1. Welcome, Call to Order

Jamie Austin, Production Cost Data Subcommittee (PCDS) Chair, called the meeting to order at 10:35 a.m. on April 5, 2022. A quorum was present to conduct business. A list of attendees is attached as Exhibit A.

2. Review WECC Antitrust Policy

Tyler Butikofer, System Adequacy Planning Engineer, read aloud the WECC Antitrust Policy statement. The meeting agenda included a link to the posted policy.

3. Approve Agenda

Ms. Austin introduced the proposed meeting agenda.

On a motion by Nader Samaan, the PCDS approved the agenda.

4. Review and Approve Previous Meeting Minutes

Ms. Austin introduced the minutes from the meeting on March 22, 2022, and March 29, 2022.

On a motion by Steven Wallace, the PCDS approved the minutes from March 22, 2022, and March 29, 2022.

5. Hydro Data Development—Final Package

Natalie Voisin, Pacific Northwest National Laboratory (PNNL), presented on hydro data development. The hydropower dataset is representative of normal operations (non-extreme events) and overall hydropower contribution amidst an evolving generation portfolio by the year 2032. The objective is to be flexible on the water operations associated with hydropower within the existing or near-term multi-objective water management that cannot be changed without an act of congress. It includes water availability, water management, and power plant operations. The project overview includes a selection of a median year, weekly targets, daily fluctuations, and an evaluation.

A hydropower dataset:

- Coincident in space and time with wind, solar, and temperature-driven load variations;
- With a finer temporal resolution to represent water management driven operations; and

- Represent normal operations and near-term environmental regulation.

The framework to develop the dataset is consistent with:

- Ongoing efforts on water availability scenarios under climate change conditions that support the Reliability Study Committee scenarios; and
- Potential future efforts to evaluate ensembles of hydro, wind, solar and load conditions.

The presentation is posted to the WECC website.

6. Validating Weekly Hydro—automated P&K Calculation

Kostos Oikonomou PNNL, presented on validating weekly hydro using the automated P&K calculation. The presentation included the hydro power weekly logic model, and GV software bugs and errors to avoid. There was an evaluation done to verify the weekly model is working properly, and a comparison of the 2030, and 2032 hydro datasets.

The conclusion is:

- Software update evaluated (weekly constraints are conserved)
- Impact on the GridView simulations:
  - 16 TWh of additional hydro associated with changes in water conditions;
  - ~16 TWh less of natural gas in the generation portfolio;
  - LMPs prices are slightly lower;
  - CO_2 emissions are 3.2% lower;
  - Operating cost is 4.6% lower;
  - Curtailment of wind and solar slightly increases. The increase is largely contained by the weekly logic;
  - The increase in hydro generation mainly occurs in the Bonneville Power Administration (BPA) and the Northwest regions, reducing natural gas reliance in the Northwest and California regions; and
  - LMP prices reduction are mostly located in the Northwest.
- PNNL has formatted the 2032 weekly hydro datasets and it is compatible with the GridView import format.

On a motion by Kevin Harris, the PCDS approved using the weekly hydro methodology and data created by PNNL based off actual 2018 data for the 2032 ADS PCM.

The presentation is posted to the WECC website.

7.   Status of Model Validation

Nader Samaan, PNNL, gave an update on the status of model validation. The testing shows that the new version will work. There will be a combined version of the hydro data and the Gridview that will be ran next week. He will present the results during the next PCDS meeting.

8.   Review of New and Previous Action Items

Nicole Lee, Administrative Assistant, reviewed action items carried over from the PCDS meeting on March 29, 2022. Action items that are not closed and will be carried forward can be found here.

9.   Review of New Action Items

- Present data from hydro presentation and the GridView validation.
  - Assigned To: Kostas Oikonomou
  - Due Date: April 12, 2022

10.   Upcoming Meetings

April 12, 2022,...Virtual

April 19, 2022,...Virtual

April 26, 2022..Virtual

11.   Adjourn

Ms. Austin adjourned the meeting without objection at 12:00 p.m.

Exhibit A: Attendance List

Members in Attendance

Jamie Austin ....PacifiCorp

Jose Diaz.. Los Angeles Department of Water and Power

Kevin Harris .... Harris PCM

Chifong Thomas ....Thomas Grid Advisor

Steven Wallace .... Comprehensive Power Solutions, LLC

Stan Williams ....Bonneville Power Administration—Transmission

Yi Zhang...California Independent System Operator

Lee Alter... Tucson Electric Power

Hazel Aragon ....California Energy Commission

Ben Brownlee ....Energy Strategies

Christopher Fecke-Stoudt.. Arizona Public Service Company

Monica Garcia .... El Paso Electric Company

Manuel Gomez... El Paso Electric Company

Michael Granados... Los Angeles Department of Water and Power

Chris Hagman .... American Transmission Company

Bill Hosie.. PSI Power System Innovation Corp.

Tito Inga-Rojas .... British Columbia Hydro and Power Authority

Anders Johnson..Bonneville Power Administration—Transmission

Harris Lee ....Salt River Project

Amy Li..Southern California Edison Company

John Liang...Public Utility District No. 1 of Snohomish County

Peter Mackin..GridBright, Inc.

Akhil Mandadi.. Arizona Public Service Company

John D. Martinsen...Public Utility District No. 1 of Snohomish County

Hank McIntosh .... San Diego Gas and Electric

Effat Moussa... San Diego Gas and Electric

Ahlmahz Negash .... Tacoma Power

Daniel Ramirez..Energy Strategies

Sirisha Tanneeru ....Public Service Company of Colorado (Xcel Energy)

Xiaobo Wang ....California Independent System Operator

Di Xiao.. Southern California Edison Company

Dave Angell .... Northwest Power Pool

Tyler Butikofer ....WECC

Jon Jensen..WECC

Richard Jensen...California Energy Commission

Bhavana Katyal ....WECC

Nicole Lee ....WECC

Kostas Oikonomou .... Pacific Northwest National Laboratory

Abe Rais ....WECC

Nader Samaan.. Pacific Northwest National Laboratory

Alyssa Tavares ....California Energy Commission

Nathalie Voisen... Pacific Northwest National Laboratory

Byron Woertz ....WECC

Members not in Attendance

First Last.. Organization

Others in Attendance

First Last.. Organization