

## CAISO 2013/14 Transmission Plan: Stakeholder Comments

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LS Power appreciates the opportunity to submit comments on CAISO's 2013/14 Draft Transmission Plan. LS Power remains concerned that CAISO is not prepared to conclude on the Harry Allen Eldorado transmission project ("HAE project") prior to the upcoming Mar 2014 Board meeting. CAISO has stated the need to conduct additional analysis to evaluate the impact of a CAISO-NV Energy EIM market prior to making a recommendation on HAE project. While LS Power is supportive of the need to perform this additional analysis, it is concerned that: (a) performing this EIM analysis had not been prioritized and CAISO staff has not started conducting this analysis, (b) performing additional sensitivity analyses such as what was done for the Delany - Colorado River project ("DCR project") has not been prioritized. Also, LS Power questions why the additional EIM analysis only required for the HAE project, when the new EIM market can potentially have similar impacts on any other new transmission line being built between California, Arizona & Nevada markets.

LS Power requests that CAISO Management prioritize completion of any additional analysis required to assess the impact of the CAISO-NVE EIM on the benefits of the HAE project, so the findings can be presented to the CAISO Board at either the upcoming Mar 19-20 Board meeting or shortly thereafter. All economic studies completed to date as part of the 2012/13 & 2013/14 Transmission Planning cycles clearly show that the HAE project is economic. In addition the HAE project also helps improving overall import capability and resolving contingency constraints related to critical outages in SDG&E area (as reported by CAISO). Any further delay in completing the analysis for this project is unnecessarily precluding the CAISO ratepayers from economic benefits and could put the CAISO transmission grid at risk under contingency events (especially in Southern California) which have recently become much worse with SONGS shutdown.

### **CAISO's economic study**

CAISO's economic study for the HAE project, done as part of 2013/14 Transmission Plan, shows significant economic benefits from building a new 500 kV transmission line from Harry Allen to Eldorado substations. At \$240 mm, the economic benefits of this project far outweigh the capital cost (and annual revenue requirement). CAISO's study shows that HAE project provides reduction in LMPs for all CAISO Load Serving Entities. This reduction in LMPs provides economic savings to all CAISO ratepayers. CAISO Management however mentioned the need to complete additional economic studies to factor in the proposed implementation of CAISO/NVE Energy Imbalance Market (EIM), but only for the HAE project.

While LS Power understands the need to analyze impacts of CAISO-NVE EIM market, but does not understand why this analysis is only required for the HAE project. As CAISO is well aware, the East of River and West of River paths inextricably tie the Arizona, Nevada and California markets together in the South West US. If EIM is implemented between any two of the three markets, it could have an impact on value of new transmission being built between any two of the three markets. Any such impact should be analyzed on a more global basis rather than being performed more locally for a single project. LS Power had expected that CAISO would start this additional economic analysis shortly after the announcement of NVE's interest in joining the EIM in Nov 2013, and that this would be completed prior to CAISO releasing the draft 2013/14 Transmission Plan. Nevertheless, we urge CAISO to complete this analysis as soon as possible.

### **Additional HAE project benefits exist: some not quantified, others under-estimated**

CAISO staff performed an economic study and quantified the production cost savings and capacity benefits from HAE project. Several additional benefits from the project exist, which have not been quantified. We urge CAISO Management to take these into consideration prior to concluding on this project.

- Reliability benefits from HAE line not quantified:  
Per CAISO's 2013/14 Draft Transmission Plan, HAE project relieves several overloads caused by the contingencies in Southern California, such as the loss of Imperial Valley – ECO - Miguel & Suncrest – Sycamore lines. CAISO states that *"...The WECC path rating for WOR has been established as 11,200 MW under certain operating conditions. However, under summer peak operating conditions the transfer capability of this path is limited to a level that is below the WECC path rating due to contingency overloads on the Suncrest-Sycamore 230 kV lines and the Imperial Valley – ECO-Miguel 500 kV lines. These overloads are caused by imports from Arizona, Nevada, and IID and existing and new generation dispatch in southwestern California. Adding the Harry Allen – Eldorado 500 kV line to the system incrementally relieves these overloads and creates approximately 150 MW of incremental import capability..."* While the economic benefit of additional 150 MW of import capability has been quantified, the incremental "reliability" benefit that HAE project brings is not quantified. There are potentially several other critical contingencies (especially ones leading to loss of major 500 kV import lines into CAISO BAA) that HAE project helps relieve either thermal overloads or voltage instability, but these benefits are not captured. A new major 500 kV transmission line connecting CAISO BAA to NVE BAA significantly improves overall system reliability, as studied by LS Power. Such new line should also help prevent regional blackout such as the one that took place in Southern California & Arizona in Sep 2011, "2011 Southwest blackout". This blackout was reported to have left over 2.7 million customers in dark for up to 12 hours in California & Arizona, and has been estimated to have costed between \$97 & \$118 million in economic losses. Over the 50-year lifespan for HAE line, if it can help prevent just one similar blackout, that will more than pay for the capital investment made on building this line now.
- Flexible reserves/capacity benefits not quantified:

CAISO has been stating for a long time that it needs Flexible Capacity/Ramping Capability to manage the intermittency being introduced into the CAISO grid from 33% RPS implementation. While it is generally acknowledged that a new import transmission line such as the HAE line will help provide more flexible capacity to CAISO in the forward markets and Flexible ramping capability in Real-Time markets, the benefits of unlocking access to this new capability have not been quantified.

- Increase in import capability is underestimated:  
CAISO has estimated that import capability increases by 150 MW from building HAE line. LS Power understands that this calculated increase is a very conservative estimate. The increase as calculated by CAISO is for a “summer peak 1-in-10 load” condition. CAISO grid is only expected to experience a 1-in-10 type condition for 1 day (for a few hours) in 10 years. For times other than this, more can be imported into CAISO BAA. CAISO has not accounted for any of these additional benefits.
- Reduction in market power is not quantified:  
New HAE line helps reduce market power in Southern California. Market power has typically existed in Southern California portion of the CAISO grid and this is expected to increase in the future given that SONGS has been shutdown and thousands of MWs of Once Through Cooling (OTC) generators in Southern California are at the risk of shutting down in next few years. The new HAE line brings another source of power to serve Southern California load, hence effectively helping to reduce market power. This benefit has not been quantified.
- Additional modelling enhancements should further increase benefits:  
LS Power understands that some additional modelling enhancements can be made in NV Energy area that will help account for more potential benefits from this line. One such modelling enhancement would be modelling Harry Allen as a trading hub (as recommended by NV Energy) rather than a regular bus. This should reduce the hurdle rate between CAISO & NV Energy potentially allowing for additional cheaper energy/capacity from NV Energy to access CAISO markets, thereby increasing the economic benefits of HAE line.
- Loss reduction benefits have either not been quantified or are under-estimated:  
CAISO estimates a \$1.0 mm per year loss benefit from a 110 mile long DCR line, but estimates no loss benefits from a much shorter 60 mile long HAE line. It is not clear whether no loss benefits mean CAISO’s analysis on this is incomplete or that there are no benefits. HAE line (being a shorter line) should have at least the same loss reduction if not more than the DCR line, so one would expect the loss savings from the HAE project to be at least the same as the DCR project. CAISO should reevaluate this benefit for HAE line or explain why there is a disparity in results for the two projects.
- Sensitivity studies with low discount rate and lower Sycamore-Suncrest line rating have not been completed:  
CAISO performed these studies for the DCR project but not for the HAE project. CAISO estimated a 150 MW Import capability increase from the HAE project. It appears that this was calculated by using the higher rating for the Sycamore-Suncrest line. If the rating is lower (which is a possibility), the HAE project should improve the import capability more than 150 MW (similar

sensitivity for the DCR project show 200 MW import capability increase by using higher rating and 300 MW by using lower rating). This additional analysis should be completed and these additional benefits quantified.

## **Conclusion**

LS Power requests that CAISO perform the remaining studies for the HAE project related to NVE's participation in the EIM on a priority basis prior to the March 2014 board meeting and request board approval of HAE project at that time, or complete such analysis with a recommendation to the board at the April 2014 board meeting. LS Power also requests that CAISO take into consideration the additional benefits of the HAE project stated above to the extent necessary to satisfy the economic criterion for approval.