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Update on Informational Study of Increased Capabilities for Transfers of Low Carbon Electricity between the Pacific Northwest and California

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2018 IEPR Commissioner Workshop on Renewable Integration and Electric System Flexibility, California Energy Commission

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Background and Objective:

- CEC and CPUC requested the study through a letter to ISO on February 15, 2018*
- A informational special study has been included in the 2018-2019 transmission planning process, to:
 - Evaluate options to increase transfer of low carbon electricity between the Pacific Northwest and California
 - Assess what role AC and DC interties can play in displacing generation whose reliability is tied to Aliso Canyon.

* <http://www.caiso.com/Documents/CPUCandCECLettertoISO-Feb152018.pdf>

Study Scope:

- The impact of the following on Increased Capabilities for Transfers of Low Carbon Electricity between the Pacific Northwest and California, will be evaluated:
 - Increase transfer capacity of AC and DC interties
 - Increase dynamic transfer limit on AC interties
 - Automating manual controls on key BPA infrastructure
 - Assigning Resource Adequacy value to firm zero-carbon imports or transfers

The study plan has been finalized:

- The ISO has been coordinating with the facility owners inside and outside of the ISO footprint
- A public stakeholder call reviewing the draft scope has been held, and comments received on April 26.
- The ISO posted the final study plan on May 23, 2018.
- The study plan addresses:
 - Study horizon
 - Assumptions
 - Study methodologies
 - Scenarios (both north-to-south and south-to north-considerations)

Increase the Capacity of AC and DC Interties

- In the short term
 - Assess potential to maximize existing system to increase COI limit to around 5100 MW in the N-S direction
 - Addressing PDCI operational limits in the S-N direction
- In the long term (If production simulation indicated increased intertie capacity was required)
 - Increase PDCI rating
 - Increasing AC intertie capability, such as greenfield projects
- Review existing congestion due to physical or market limitation (Day Ahead vs. Real Time)

Increase Dynamic Transfer Capability (DTC)

- DTC is the amount of within-hour change in power flows a system can tolerate over short periods of time (i.e. five minute) without causing an unacceptable voltage excursion or some other adverse system condition.*
- BPA currently limits the DTC on COI to 400 MW.
- BPA has studied its capabilities of increasing DTC to 600 MW and are moving forward with implementing this change.
 - BPA will distribute these study results to inform the CAISO TPP evaluation this year. Identify market needs for increased DTC
- The CAISO will assess the benefits to California system of going beyond 600 MW and any potential requirements on the ISO controlled grid.

* https://www.bpa.gov/Finance/RateCases/BP-18/Meetings/BP-18_TxRateCaseWorkshop_20160713.pdf

Control Automation on PDCI

- The ISO will study whether or not sub-hourly scheduling capability on the PDCI might help to mitigate Aliso Canyon retirement and other RA requirements.
 - BPA has indicated that they will contribute their own initial scoping document to inform the TPP study.
 - BPA also indicated that they will need to coordinate with the other co-owners and the joint operators to inform any additional technical analyses and conclusions, which will be done according to BPA's internal work prioritization and timelines, which may or may not align with CAISO's TPP timelines.
- The ISO's study can identify potential system enhancements on the PDCI south of Nevada-Oregon Border that may be required in order to achieve the sub-hourly scheduling capability.

Assigning Resource Adequacy Value to Import

- Review historical availability of RA import capacity and associated constraints on hydro generation imports that could be shaped through unused storage capacity potential available in the Northwest
- Assess potential for planned increases in transfer capability to increase the available import capacity

Schedule

- Preliminary results presentation: November 16, 2018.
- Final results in Draft 2018-2019 Transmission Plan: January 31, 2019
- Final results presentation: February 2019 stakeholder meeting
- Final report: March 2019 final approved 2018-2019 Transmission Plan