

DOCKETED	
Docket Number:	20-MISC-01
Project Title:	2020 Miscellaneous Proceedings.
TN #:	240212
Document Title:	Notice of Staff Workshop on Strategies to Model Long Duration Storage
Description:	November 17, 2021; 1:00 p.m.; The California Energy Commission (CEC) will host a workshop to solicit feedback about a study conducted by The Regents of the University of California, Merced (UC Merced) focused on (a) long-duration storage technologies, (b) how the choice of renewable energy technologies affects the needed storage, and (c) how these provide a foundation for modeling the multiple roles of storage in California's evolving grid.
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CALIFORNIA ENERGY COMMISSION715 P Street
Sacramento, California 95814energy.ca.gov

CEC-70 (Revised 2/2021)

*IN THE MATTER OF:**Staff Workshop on Strategies to Model Long Duration Storage*

Docket No. 20-MISC-01

NOTICE OF REMOTE-ACCESS
WORKSHOPRE: Storage and Renewable
Technology for a Decarbonized Grid**Notice of Staff Workshop on Strategies to Model Long Duration Storage****November 17, 2021**

1:00 p.m. to 3:00 p.m.

Remote Access Only

The California Energy Commission (CEC) will host a workshop to solicit feedback about a study conducted by The Regents of the University of California, Merced (UC Merced) focused on (a) long-duration storage technologies, (b) how the choice of renewable energy technologies affects the needed storage, and (c) how these provide a foundation for modeling the multiple roles of storage in California's evolving grid.

The workshop will be held remotely, consistent with Assembly Bill 361 (Rivas, Chapter 165, Statutes of 2021) to improve and enhance public access to state agency proceedings during the COVID-19 pandemic by allowing broader access through teleconferencing options. The public can participate in the workshop consistent with the direction provided below. Please note that 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 summaries of its baseline analysis of California's energy grid and preliminary generation and storage technology, with respect to the need for energy storage, including long-duration energy storage, to meet California's clean energy goals established by Senate Bill 100 (SB 100) (De León, Chapter 312, Statutes of 2018). Input from vendors,

researchers, community stakeholders, and other interested parties will guide the team's upcoming development of preliminary scenarios to assess California's energy storage needs.

The presentation will:

1. Showcase California's energy generation options and storage options, including long duration storage.
2. Describe the project team's approach to using RESOLVE for full-year capacity expansion modeling, including the baseline model inputs and sensitivities analysis in parallel with using SWITCH to understand implications of coordination with the Western Electricity Coordinating Council (WECC).
3. Define proposed grid scenarios for further analysis.

CEC staff and the UC Merced project team will seek feedback from the public, stakeholders, and attendees about the following topics:

- Solar generation profiles with the use of latitude tilt to gain more winter generation.
- Wind generation profiles with the use of more winter-dominant wind sites to gain more winter generation.
- Cost targets for candidate long duration storage technologies in the context of competing with lithium ion batteries and pumped-hydro storage.
- Hydrogen electrolysis coupled with overbuild of solar generation to provide fuel for industrial and transportation sectors and for seasonal balancing.
- Feedback on the draft Storage Technologies Summary and Generation Technologies Summary reports.

Background

California has established aggressive 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 Executive Order B-55-18 calling for the state to achieve carbon neutrality by 2045. 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 photovoltaic (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. However, reaching a GHG reduction of 100 percent may require newer technologies including different types of long-duration energy storage.

This project will evaluate scenarios with different mixtures of existing and emerging long-duration storage technologies to understand the role and cost targets for long-duration storage options to aid the state of California to reach zero-carbon and related goals by 2045. The selection and analysis of scenarios will have the specific objective of understanding the potential impact of actions that the state may take in order 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 creating jobs, providing greater grid reliability, and leading to an improved quality of life for California ratepayers.

Remote Attendance Instructions

The workshop may be accessed by clicking the Zoom link below or visiting [Zoom](https://zoom.us) 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 or by phone at (916) 957-7910

Link to Workshop:

<https://energy.zoom.us/j/91881542817?pwd=MVhIOG50RkRHRkhwMwQ1R1IzZThhUT09>

Workshop ID: 918 8154 2817

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 (669) 219-2599 or toll-free at (888) 475-4499. When prompted, enter the ID: 918 8154 2817. 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 workshop. 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 closing out of the "live transcript" or selecting the "hide subtitle" icon. Those joining by phone will not have the option to end the closed captioning. [For events that will have a court reporter, add the following: A transcript of the workshop rendered by a professional court reporter will be filed into the docket system and posted on the webpage like other workshops.]

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 December 7, 2021. 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://www.energy.ca.gov/proceedings/e-filing-and-e-commenting> which links to the comment page for this docket, <https://efiling.energy.ca.gov/EComment/EComment.aspx?docketnumber=20-MISC-01>. 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 "Strategies to Model Long Duration Storage" in the subject line and email to 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 via email at publicadvisor@energy.ca.gov or by phone at (916) 957-7910. Requests for interpreting services, reasonable modifications and accommodations should be made 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 the availability of the service or resource requested.

Direct media inquiries to mediaoffice@energy.ca.gov or (916) 654-4989.

Direct technical subject inquiries to Jeffrey Sunquist at jeffrey.sunquist@energy.ca.gov or (916) 776-0816.

Availability of Documents

Documents and presentations for this meeting will be available at [CEC's e-comment page for docket number 20-MISC-01](https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=20-MISC-01)<https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=20-MISC-01>.

When new information is posted, an email will be sent to those on the epic and research list servers. To receive these notices, manage list server subscriptions at the [CEC List Servers](https://ww2.energy.ca.gov/listservers/index cms.html), at <https://ww2.energy.ca.gov/listservers/index cms.html>.

Dated: November 3, 2021, at Sacramento, California

Jonah Steinbuck
Deputy Director, Energy Research and Development Division

List Servers: epic, research