

Initial Clarifying Questions  
Submitted by the Balancing Authority of Northern California (BANC)  
on the  
PacifiCorp ISO Energy Imbalance Market Benefits  
Energy and Environmental Economics, Inc. (E3) (2013)

BANC has prepared these initial clarifying questions on the PacifiCorp ISO Energy Imbalance Market Benefits study prepared by E3. BANC has been evaluating several EIM study and design efforts, including at WECC and through the “PUCEim” activities. BANC is an active Member, along with PacifiCorp, in the NWPP initiative to evaluate an EIM and other operational and commercial tools to integrate variable generation. These questions are intended to help BANC better understand the methods and assumptions that underlie the claimed benefits in the E3 study.

1. Please list the PAC transmission entitlements including transmission capability in MWs that were used to support each of the Intertie availability sensitivities. For the 400 and 800 MW cases, did the model assume any restrictions on the transmission usage for identified transmission entitlements? Does the study take into account lost opportunities for commercial transactions using this transmission today?
2. Although the EIM describes a 5-minute optimization as part of its market design, is BANC correct in our understanding that E3 did not run a 5-minute dispatch as part of its study? Did BANC also understand correctly based on the conversation on the Webinar that the GridView model does not have sub-hourly modeling capability? If this is correct, it would be helpful to have a discussion on this hourly fixed schedule assumption, 15-minute schedules as required by Order No. 764, and full EIM implementation. Since these assumptions were important result drivers in the NREL study effort, further discussion on this would be worthwhile to California market participants and those considering EIM options.
3. What was the basis for the hydro assumptions made in the E3 study?
4. Is the E3 study based on an EIM design with voluntary or mandatory participation of generation and load within newly participating BAs? In other words, does all generation and load participate, or is the study run on a subset of generation within the expanded footprint. How does this study assumption relate to the actual contemplated market design?
5. Is there any granularity with respect to ramping limitations in the generation presumed to participate in the EIM? If not, did E3 run sensitivities based on various percentages of generation in the EIM and its capabilities to respond to a 5-minute dispatch?
6. Under the various sensitivities in the E3 study, what were the differences in production by fuel type?

7. PAC representatives have stated that lessons learned in the NWPP EIM modeling effort have been applied to the E3 study. What kind of adjustments were made and what were the impact of those adjustments on the results?
8. Why did E3 use the hurdle rate method instead of the interchange method used by NWPP?
9. On page 27, Section 2.2.3, “E3 assumed that a PacifiCorp-ISO EIM could achieve 80% of total savings from reduced flexibility reserve requirements.” At first blush, this seems like a “capacity savings” construct, not savings driven by reduced production costs in real time. Please explain.
10. On page 28, Section 2.2.4, “E3 used a \$90/MWh value of avoided renewable energy curtailment as the sum of three components: (1) renewable energy certificate (REC) value, assumed to be \$50/MWh;...” What is the basis for this assumption?
11. On page 32-33, “Annual cost savings from reduced flexibility reserves range from \$4 million to \$77 million. These are driven largely by constraints on the ability of hydropower to provide contingency and flexibility reserves. This is a source of consider uncertainty, and more research is needed to understand hydro’s ability to contribute toward flexibility reserve requirements under high penetrations of wind and solar.” Please explain.
13. Please provide the total Hydro capacity for both the ISO and PAC used in the model that was then allowed to be re-dispatched at the 12 % and 25% levels in the EIM cases.

Tony Braun  
Kevin Smith  
Braun Blaising McLaughlin & Smith, P.C.  
Counsel to the Balancing Authority of Northern California  
(916) 326-4449  
[braun@braunlegal.com](mailto:braun@braunlegal.com)  
[smith@braunlegal.com](mailto:smith@braunlegal.com)