

1. Welcome, Call to Order

Kevin Harris, Production Cost Data Subcommittee, (PCDS) Chair, called the meeting to order at 10:05 a.m. MT on January 31, 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 January 3, 2024.

On a motion by Chifong Thomas, the PCDS approved the minutes from January 3, 2024.

5. Review Previous Action Items

Nicole Lee, Senior Administrative Coordinator, reviewed action items carried over from the PCDS meeting on January 17, 2024. Action items that are not closed and will be carried forward can be found [here](#).

6. Announcements

Mr. Jensen led the discussion on ownership, 2034 Anchor Data Set (ADS) build, and behind-the-meter (BTM) photovoltaic (PV) weightings. Pacific Northwest National Laboratory (PNNL) is going to see whether it can assist.

7. Inflator and Deflator Discussion

Mr. Jensen led the inflator and deflator discussion using the California Department of Finance's inflator and deflator.

On a motion by Chifong Thomas, the PCDS approved using the California Department of Finance’s inflator and deflator.

8. Fuel Prices and Cost

Mr. Jensen led the presentation on the inflator and deflator, natural gas prices, coal prices, uranium prices, and other fuels’ prices. Mr. Jensen will post natural gas 2023 Integrated Energy Policy Report (IEPR) mapping to the Production Cost Model (PCM).

On a motion by Chifong Thomas, the PCDS approved the coal using five years five-year (2018–2022) average based on U.S. Energy Information Administration (EIA) 923 assumed dispatch share of 75%. Natural gas based on the 2023 IEPR (make mapping available). Other fuels use values from 2032 case, inflate to 2024. The information will be updated later if more information is available.

The presentation is posted on the [WECC website](#).

9. BTM Energy Storage—Hourly Shape or Resources

Mr. Jensen led the BTM energy storage discussion. The PCDS discussed using California Energy Commission (CEC) BTM. Mr. Jensen and Mr. Harris will review BTM energy storage shapes and capacity factors. Running two versions was discussed and motioned for approval. Richard Jensen, CEC, will obtain information on BTM battery assumptions, ex. technology, and whether there are four-hour batteries.

On a motion by Chifong Thomas, the PCDS approved two versions:

Version 1—Using pumped storage hydro (PSH) option four for BTM energy storage, model as a resource. Find/use capacity from the CEC hourly shapes. Example: 10MW capacity, four-hour battery = 40MWh.

Version 2—Look at capacity factor and hourly shape from CEC, compare CEC capacity factors to output from PCM, reassess decision for Version 2 (battery technology and four-hour battery).

10. CO₂ Prices

Mr. Jensen led the discussion for the CO₂ prices for California, Alberta, British Columbia, Washington, Oregon, and the applied CO₂ resource in Alberta. Alberta has two cogens that need to be fixed.

On a motion by Yi Zhang, the PCDS approved the CO₂ prices using California values with two versions:



Version 1—Use California value (converted for Canada) for California, Washington, Oregon, Alberta, and British Columbia, and make all CO2 prices independent, so they can be adjusted independently if needed.

Version 2—Check CO2 target for Washington on the output to make sure they are close to the target and evaluate Washington's and Oregon's performances and re-evaluate (look at California-Oregon Intertie (COI) and PCDS flows, also).

11. VOM and Dispatch Price

Mr. Jensen led the Variable Operations and Maintenance (VOM) costs and dispatch price wind and solar discussion. Intertek has new data that will be available this week.

12. BC Hydro Data

Mr. Jensen emailed BC Hydro asking for an update. Mr. Jensen will provide an update during the next PCDS meeting.

13. Inflator and Deflator Discussion

Mr. Jensen will provide an update on BC Hydro data after he receives a response from BC Hydro.

The presentation is posted on the [WECC website](#).

14. PAC Loads

Jamie Austin, PacifiCorp (PAC), presented the PAC hourly loads. Mr. Jensen will review increasing the PAC West loads.

15. Public Comment

No comments were made.

16. Review New Action Items

- Post natural gas 2023 IEPR mapping to the PCM.
 - Assigned To: Jon Jensen
 - Due Date: February 14, 2024
- Obtain information on BTM battery assumptions, ex. technology, and whether there are four-hour batteries.
 - Assigned To: Richard Jensen
 - Due Date: February 14, 2024
- Review BTM energy storage shapes and capacity factors.



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- Assigned To: Jon Jensen and Kevin Harris
 - Due Date: March 27, 2024
- Review PAC West loads.
 - Assigned To: Jon Jensen
 - Due Date: February 14, 2024

17. Upcoming Meetings

February 14, 2024..... Virtual

February 28, 2024..... Virtual

March 13, 2024..... Virtual

18. Adjourn

Mr. Harris adjourned the meeting without objection at 11:38 a.m.



Exhibit A: Attendance List

Members in Attendance

Jamie Austin PacifiCorp
Tyler Butikofer Energy Strategies
Kevin Harris Pacific Northwest National Laboratory
Eliana Ibarra Imperial Irrigation District
Jon Jensen WECC
Richard Jensen California Energy Commission
Anders Johnson Bonneville Power Administration—Transmission
Kimberly McClafferty NorthWestern Energy
Effat Moussa San Diego Gas and Electric
Chifong Thomas Thomas Grid Advisor
Stan Williams Bonneville Power Administration—Transmission
Yi Zhang California Independent System Operator

Members not in Attendance

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
Chris Hagman American Transmission Company
Chelsea Loomis Western Power Pool
Akhil Mandadi Arizona Public Service Company
Nader Samaan Pacific Northwest National Laboratory
Jonathan Stahlhut TransCo Energy, LLC
Emily Tozier Salt River Project
Bharat Vyakaranam Pacific Northwest National Laboratory
Di Xiao Southern California Edison Company



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Others in Attendance

Keith Ban..... San Diego Gas and Electric
Jose Casteneda California Energy Commission
Arkadeep Das.....WECC
Ashton Davis.....WECC
Josh Hurst Los Angeles Department of Water and Power
Joey Jones.....WECC
Nicole LeeWECC
Angela Tanghetti California Energy Commission
Miguel Perez.....New Mexico Public Regulation Commission
Trevor Rombough Blackhills Corporation

