
Memorandum

TO: PAC MATTERS
FROM: SYNAPSE ENERGY ECONOMICS
DATE: SEPTEMBER 2, 2016
RE: 2016 ECONOMIC STUDY RESULTS TO DATE

At the August 17 PAC meeting, the ISO presented the initial results of the Economic Study requested by NEPOOL in the spring of this year.

Our comments cover three general areas: the results provided; estimating transmission costs; and applying sensitivities to the results.

The results to date provide some clear distinctions between the five scenarios, as was expected when the study process began. The ISO staff deserves credit for evaluating the five different scenarios in regard to production cost, LSE expense, emissions results, and potential transmission constraints in a thorough and prompt manner. We particularly appreciate the efforts made to evaluate Scenario 3, with its max-renewables approach. We look forward to reviewing these initial results in greater depth and providing more feedback to ISO staff.

At the end of the meeting in August, ISO staff identified some unresolved issues for Scenarios 2 and 3 regarding both the costs of additional transmission facilities that may be needed to integrate large quantities of renewable resources and the additional control systems that may need to be added to maintain appropriate voltage, regulation, and stability services. Scenarios 2 and 3 assume large additions of asynchronous resources (wind and solar in particular) that the ISO has no experience or history to use to evaluate how the system will perform across a variety of load levels. At the August meeting, the ISO cautioned that developing estimates of the cost of transmission facilities and controls may be beyond the scope of what the ISO can do. We can understand the novelty of the issues created by Scenarios 2 and 3. At the same time, one of the purposes of this Economic Study was to identify and better understand the trade-offs between the five scenarios. The ISO needs to make some attempt to estimate the costs of necessary additions to the regional energy grid to support the reliable operation of Scenarios 2 and 3. This information is needed to make comparisons between the five scenarios useful.

In regard to sensitivities, we know that Scenario 3 anticipated some alternative analyses (sensitivities?) regarding high and low natural gas prices, adding hydro imports with and without capacity credit, adding off-shore wind with and without capacity credit, to understand how these options affect overall costs. We will

continue to consider if additional sensitivities may be useful in the coming weeks. We understand that the ISO has limited time in 2016 to do these sensitivity cases and that some may need to be deferred until 2017.

