

CAISO 2014/15 Transmission Plan: Stakeholder Comments

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LS Power appreciates the opportunity to submit comments on CAISO's Transmission Planning Process and in particular the information presented at the November 19-20 Transmission Planning Stakeholder Meeting. LS Power appreciates CAISO's efforts in taking on the daunting task of performing various studies required to develop the 2014/15 Transmission Plan. LS Power offers these comments for CAISO consideration.

Harry Allen Eldorado Project should be recommended for CAISO Board approval:

CAISO Management should recommend the Harry Allen to Eldorado 500 kV Transmission Project ("Harry Allen-Eldorado") for approval by the Board at its December meeting. As shown by the recent CAISO studies and the economic study work done including in the 2012-2013 Transmission Plan and 2013-2014 Transmission Plan, Harry Allen-Eldorado provides economic benefits for CAISO ratepayers. At the stakeholder meeting CAISO staff mentioned that certain additional economic benefits (related to EIM) were not yet captured in the latest study runs and once quantified, will lead to an increase in total benefits. While LS Power agrees with CAISO that these additional benefits should be quantified, the benefits calculated to date are strong enough for CAISO Management to recommend Harry Allen-Eldorado for approval at the December Board meeting. Besides economic benefits, additional policy & reliability benefits also exist from this Harry Allen-Eldorado, which, although not quantified, should be factored into the decision making.

Energy & Capacity Benefits

As shown in CAISO studies, significant energy savings are expected by Harry Allen-Eldorado for the basecase scenario and almost all sensitivity scenarios. In addition to energy benefits, significant capacity savings from Harry Allen-Eldorado exist. CAISO estimated the capacity benefits by using a methodology consistent with what was done for analyzing similar benefits from the recently approved Delany-Colorado River project. CAISO's calculation is based on system capacity shortfall projections in CAISO in future years, but only looks at the impact of the project on Path 46, while the project will provide access to additional capacity resources beyond just its impact to Path 46. LS Power supports CAISO's calculation of capacity benefits, and believes additional capacity benefits exist beyond those quantified by CAISO.

CAISO recently released its Stochastic Modelling testimony¹ for the CPUC Long Term Planning Procurement study work. This study further reinforces CAISO's findings that there is risk of capacity shortfall in California, specifically a potential capacity shortfall of 8292 MW in 2024 to meet the 1-in-10 planning standard and avoid Stage 1 & 3 emergencies. The maximum shortfall identified in the study was 16,745 MW. The CAISO study concluded that *"The most frequent capacity shortfalls occurred in July from hours 18 to 20, after the peak load hour when solar generation production drops prior to the evening reduction in load. Traditionally planning focused only on peak load hour. With the increase in renewable generation, the traditional planning reserve margin approach focusing on peak load hour has become insufficient and outdated. The results of the CAISO's study confirm that planning to meet peak load hour requirements is not necessarily sufficient to maintain reliability."*

Given this, LS Power believes that the 202 MW incremental capacity benefit is an "under-estimation", as this was calculated at the traditional peak hour, which is typically Hour 15, and only based on the impact of an increase to Path 46. If CAISO's studies are repeated for Hours 18-20, the largest hour of need, the incremental capacity benefit on Path 46 would be much greater than 202 MW, since the WOR path will not be as stressed during non-peak hours.

NPV Calculation

LS Power believes CAISO's calculation of the net present value of the benefits of Harry Allen-Eldorado underestimates the lifetime project benefits due to the discounting of values expressed in real dollars. Slide 85 of the Day 2 presentation (Slide 10 of the Harry Allen-Eldorado analysis) identifies an annual capacity savings of \$10.2 million. The next slide (Slide 86) describes the CAISO methodology of assuming constant real savings, and that the present value over 50 years of the capacity savings is \$141 million (at a 7% discount rate). However, if the \$10.2 million is extrapolated in constant real dollars, the net present value over 50 years should be \$10.2 million x 50 = \$510 million, at least at a discount rate equal to inflation. In order to perform the net present value calculation at a different discount rate, the values would first need to be escalated at inflation to year of occurrence values, then discounted back to present value at the desired discount rate. So the net present value of \$10.2 million in constant real dollars, over 50 years, assuming 2% inflation, and a 7% discount rate would be \$185 million, not \$141 million, and overall the net present value of benefits calculated by CAISO should be approximately 30% higher than shown.

Incremental reliability & policy benefits of Harry Allen-Eldorado

In addition to the quantified economic benefits, there are certain qualitative reliability and policy benefits of Harry Allen-Eldorado. This line helps, to a certain extent, improve the deliverability of renewables from the Imperial Valley renewable energy zone, as well as renewables in Southern Nevada. In addition the line provides improvement in reliability by reducing several post contingency line loadings as shown by studies conducted by LS Power and also documented in 2013/14 CAISO Transmission Plan.

¹ http://www.caiso.com/Documents/Nov20_2014_Liu_StochasticStudyTestimony_LTPP_R13-12-010.pdf

EIM Benefits

CAISO and NV Energy have announced the expansion of EIM markets to include NV Energy starting in 2015. Harry Allen-Eldorado will increase transmission capacity for EIM purposes and will thereby provide increased EIM benefits to CAISO and NV Energy. As CAISO stated at the November stakeholder meeting, these benefits are not yet fully quantified in the studies performed by CAISO to date and once EIM is fully modelled the Economic benefits from Harry Allen-Eldorado will increase. LS Power agrees that more fully modelling EIM would help account for additional benefits that the model is currently unable to capture due to nature of 1-hour used for the ABB Gridview study runs vs 5-min dispatch for the EIM. Further, looking at the previous EIM benefit study work done for CAISO, PacifiCorp and NV Energy by ABB and E3 new transmission capacity additions do create significant savings from dispatch efficiency improvements and reduced minimum reserve holdings, which translates to economic benefits.

Benefits of Earlier In Service Date

Finally, LS Power would like to ensure that CAISO recognizes the many benefits of an earlier in-service date for the project. In the solicitation for the Delaney – Colorado River 500 kV Transmission Line, CAISO stated there would not be any additional benefit for an in-service date for the project prior to 2020. For the Harry Allen-Eldorado 500 kV project there are many significant benefits that could be realized from an earlier in-service date:

1. CAISO's estimated benefits of the Harry Allen-Eldorado (slide 81 of the stakeholder presentation) show higher economic dispatch savings in 2019 than 2024. Therefore an earlier in-service date would help to achieve a higher total benefits.
2. CAISO uses a relatively high discount rate, 7%, to calculate the net present value of benefits. Therefore benefits in 2019, or even an earlier year, would have a higher value to ratepayers.
3. A project with a later in-service date would have a higher cost, due to the impact of inflation and overall escalation on the project costs. At 2% per year, the impact to ratepayers of a 2020 in-service date compared to 2018 is 4%, and the impact on the overall benefit: cost ratio would also be 4%.
4. Bringing this Harry Allen-Eldorado in service sooner than 2020 is prudent as it would also help address the risk of capacity retirements due to Once Through Cooling (OTC) policy compliance. Year 2017 is a major year for OTC compliance. Over 5000 MW of existing OTC units have to either demonstrate OTC compliance by Dec 31, 2017 or else they could become inoperable starting 2018. Bringing this new transmission line in service by June 2018 would serve as an insurance policy in case significant OTC capacity becomes unavailable in 2018. This coupled by delays in development of new resources that were authorized under the LTPP could pose significant capacity shortfalls in CAISO beginning 2018. This new project will make more out of state capacity available to CAISO thereby helping mitigate the risk of Stage 1 & 3 Emergencies.

Conclusion

LS Power encourages CAISO to seek board approval of the Harry Allen-Eldorado 500 kV Transmission Line as an economic project given the benefits demonstrated by CAISO's studies and the additional

benefits identified above. In addition, LS Power encourages CAISO to recognize the benefits to ratepayers of an earlier in-service date in any solicitation conducted for the project.