

## **1. Welcome, Call to Order**

Kevin Harris, Production Cost Data Subcommittee (PCDS) Chair, called the meeting to order at 10:04 a.m. MT on March 27, 2024. A quorum was present to conduct business. A list of attendees is attached as Exhibit A.

## **2. Review WECC Antitrust Policy**

Jon Jensen, Reliability Modeling Engineer, read aloud the WECC Antitrust Policy statement. The meeting agenda included a link to the posted policy.

## **3. Approve Agenda**

Mr. Harris introduced the proposed meeting agenda.

**On a motion by Chifong Thomas, the PCDS approved the agenda.**

## **4. Review and Approve Previous Meeting Minutes**

Mr. Harris introduced the minutes from the meeting on March 13, 2024.

**On a motion by Ms. Thomas, the PCDS approved the minutes from March 13, 2024.**

## **5. Review Previous Action Items**

Mr. Jensen reviewed action items carried over from the PCDS meeting on March 13, 2024.

Action items that are not closed and will be carried forward can be found [here](#).

## **6. Announcements**

Mr. Jensen reviewed the announcements. Jamie Austin informed Mr. Jensen that she is retiring and gave him permission to share that information with the PCDS.

WECC has been having some website issues, so the 2034 Anchor Data Set (ADS) case is not available yet.

Mr. Jensen reached out to NREL to do the behind-the-meter (BTM) photovoltaic (PV) ratios weightings for us. They said they would, but he is still waiting to hear back from them. It was suggested that, if he doesn't hear back from NREL, that they turn on the Area Level BTM PV, because some of the buses are not in the case anymore and, if they use the existing counting

level from last time, the weightings would be inaccurate. This is something they will address in the next meeting.

Ashton Davis, Staff Reliability Modeling Specialist, gave an update on 2034 Loads and Resources (L&R). He has been getting clarification on generators that were not included in this year's submissions but were expected to be in the submission. He has been validating the generators that have been submitted. A problem he now has is that a lot of the future resources that the Balancing Authorities (BA) submitted do not have bus numbers, so he is not sure where to put them. He does have location and information on the some of them, but they will need to contact the Anchor Power Flow Task Force (APFTF) and PCDS to get help placing them. Otherwise, he feels confident about the generator list.

The presentation is posted on the WECC website.

## **7. Wind/Solar Capacity Factor Review**

Kellen Romero, Staff Reliability Assessments Engineer, presented a review of the Wind/Solar Capacity Factors. He used the 2018 NREL data, which has not been changed or updated on the NREL side and was used last cycle in the 2032 ADS for the Production Cost Model (PCM). Mr. Romero showed scatter plots for the different energy sources in relation to monthly and yearly averages for capacity factors (CF) and how they change through the seasons.

## **8. ADS Updates**

Mr. Jensen presented an update on the ADS. He presented load comparison by subregion and energy by subregion; the difference between 2032 ADS V2.4.3 Capacity and 2034 ADS V0.8 Capacity; the Annual Energy Generation (GWh) by state and fuel; and a 2032 and 2034 ADS comparison for coal, gas, and energy storage by location.

Mr. Jensen also presented graphs provided by Ms. Austin for the 2034 ADS-v1 Validation. This presentation included flows by region, the California-Oregon Intertie (COI) Validation and the south-to-north flow increase in the second half of the year, and the Pacific DC Intertie (P65) and the power flow (MW) comparison between 2032 and 2034 ADS.

He showed shapes (hours 1–24 charging and discharging) for BTM storage for residential compared to non-residential for SCE, CAISO, SDG&E, and PG&E.

## **9. Hydro Resources, Share Update and Plan**

Nathalie Voisin gave an update on hydro resources. This included a scope for WECC ADS 2034 hydropower, including a list of tasks.

- Task 1: Dataset update



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- Task 2: Mode of operations (load vs. price following)
- Task 3: Extension to Canada
- Task 4: Finalize dataset

Mr. Harris discussed the hourly data that was collected and calculated with operational parameters and did weekly operation on it in California and other entities outside the Northwest who provided the information. Fifteen projects outside the Core Columbia are in the range of 20,000 MW, which is the base hydro generation in the Northwest. The operating range looks good, but they are not additive. Units not in the hourly profile used the weekly operation and the operating range that Ms. Voisin provided. By consensus, the PCDS chose to continue to look into the hydro resources plan.

### 10. Public Comment

No comments were made.

### 11. Review New Action Items

- Look into wind capacity factors 20% and below, compared to EIA 923.
  - Assigned To: Kellen Romero
  - Due Date: April 10, 2024
- Organize wind and solar by area/state name.
  - Assigned To: Jon Jensen
  - Due Date: April 10, 2024
- Ask Chelsea Loomis for the presentation to post on the PCDS team site from the March 13, 2024, meeting.
  - Assigned To: Jon Jensen
  - Due Date: April 10, 2024
- Simplify/reduce subtypes in generator list.
  - Assigned To: Jon Jensen
  - Due Date: April 10, 2024

### 12. Upcoming Meetings

April 10, 2024.....	Virtual
April 24, 2024.....	Virtual
May 8, 2024.....	Virtual



### **13. Adjourn**

Mr. Harris adjourned the meeting without objection at 11:33 a.m.



## Exhibit A: Attendance List

### Members in Attendance

Kevin Harris ..... Pacific Northwest National Laboratory  
Eliana Ibarra ..... Imperial Irrigation District  
Richard Jensen..... California Energy Commission  
Jon Jensen.....WECC  
Kimberly McClafferty .....NorthWestern Energy  
Gary Simonson..... PacifiCorp  
Chifong Thomas ..... Thomas Grid Advisor  
Yi Zhang.....California Independent System Operator

### Members not in Attendance

Jamie Austin ..... PacifiCorp  
Tyler Butikofer ..... Energy Strategies  
Renchang Dai ..... Puget Sound Energy, Inc.  
Jose Diaz..... Los Angeles Department of Water and Power  
Jennifer Galaway ..... Portland General Electric Company  
Sylvia Gard ..... Puget Sound Energy, Inc.  
Manuel Gomez..... El Paso Electric Company  
Michael Granados..... Los Angeles Department of Water and Power  
Chris Hagman ..... American Transmission Company  
Anders Johnson.....Bonneville Power Administration—Transmission  
Chelsea Loomis .....Western Power Pool  
Akhil Mandadi..... Arizona Public Service Company  
Effat Moussa..... San Diego Gas and Electric  
Nader Samaan..... Pacific Northwest National Laboratory  
Jonathan Stahlhut ..... TransCo Energy, LLC  
Emily Tozier .....Salt River Project  
Bharat Vyakaranam..... Pacific Northwest National Laboratory



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Stan Williams .....Bonneville Power Administration—Transmission

Di Xiao..... Southern California Edison Company

### Others in Attendance [Only for technical committees]

Jose Castaneda .....Imperial Irrigation District

Ashton Davis.....WECC

Miguel Garcia.....LADWP

Joshua Hurst.....LADWP

Colby Johnson .....Energy Strategies

Joey Jones.....WECC

Kellen Romero.....WECC

Greg Strang.....Idaho Power

Nguyen Tuan .....LADWP

Melissa Villa .....Imperial Irrigation District

Nathalie Voisin .....U.S. DOE

