes under 39 scenarios with different generation mixes, transmission expansion, storage costs, and storage mandates.
- 3) Present a study of the minimum cycles per year needed to balance supply and demand to better understand the roles of diurnal, cross-day, and seasonal storage applications.
- 4) Define an approach for using the RESOLVE Capacity Expansion Model to assess LDES in 365-day optimization for a range of grid scenarios.

CEC staff and the UC Merced project team will seek feedback from the public, stakeholders, and other attendees.

## **Background**

California has established bold goals for greenhouse gas (GHG) reductions, both 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 GHG reductions of 90 percent or more in the electricity sector are achievable with today's technology at a projected reasonable cost. This includes a mix of solar PV, wind resources from in state and out of state as well as offshore, and existing energy storage technologies such as lithium-ion batteries and pumped hydro or compressed air. Additionally, reaching a GHG reduction of 100 percent may require newer technologies including different types of long-duration energy storage.

This project will evaluate scenarios that include a mixture of existing and emerging long-duration storage technologies to better understand the role and cost targets for long-duration storage options to reach California's zero-carbon and related goals by 2045. The selection and analysis of scenarios will have the specific objective to understand the potential impact of actions that the state may take to find the path to a new energy system that not only meets California's current targets, but does so at a lower cost, while retaining jobs and providing greater grid reliability, leading to an improved quality of life for Californians.

## **Remote Attendance Instructions**

The workshop may be accessed by clicking the Zoom link below or visiting [Zoom](#) at <https://join.zoom.us> and entering the ID and password for the workshop listed below. If you experience difficulties joining, contact Zoom at (888) 799-9666 ext. 2, or the Public Advisor at [publicadvisor@energy.ca.gov](mailto:publicadvisor@energy.ca.gov) or at (916) 957-7910.

**Link to Workshop:** <https://energy.zoom.us/j/92140845360>

**Workshop ID:** 92140845360

**Workshop Password:** [storage](#)

Use the "raise hand" feature to indicate you want to speak and the event facilitator will indicate when your line is open and ready for you to make comment.

**To Participate by Telephone**, dial (213) 338-8477 or (877) 853-5257 (toll free) When prompted, enter the ID: 921 4084 5360. To comment, dial \*9 to "raise your hand" and \*6 to mute/unmute your phone line.

**Zoom's closed captioning service** will be enabled for the meeting. Attendees can use the service by clicking on the "live transcript" icon and then choosing either "show subtitle" or "view full transcript". The closed captioning service can be stopped by exiting out of the "live transcript" or selecting the "hide subtitle" icon. Closed captioning cannot be exited by phone.

## **Public Comment**

**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. If participating via Zoom's online platform, use the "raise hand" feature so the administrator can announce your name and unmute you. If you are participating by telephone, press \*9 to "raise your hand" and \*6 to mute/unmute.

**Written comments** must be submitted to the Docket Unit by 5:00 p.m. on July 26, 2022.

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.

The CEC encourages use of its electronic commenting system. Visit the [e-commenting page](#) at <https://efiling.energy.ca.gov/EComment/EComment.aspx?docketnumber=20-MISC-01>, which links to the comment page for this docket. Enter your contact information and a comment title describing the subject of your comment(s). 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.

Written comments may 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](mailto:docket@energy.ca.gov).

A paper copy may be sent to:

California Energy Commission  
Docket Unit, MS-4  
Docket No. 20-MISC-01  
715 P Street  
Sacramento, California 95814

### **Public Advisor and Other CEC Contacts**

The CEC's Public Advisor provides the public with assistance in participating in CEC proceedings. For information about how to participate in this workshop or to request interpreting services or other reasonable modification and accommodations, reach out by phone at (916) 957-7910 or via email at [publicadvisor@energy.ca.gov](mailto:publicadvisor@energy.ca.gov). Requests should be made for interpreting services, reasonable modifications and accommodations as soon as possible but at least five days in advance of the workshop. However, the CEC will work diligently to meet all requests based on the availability of the service or resource requested.

**Direct media inquiries** to [mediaoffice@energy.ca.gov](mailto:mediaoffice@energy.ca.gov) or (916) 654-4989.

**Direct general or technical subject inquiries** to Jeffrey Sunquist at [jeffrey.sunquist@energy.ca.gov](mailto:jeffrey.sunquist@energy.ca.gov) or (916) 776-0816.

### **Availability of Documents**

Documents and presentations for this meeting will be available at the CEC's [docket log](#) for docket number 20-MISC-01 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" subscription topics. To receive these notices, or sign up for other email subscription topics, visit [Subscriptions](#), at <https://www.energy.ca.gov/subscriptions>.

Dated: June 27, 2022, at Sacramento, California

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Jonah Steinbuck  
Deputy Director, Energy Research and Development Division

Subscription List: Electric Program Investment Charge (EPIC) Program, Energy Research and Development