

CAISO 2018/19 Draft Transmission Plan: Stakeholder Comments

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LS Power appreciates the opportunity to submit comments on the 2018/19 Draft Transmission Plan “Draft Plan”. LS Power has comments for the following topics addressed in the Draft Plan.

Economic Studies:

PACI/NOB congestion:

CAISO has not demonstrated any progress on steps it intends to take to resolve this recurring issue that is costing ratepayers \$50mm to \$148mm annually. In previous stakeholder meetings CAISO indicated that it was going to investigate whether PACI/NOB Day Ahead congestion could be alleviated through market enhancements. If not, CAISO indicated that it would look to address this congestion through the Transmission Planning Process. Yet the Draft Plan does not directly address how it plans to alleviate this Day Ahead congestion, nor does it provide steps CAISO intends to take or the timeline for addressing this high cost problem. In the Draft Plan, CAISO concludes that *“the greatest opportunity is for the ISO market to gain access to the additional physical capacity that cannot currently be utilized in the ISO market. The ISO is accordingly investigating with its neighbors the possibility of accessing this capacity”*. LS Power first brought this issue to CAISO’s attention four years ago¹. It appears that another year has elapsed with no material progress on addressing the congestion. We recommend CAISO establish a deadline to conclude its investigation and create a timeline for resolving this issue and execute on it.

Consistent with our previous TPP comments, LS Power reiterates the importance of correctly modelling PACI/NOB congestion. The congestion on this path has been one of the top congestion issues in CAISO’s Day Ahead Markets for the last several years, resulting in CAISO ratepayers overpaying \$50 to \$100 million in each of the past 3 years². Similarly in 2011-2014 the congestion reported by DMM ranged

¹ Previous LS Power comments:

http://www.caiso.com/Documents/LSPowerComments2015-2016TransmissionPlanningProcessStakeholderMeetingNov16_2015.pdf

² As per 2017 CAISO DMM Annual Report on Market Issues & Performance, Section 8, Table 8.1, PACI & NOB congestion combined was approximately \$50mm in 2015, \$75 mm in 2016, \$100 mm in 2017. The report can be found at: <http://www.caiso.com/Documents/2017AnnualReportonMarketIssuesandPerformance.pdf>

from \$62mm to \$148mm³. This signals the need for additional transmission capacity that should pay for itself by allowing more economic transfers from the Pacific NW into California. Since this congestion doesn't get correctly quantified in the current planning models, CAISO's Transmission Planning Process does not properly identify the need for additional transmission capacity to relieve the reported congestion and reduce ratepayer costs. While CAISO should make efforts in correcting its economic study model, however, even if the model cannot fully replicate the historical congestion reported by CAISO's DMM, CAISO has enough consistent historical congestion data to support evaluation of transmission solutions in the TPP.

CAISO's Economic Study Model:

LS Power submitted modelling recommendations to CAISO to capture PACI/NOB congestion in the 2017/18 TPP through work that the Brattle Group conducted on behalf of LS Power⁴. CAISO must correct the Economic Study models to accurately capture the historical Day Ahead congestion on these paths. CAISO should investigate in particular whether the software it uses currently to perform production cost simulation work can be enhanced to capture transmission capacity rights and allow CAISO to alter wheeling rates to accurately represent transmission capacity arrangements. CAISO should look into using different software for performing this work if the software it currently uses cannot be used for this purpose. LS Power stands prepared to have detailed discussion with CAISO team on this, as needed.

SWIP North Economic Study:

CAISO staff conducted study to analyze economic benefits of the SWIP North project. The study compared WECC-wide production costs with and without SWIP North. LS Power has several comments on this study:

- 1) It is not clear whether CAISO was able to accurately model SWIP North as a 1000 MW wheel-free path from Midpoint (Idaho Power) to Eldorado (CAISO) as specified in LS Power's regional economic study request and interregional study request. If any hurdle rate was assumed in CAISO's production cost analysis for energy to wheel from Idaho Power to NV Energy to CAISO, this should be removed and study results revised. If the software CAISO uses cannot support this analysis accurately then CAISO should look into other tools that can do this.
- 2) It is not clear if CAISO's economic analysis accounted for several additional benefits that SWIP North, an out of state transmission project, can provide. Our understanding is that CAISO's TEAM methodology does not account for these benefits and these need to be accounted for to get a complete picture of overall benefits of a transmission project such as SWIP North.
 - (a) Green House Gas (GHG) reduction benefits:
SWIP North will enable an incremental 1000 MW of transmission capacity that can be used to import/export generation resources into/from CAISO. CAISO's analysis shows that "*SWIP - North may allow more exports from California to other regions when there are renewable*

³ See http://www.caiso.com/Documents/2014AnnualReport_MarketIssues_Performance.pdf

⁴ LS Power comments (including Brattle findings) filed under 2017/18 TPP can be found at: http://www.caiso.com/Documents/LSPComments_2017-2018PreliminaryReliabilityResults.pdf

energy surplus within California". This will certainly help reduce GHG emissions in California by allowing more renewable generators to remain online and displacing fossil fuel generation. CAISO should quantify GHG reductions and renewable curtailment reductions from SWIP North. An approach CAISO can take in quantifying these benefits would be similar to how CAISO calculates similar benefits for its Quarterly EIM benefits analysis. As per CAISO's Q4 2018 EIM report⁵ total avoided renewable curtailment volume in MWh for Q4 2018 was calculated to be 23,425 MWh. The environmental benefits of avoided renewable curtailment were noted to be significant and CAISO used an assumption that avoided renewable curtailments displace production from other resources at a default emission rate of 0.428 metric tons CO₂/MWh. We recommend similar approach be used in quantifying these benefits for projects like SWIP North. CPUC's study for 2017-18 IRP⁶ also noted significant benefits of out of state transmission in terms of GHG reduction, renewable curtailment reduction and lower renewable integration costs. CAISO should capture these benefits as it works on finalizing the Transmission Plan.

(b) Renewable capacity capital cost savings:

In CAISO's studies, SWIP North has shown to help reduce renewable curtailments in CAISO footprint by providing a conduit to export surplus renewable energy from California. As renewable curtailments are reduced, there will be capital cost savings as CAISO Load Serving Entities will not need to build incremental renewables to meet same RPS goals. These capital cost savings should be captured.

(c) Load Diversity/Reserve Capacity reduction benefits:

Enabling 1000 MW of transmission capacity from CAISO to neighboring Regions will allow the flexible ramping requirement for CAISO and the Regions to be reduced as they will be able to take advantage of the diversity of resources and shape of the load. These diversity saving benefits should be accounted for. CAISO's Quarterly EIM reports capture these benefits and this is an approach that CAISO Transmission Planning can use as well for this study.

- 3) CAISO's analysis concluded that *"The SWIP - North line may not provide incremental import from Northwest regions during some hours when there is no energy surplus in those regions depending on resource and transmission assumptions in Northwest regions in the model"*. The \$50mm to \$148mm of recorded historic congestion on the PACI/NOB paths that CAISO experiences every year demonstrates the contrary, i.e. there is enough economic energy

⁵ Western EIM Q4 report, page 14: <https://www.westerneim.com/Documents/ISO-EIMBenefitsReportQ4-2018.pdf>

⁶ Slide 12, CPUC's recommendation for CAISO TPP portfolios: http://www.cpuc.ca.gov/uploadedFiles/CPUCWebsite/Content/UtilitiesIndustries/Energy/EnergyPrograms/ElectPowerProcurementGeneration/irp/2018/Attachment%20B_%20IRP%20Proposed%20Portfolios%20for%20CAISO%202019%20TPP_final.pdf

available in PNW but there isn't sufficient transmission capacity for this economic energy to be scheduled into CAISO. In light of this, an incremental 1000 MW transmission capacity from SWIP North should allow CAISO to access this economic energy and lower the cost for its ratepayers.

- 4) CAISO's analysis concluded that *"lower priced imports can result in increased profits to out-of-state generation and reduced profits to ISO owned generation in the ISO footprint whose profits accrue to ISO ratepayers."* LS Power recommends that CAISO revisit this conclusion. If a project like SWIP North enables 1000 MW of new transmission capacity between the PNW and CAISO, will that enable some of the existing PNW resources that may be contracted to serve CAISO to schedule into California? If so, should the profits for those out-of-state generation resources be treated the same as profit for internal CAISO resources?
- 5) Based on CAISO's analysis of historical PACI/NOB congestion, it is quite evident that congestion is caused because not enough transmission capacity gets offered into the Day Ahead market for economic PNW resources to be able to schedule into CAISO. CAISO's economic analysis for SWIP North should quantify benefits of a new 1000 MW transmission capacity that can serve as a diverse transmission path and allow part or all of the economic PNW resources to schedule into CAISO through SWIP North. Further, this new transmission path would also reduce friction in scheduling, as is typically experienced in the West.

Reactive Support Projects at Round Mountain & Gates:

CAISO's reliability project proposals should be further refined as follows:

- 1) CAISO should test the effectiveness of looping the reactive support projects into two existing transmission lines between Round Mountain and Table Mountain substations, rather than limiting the proposals to connect to Round Mountain. Based on studies conducted by LS Power, looping into the two existing lines provides a more effective solution for addressing voltage issues at not just Round Mountain substation but also substations in the vicinity: Table Mountain and Maxwell. In addition, looping in provides the following incremental benefits as opposed to connecting directly into existing substation: a) Saves costs by avoiding expansion of existing Round Mountain substation and conversion of existing Ring bus to Breaker and a Half configuration as contemplated by PG&E b) Maximizes the scope of the project that will be subject to competitive solicitation, thereby allowing CAISO and its ratepayers an opportunity to select competitive proposals which will lead to potential cost savings c) Minimizes capital expenditures required from Pacific Gas & Electric Company (PG&E), which may be prudent for CAISO ratepayers and for ensuring that this reliability project gets completed in time, in light of recent financial events at PG&E.
- 2) In the Functional specifications released for Gates voltage support project, CAISO indicated that it will allow the use of SVC, STATCOM, Synchronous Condenser or Battery Storage as acceptable solutions. This somewhat contradicts with the discussion in Draft Plan where CAISO states that it prefers STATCOM as a solution at Gates. We recommend CAISO clarify in Final Transmission Plan

if it has a preference for a specific technology and/or whether one technology would be compared with another in its analysis. If so, CAISO should specify the parameters of how the technologies would be evaluated.

CAISO-PNW Increased Transfers Study

CAISO's conclusion on this study is that there is no capital upgrade required to increase COI N-S rating by 300 MW. While NERC TPL-001-04 standard treats the double line outage that drives COI Path Rating as Extreme Contingency (P7), but the WECC Path Rating Catalog still considers this as a NERC P6 contingency. Further, CAISO Operations is now treating this double line outage as conditionally credible and as referenced in the Market notice provided by CAISO Operations⁷ system conditions in Operations may trigger the need for CAISO to not treat these contingencies as credible events. Given this, relying on the less stringent criteria for planning purposes can pose reliability risk. We recommend CAISO reconsider its proposal to increase path rating of the existing COI path. Planning ratings should not be changed if these cannot be used at all time in Operations.

Bulk Storage Study

CAISO studied the economics of two large pump storage projects and concluded that the projects provided benefits; however a large portion of the benefits were from Net Market Revenues. We recommend that for any future similar analysis, CAISO should also consider long duration battery storage projects and OOS transmission projects. Both these alternatives can provide competing benefits with respect to GHG reduction, renewable curtailment reduction and production cost savings. This should allow CAISO to arrive at a more comprehensive and robust conclusion in this area.

LS Power thanks CAISO for the opportunity to provide these comments and stands committed to working with CAISO on any of the issues, as needed.

⁷ <http://www.caiso.com/Documents/Implementation-ConditionalCredibility-500kVCommonCorridorDoubleLineOutages-PGE.html>