2018 – 2019 Transmission Planning Process
Informational Study: Increased Capabilities for Transfers of Low Carbon Electricity between the Pacific Northwest and California

Public Generating Pool Comments
December 12, 2018

The Public Generating Pool (PGP) appreciates the opportunity to comment on the California ISO's Informational Study: Increased Capabilities for Transfers of Low Carbon Electricity between the Pacific Northwest and California discussed on November 26, 2018.

PGP represents ten consumer-owned utilities in Oregon and Washington that own almost 6,000 MW of generation, 4,500 MW of which is hydro and 95% of which is carbon-free. Three of the PGP members operate their own Balancing Authority Area (BAA), while the remaining members have service territories within the Bonneville Power Administration's (BPA) BAA. Nine PGP members purchase 37 percent of the preference power sold by BPA.

The California Energy Commission (CEC) and California Public Utility Commission (CPUC)'s letter of February 15, 2018[1] requested support from the CAISO to study key opportunities for expanding transmission capabilities between the Pacific Northwest and California. The primary elements of the requested analysis included:

1. Increasing the current dynamic transfer capability limits from 600 MW to a higher credible limit supported by engineering analyses;
2. Automating manual controls for essential Bonneville Power Administration (BPA) facilities, in support of sub-hourly scheduling of the Pacific DC Intertie (PDCI);
3. Evaluating the potential increase to the transfer capability rating of the Pacific AC and DC Interties, including intra-California paths that could be limiting;
4. Assigning some resource adequacy (RA) value to Northwest hydro generation imported into California that could be shaped through unused storage capacity, potentially available in the Northwest.

PGP understood that the basis for the request was to explore making the best use of existing transmission infrastructure, and to highlight the potential benefits and costs associated with the long history of seasonal exchanges between the Pacific Northwest and California entities. Regional coordination will be key to California achieving its renewable energy and GHG reduction goals of 100% by 2045[2].

[1] http://www.caiso.com/Documents/CPUCandCECLettertoISO-Feb152018.pdf

[2] 2017 Integrated Energy Policy Report. California Energy Commission. Publication Number: CEC-100-2017-001-CMF, Chapter 3, *"California has targeted increased regional coordination as one of its strategies for achieving the state's renewable energy and GHG reduction goals. The benefits of increased regional coordination, to both California's utility customers and those of the entire Western Interconnection, include more efficient use and integration of renewable energy (including hydro in the Pacific Northwest), reduced carbon emissions, more efficient use of the transmission grid, reduced costs, and enhanced reliability."*

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I. GENERAL COMMENTS

PGP and its members acknowledge the significant efforts made to date by CAISO staff in exploring the viability of increasing or better optimizing the transfer capabilities for both the Pacific AC and DC interties, increasing the dynamic transfer capability on the California-Oregon Intertie (COI), and implementing sub-hourly scheduling on the PDCI. The study findings appear reasonable and reflect the shared interests of both California and the Northwest to make the most and best use of existing transmission infrastructure and corridors.

With regards to the 4th element of the request, assigning an RA value to firm zero-carbon imports or transfers into California, PGP has from the beginning struggled with the purpose and intent of this portion of the study within the context of transmission planning. PGP understands that this element of the study was requested in the CEC/CPUC Letter. However, given that Resource Adequacy covers such a broad spectrum of reliability and commercial issues, PGP believes a more appropriate forum to study this issue is within the CAISO's and CPUC's RA program.

PGP believes evaluation and incentives for avoided GHG emissions from transfers of Northwest hydro to and from California is rightly placed within the context of Resource Adequacy rules and CAISO Market Design. As PGP notes later in this document, there are many changes happening in the resource mix and energy policy in the Northwest and California that will impact how resources are transacted and dispatched today. As such, historical flows on the COI and PDCI are not a good indicator of future flows and the benefits of avoided GHG reductions from Northwest hydro imports cannot be guaranteed without forward commitment through RA contracts.

Currently, the majority of California's system and flexible RA needs are met with fossil-fueled thermal generation inside California. Northwest carbon-free hydro resources *can* play a larger role in maintaining RA within California by meeting a higher portion of the system and flexible capacity needs of the system than today. PGP believes a pathway to achieving this is to fully identify barriers of increased RA showings and find solutions that can expand participation of Northwest hydro imports in California's RA program.

II. CARBON FREE ENERGY FROM NORTHWEST HYDRO CANNOT BE ASSURED WITHOUT LONG-TERM COMMITMENTS

The study concluded that from a carbon/GHG perspective, there is little to no impact if hydro imports from the Pacific Northwest have RA assigned to it or not. The conclusions appear to be based on hour-ahead scheduling data that assumes low-carbon energy is already being imported into California and will continue to do so. Yet, the landscape continues to change towards a future of greater competition for the flexible and GHG-free attributes of the Northwest's hydro resources. The traditional flows of low-carbon hydro energy on the Pacific

AC and DC Interties is not necessarily a valid predictor of future energy transfers between the two regions.

Carbon and energy policies in the West are evolving. California is currently the only state with specific carbon policy that puts a premium on all zero- and low-carbon energy. However, the high likelihood of carbon reduction policy changes being contemplated in Washington and Oregon may not necessarily result in the same level of zero- and low-carbon hydro energy flowing into California going forward. How California's renewables and decarbonization goals of 60% by 2030 and 100% by 2045 will be achieved and how they interact with Northwest carbon and energy policies is not fully understood. Such policy intersections could impact transfers to and from the Northwest.

Furthermore, the Northwest is seeing significant planned retirements of gas- and coal-fired resources in the near to mid-term, which will increase the demand for Northwest hydro capacity and energy. Continued avoided GHG emissions from transfers of low-carbon energy to and from the Pacific Northwest cannot be assumed without forward procurement of Northwest hydro resources on a long-term basis.

III. THE CHARACTERISTICS OF ALL NORTHWEST HYDRO RESOURCES SHOULD BE CONSIDERED IN THE ANALYSIS

There is approximately 46,000 MW of existing carbon-free hydroelectric generating capability in the Pacific Northwest and Canada.

Utility	Hydro Capacity (MW)
Bonneville Power Administration	~22,450
BC Hydro	~11,850
Consumer-Owned Utilities	~6,200
Investor-Owned Utilities	~5,500
TOTAL	46,000

Source: PNUCC Northwest Regional Load Forecast and BC Hydro Fact Sheet[3]

[3] PNUCC 2017 Loads and Resource Study, Table 10 Northwest Utility Generating Resources and BC Hydro Quick Facts

The Northwest region is surplus even in low water years with Northwest utilities applying conservative planning rules. The Northwest region has between 4,000 – 11,000 aMW of surplus depending on the water year[4].

CAISO lists the potential priority of Pacific Northwest entities to serve local loads as a potential barrier for higher RA contributions from Northwest hydro. Certainly, there are federal statutes, such as the Northwest Power Act, that obligate BPA to use its federal hydropower to serve Northwest entities prior to BPA selling power out of the region. However, given that BPA only accounts for about half of the hydro in the Northwest, PGP believes it is important that the characteristics of all Northwest hydro resources be considered for RA when evaluating the range of potential transfers of energy from Northwest hydro resources to and from California. PGP requests CAISO provide more information regarding the planning assumptions used to model hydro resources when scoping the potential priority of Pacific Northwest entities to serve local loads as a barrier to higher RA contributions, specifically from Northwest hydro.

IV. BARRIERS TO HIGHER RA SHOWINGS FROM NW HYDRO SHOULD BE FULLY EXAMINED

PGP also believes it is important for purposes of this analysis to examine the full range of barriers to higher RA showings of Northwest hydro resources and also to identify potential solutions that reduce or eliminate those barriers. Listed below as reference are three barriers that could be considered in CAISO's and/or the CPUC's RA program:

- **Maximum Import Capability (MIC) allocation process leaves import capability unusable:** CAISO concluded that RA showings are less than available MIC for most of the year. However, the current MIC allocation leaves import capability stranded and unusable by California load-serving entities that may intend to procure RA capacity from Northwest hydro resources. Changes could be made to the MIC allocation process to minimize and prevent stranded import capability. CAISO has already identified this as a potential issue to be included within the scope of its RA Enhancements initiative.
- **RA import allocation is one year at a time:** CAISO stated that the current FERC-approved RA import allocation process is one year at a time and that some LSEs prefer to sign multi-year contracts. It is conceivable that the RA import allocation could become multi-year.
- **Northwest hydro is precluded from participating in flexible RA:** Northwest hydro resources, along with all out-of-state resources, are largely precluded from participating in CAISO's flexible RA program at this time. CAISO has run a multi-year stakeholder

[4] See page 33, 69, and 85 in BPA's White Book that shows regional surplus/deficit by water year. This analysis is based on existing resources and does not include new resources not yet permitted to be added in the 2020-30 time period.

(Flexible Resource Adequacy Criteria and Must Offer Obligation) initiative on this issue. The CAISO identified resolutions to allowing expanded participation of out-of-state resources in its flexible RA program, along with solutions that allow hydro imports to be shaped through unused storage capacity. Northwest hydro resources can participate more broadly in California's flexible RA program if the changes proposed in the FRACMOO2 initiative - potentially being contemplated as part of CAISO's new RA Enhancements initiative - were to move forward.

V. NW HYDRO CAN BE FORECASTED MONTHS AND EVEN YEARS IN ADVANCE

Northwest hydro resources can be forecasted far in advance of actual operations. The level of certainty and confidence that can be had in a hydro forecast will be greater the closer in to actual operations, as more of the uncertainties become known. Northwest hydro operators take these elements into account when defining their firm surplus capacity on a forward basis. And while Northwest hydro resources may have less firm surplus available the further out into the future, they can have high confidence of specific amounts of capacity 45 days out and 14 months out, the timelines necessary for California load-serving entities to procure their allocated share of the RA obligation. In fact, Northwest hydro resources regularly sell firm monthly, yearly and even multi-year firm capacity contracts on a forward basis.

VI. NW HYDRO RA CAPACITY HAS NOT BEEN SHOWN TO BE MORE COSTLY

The study concluded that firming up capacity and energy going through a number of balancing authority areas may result in additional cost compared to internal California resources. PGP requests the assumptions or basis for this conclusion, or any analysis that substantiates that the cost of NW hydro capacity is expected to be a barrier to higher RA contributions from Northwest hydro.

VII. CONCLUSION

PGP believes this analysis is just the beginning of a broader conversation of how participation of Northwest hydro resources in California's RA program can be expanded. While the two regions have benefitted from past cooperation and collaboration through seasonal exchanges and swaps, the inability to secure forward commitments and appropriate compensation through long-term RA contracts may alter the conclusion that California would continue to avoid GHG emissions from the transfer of low-carbon energy to and from the Pacific Northwest.

There are opportunities to increase RA showings of Northwest hydro resources. As the CEC and CPUC develop a strategy that would allow for the shut down of the Aliso Canyon Natural Gas Storage facility, it is important that forward procurement of long-term Northwest hydro

resources remain part of the solution and that attention be devoted to identifying and removing barriers to participation in California's RA program.

PGP urges that collaboration and dialogue be continued with a renewed awareness of the importance and inherent flexibility the Northwest hydro's resources can offer to the CAISO grid. PGP advocates for the CAISO to continue exploring the RA value Northwest hydro can offer in support of California's overarching policy objectives in the RA Enhancements initiative.