



Comments of the NW Energy Coalition

Western Power Pool 20 Year Low Carbon Study

November 1, 2022

The NW Energy Coalition (NWECC) is very pleased to submit these comments on the proposed Western Power Pool 20 year Low Carbon Study.

While a 20-year study cannot anticipate all potential developments, it is very important to consider changes and opportunities across the WPP grid study area, including generation, transmission, storage, and customer-side resources (energy efficiency, demand response, distributed generation, microgrids, etc.).

We are strongly supportive of this project as presented in the October 7 draft study scope, and the elements noted in the Study Horizon section:

The Study will encompass a twenty-year horizon to include expected clean energy public policy requirements and expected public policy driven electrification of carbon emitting sectors such as, water and space heating along with transportation. Load forecasting assumptions will include any known or expected customer preference assumptions (e.g. electric ferries, buses, aviation). The Study will also incorporate best estimates of demand side management, time of use pricing and smart charging that are anticipated to be implemented.

Below we provide specific input on key topics.

Relevant reports. In addition to the study sources mention in Existing Data Analysis, we encourage review and inclusion of the US DOE National Transmission Study (which will have draft results available during the study period), and a variety of available reports on Oregon offshore wind, including those prepared by Pacific Northwest National Lab and the Oregon Department of Energy. Further analyses may well become available during the study period.

New resources. A key challenge for 20-year studies is extending the data readily available from 10-year transmission planning studies, including loads, resources and system topology. We encourage taking an open-ended approach that recognizes:

- New resources under construction or with active development programs (for customer side resources).
- Likely-to-acquire resources that have commitments in RFPs (for near term acquisition).
- Resource opportunities identified in Integrated Resource Plans and other studies.

It is particularly important in this study not to fall back on weak planning concepts like “fictitious resources.” Because this project is explicitly identified as being informational only, there should be opportunity for sponsors and participants to propose resource buildouts that can optimize the grid value of new resources in conjunction with both existing and new transmission, and also provide the necessary locational and performance data needed for the study’s model stack.

Methods for co-optimizing grid development are still emerging, and this study has the potential to advance that perspective by identifying economic, environmental and reliability grid value metrics that support joint resource and transmission development, rather than treating them separately.

We encourage going beyond examination of resources currently entered in transmission provider interconnection queues. The study should, within reasonable bounds, be open to new solutions that access a broad range of development opportunities.

Emerging resources. A number of new emerging generation and storage resources are now considered possible for development in the study footprint, including offshore wind, hydrogen, advanced nuclear reactors, and others. The study should provide a clearly defined approach to technology assessment including resource maturity level, projected cost, performance validation and other factors.

New loads. In draft scope addresses new transportation and building electrification loads. We recommend incorporating study cases or sensitivities where these new loads are either managed or unmanaged to ascertain the importance of load management as a central precept of new load sources.

In addition, we recommend close review of new large loads (commercial and industrial), including data centers and manufacturing, which are already driving load forecasts above recent estimates.

New transmission. As with new resources, we recommend a clear method to identify:

- Projects under construction.
- Projects that are likely to be built, including those recognized in Integrated Resource Plans and other transmission planning studies.
- Conceptual projects that could be considered, especially for the second half of the study period.

We strongly encourage the study treat incumbent and independent transmission projects on a comparable basis. It is important not to layer incumbent projects into the study ahead of similarly situated independent projects. The aim should be to identify transmission solutions that achieve the greatest grid value for customers.

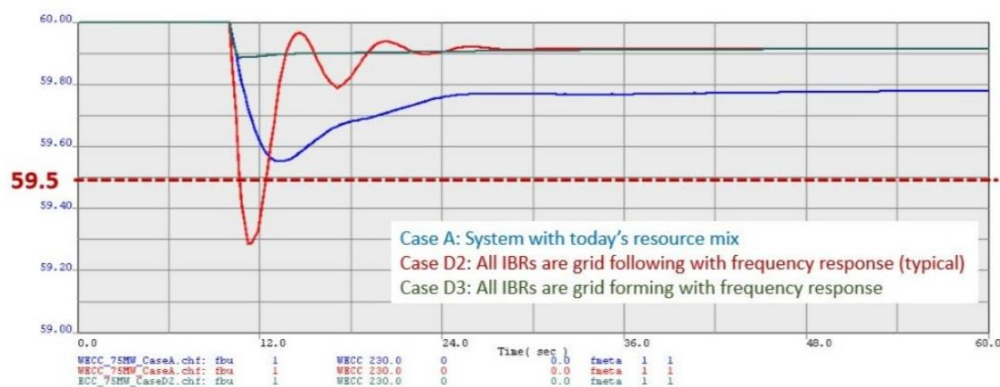
We recommend the project consider existing transmission corridor upgrades, including potential HVAC to HVDC conversions. This will reflect recent advances in HVDC technology and the great difficulty of developing new “greenfield” transmission corridors to provide a wider range of feasible alternatives.

Non-wires solutions. In addition to transmission expansion, the study should give attention to both traditional non-wires elements (for example, phase shifters, static Var compensators, etc.) and emerging measures including the broad field of grid-enhancing technologies (GETs) and storage as a transmission asset (SATA).

A recent BPA study summarized In a presentation at WECC addressed the potential benefits of “grid forming” power electronics (inverter-based resources) in managing system conditions. While there are many complexities and a prolonged transitional period is anticipated, active grid management by grid-forming IBRs has the potential to significantly expand the carrying capacity of the grid through the 20-year study period.

Grid-Forming Inverter Modeling

- IBR grid-forming vs grid following frequency response (BPA)



Source: MVS Update to RAC, October 18, 2022

https://www.wecc.org/_layouts/15/WopiFrame.aspx?sourcedoc=/Administrative/OCT%2018%202022_RAC.pdf&action=default&DefaultItemOpen=1

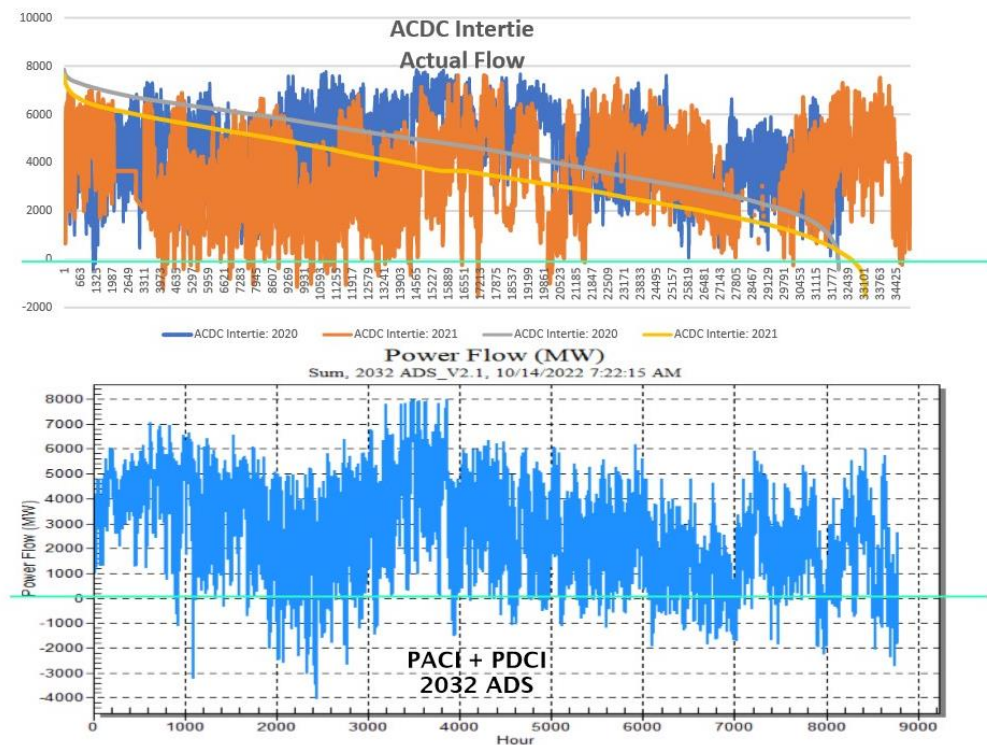
Interchange. The draft study scope states:

The Study will also consider appropriate interchanges with California and British Columbia based on long-term historic data and entitlement requirements. This may include reduced exports in line with historic peak conditions and any expected changes due to continued energy policy needs.

A serious deficiency in other regional studies has been the artificial limitation of flows across balancing area authorities or zones to their historical limits. This study should not impose any such limitations.

As an example, a recent study by WECC shows how rapidly new flows are emerging, in this case on the Pacific AC and DC Interties. As the chart below shows, very little south-to-north flows occurred in the past, as recently as 2020. Yet in 2021, various factors including fuel costs, weather conditions and resource retirements resulted in significant shoulder season flow changes. And by 2032, the study shows substantial south-to-north flows in all months.

These considerations apply not only to California and British Columbia but other areas connecting to the study footprint. Indeed, the study should consider whether upgrades on key paths, for example the long-envisioned upgrade of the PDCI from 3220 to 3820 MW, could be part of the study solutions.



Source: PCDS Update--2032 Anchor Data Set (ADS), October 18, 2022

https://www.wecc.org/_layouts/15/WopiFrame.aspx?sourcedoc=/Administrative/2022-10-18_RAC%20-%20PCDS%20Update%20_%202032%20ADS%20Development_JA.pdf&action=default&DefaultItemOpen=1

Process and outputs. We recommend additional detail about the study process, particularly whether all stakeholders will be able to fully participate in all technical aspects of study development, and whether comment and review will be included at key points throughout the process.

Thank you for your consideration of NW Energy Coalition’s comments. We look forward to participation in this innovative study

Dated: November 1, 2022

/s/

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