Stakeholder Comments

Amended on April 15, 2013

PacifiCorp-ISO Energy Imbalance Market Benefits Study

Submitted by	Company	Date Submitted
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The following are Southern California Edison's (SCE) comments on the California Independent System Operator's (CAISO) and PacifiCorp's cost benefit study of a proposed combined Energy Imbalance Market (EIM) by Energy and Environmental Economics (E3) published on March 13, 2012.[1] SCE shares the CAISO's and PacifiCorp's goal to create a combined EIM that can result in cost savings and other benefits to both parties. With a growing share of variable energy resources (VER), the ability to use a wider generation fleet to integrate VERs is worth investigating as it can create societal benefits.

However, SCE is concerned that the EIM study performed by E3 may be overstating the benefits, and does not address possible cost impacts to the other elements of the CAISO market structure. It is possible that the entry of an entity that only participates in one portion of the overall CAISO market, creates costs (i.e. uplifts) in other portions of the market that are then borne by other CAISO market participants, thereby violating cost causation principle. The possibility of negative externalities and unintended impacts needs to be discussed and evaluated in the stakeholder process. If necessary, an updated costs and benefits study should be performed to accurately incorporate all costs and factors that have been omitted.

In terms of specifics in the report, SCE has concerns that: some benefits assumptions may be overly generous, implementation and operation costs assumptions may be too low, and that certain impacts of an EIM have been omitted from the analysis.

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[1] http://www.caiso.com/Documents/PacifiCorp-ISOEnergyImbalanceMarketBenefits.pdf

The key issues are the following:

- Some benefits may be overstated due to:
    - The assumption of hourly intertie schedules, not 15 minutes
    - Overstated value of renewable curtailment due to the assumption that all renewables are eligible for the production tax credit
- Lack of certainty on the degree EIM alone will actually reduce commitment and reserve requirement of flexible resources
- No alternate cost scenarios to address unforeseen EIM implementation complexities
- Omission of possible uplifts created by any infeasible schedules associated with EIM

I. Certain benefits assumptions may be overstated

a. In the future, intertie schedules will be based upon 15 minutes not hourly

The benefits of dispatch savings were based upon hourly schedules, however, in the future scheduling will be moving to 15 minutes. This will require a balancing authority to re-dispatch their system on a 15 minute basis. Therefore some of the benefits identified in the study will already be captured due to the change in intertie schedules, and should not be solely attributed to EIM. In addition, the valuation of the intraregional dispatch may also be overestimated due to the change in intertie scheduling. The dispatch benefits should be calculated in moving from 15 minute schedule to 5 minutes.

b. Not all renewables get a production tax credit

E3 assumed all curtailed renewable generation received the production tax credit (PTC) of $20/MWh. However, about five years ago, renewable projects were also eligible to use the more favorable investment tax credit (ITC) which offers a 30% cash grant on construction costs. Thus, we expect most new renewable projects to take the ITC benefit instead of the PTC. The use of the PTC is common for older wind projects, constructed before 2007-8 time period. However, since this tax break only lasts for 10 years, most renewable projects' PTC will expire by 2017 which was the test year for the study. E3 made no adjustment for the percentage of projects that use the PCT.

c. It is unclear to what degree the proposed EIM will reduce the commitment of flexible reserves

The EIM is a five minute re-dispatch of resources already committed through the separate CAISO and PacifiCorp's processes to meet their net native load. At the April 11, 2013, stakeholder meeting, the CAISO has clarified there will be an 'advisory commitment' that may produce efficiency. While SCE agrees that diversity benefits could be obtained by joint planning and commitment of flexible resources, but it is not clear to what degree this will be obtained through the proposed EIM process. In the report E3[2], acknowledged that this may not be in place when the EIM becomes operational and operational experience would be required to achieve the full possible amount of benefit. The benefits associated with reduced flexibly needs were 20-33% of the total benefits, so if this benefit cannot be obtained based on restrictions on commitment, then the study has overestimated the benefits.

SCE offers an alternative benefit scenario based on adjusted and conservative (i.e. lower benefits) assumptions. Even with these adjustments, there are likely still material benefits of EIM. Adjusting for the items above results in alternate gross benefits, shown in the table below, with the following scenarios:

- A conservative assumption for dispatch benefits resulting from the pending 15 minute intertie schedule instead of hourly. For this scenario, 50% of the benefits the E3 calculated were assumed for inter and intra regional dispatch.
- Reduced saving in commitment or planning for flexibility reserves. For this scenario 50% of the benefits E3 calculated was assumed.
- Only 10% of renewables taking advantage of the PTC in 2017

[2] Ibid, page 19

Alternate Scenario of Gross Benefits of a CAISO-PacifiCorp EIM						
	Low transfer capability		Medium transfer capability		High transfer capability	
Benefit Category	**Low range**	**High range**	**Low range**	**High range**	**Low range**	**High range**
Interregional dispatch	$7.1	$5.5	$11.2	$8.9	$11.2	$8.9
Intraregional dispatch	$1.2	$11.5	$1.2	$11.5	$1.2	$11.5
Flexibility reserves	$2.0	$10.4	$5.5	$5.5	$6.7	$38.6
Renewable curtailment (a)	$0.9	$8.6	$0.9	$8.6	$0.9	$8.6
Total benefits	**$11.1**	**$36.0**	**$18.7**	**$54.6**	**$19.9**	**$67.6**
(a) 12 gWh * ($10/MWh REC + $20/MWh Gas) + (12 gWh * 10% * $20/MWh PCT) = $0.384 million 120 gWh * ($10/MWh REC + $20/MWh Gas) + (120 gWh * 10% * $20/MWh PCT) = $3.84 million						

II. No alternate scenarios of implementation costs were considered.

The study analyzed a range of benefits that could occur, but failed to recognize that implementation costs are also not certain due to unforeseen complexities that must be addressed in the implementation and operation of EIM. The $2.1 million one-time fixed fee is likely to be higher due to unexpected system implementation costs.[3] In addition, the report does not discuss if there would be an increase of forecasting or market monitoring costs by either entity which could increase annual operation costs due to a combined EIM.

III. The report does not acknowledge additional costs that may be created by a joined EIM

The CAISO market is a complex nodal market currently consisting of a day-ahead market, an hour-ahead market, and a real time market, which is made even more complex by virtual bidding on internal nodes as well as on interties.[4] The introduction of PacifiCorp only into the EIM is likely to impact these other markets, which could create costs that are only borne by CAISO's customers. These issues are not addressed in the report and need to be discussed during the stakeholder process.

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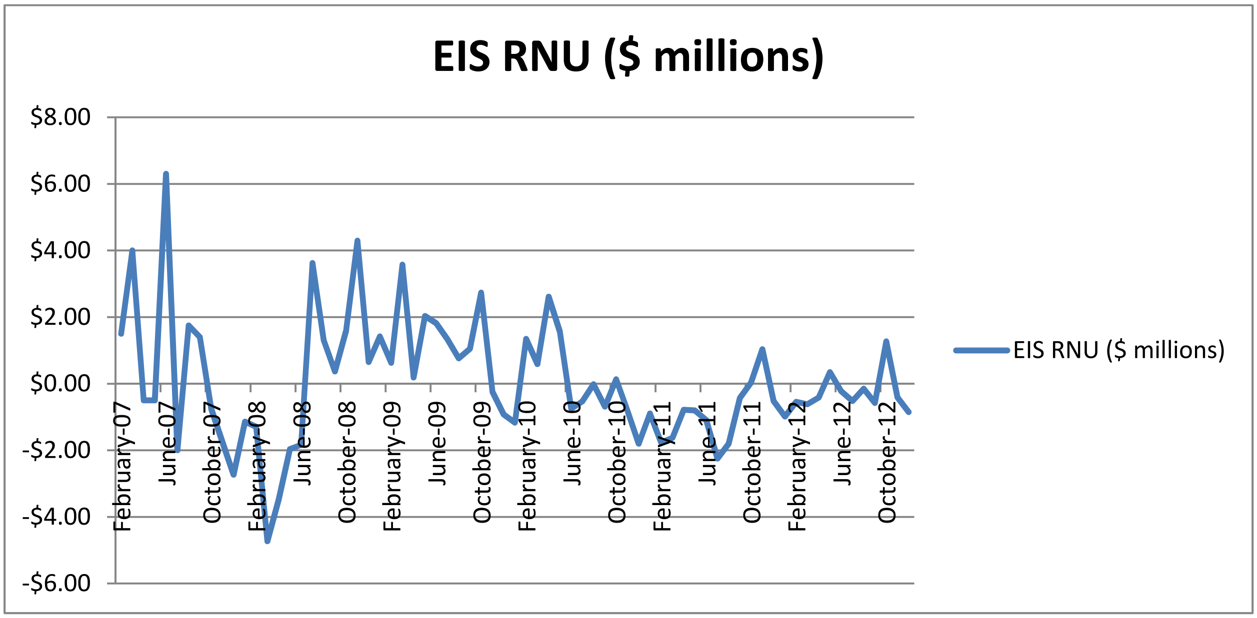
[3] E3 acknowledged they did not do an independent analysis of system implementation costs. All benefits listed in the tables are gross and not net of costs. Ibid, page 9. It appears that the focus of the E3 report is on gross benefits and not possible costs due to EIM.

[4] Virtual bidding (or convergence bidding) at the interties is currently turned-off in the CAISO market, but CAISO proposed to turn it back on with the implementation of 15 minute transmission scheduling.

In addition, there are certain operational issues that were not addressed in the report associated with feasible schedules. For example, the Southwest Power Pool (SPP) implementation of the EIM had an issue of uplift costs. In 2007, a task force was created to address uplift charges that reached up to $6 million per month.[5] It was found that is was due to schedule infeasibility. The chart below shows uplifts generated by the EIM run by SPP over several years[6]. The chart not only displays high monthly volatility in uplifts but also shows that the EIM generated a net positive uplift. This uplift was $4.45 million from February 2007 to December 2012, even after years of operation and given SPP's expertise. With the uplifts generating a cost for ratepayers over several years, under an experienced EIM operator such as SPP, SCE does not believe the CAISO has appropriately incorporated all the costs in its analysis.

[5] http://www.spp.org/publications/OCT07%20Metrics%20Report.pdfhttp://www.spp.org/publications/2007_07_Monthly_Metrics_Report.pdf Page 25, http://www.spp.org/publications/200712%20SPP%20EIS%20Monthly%20Metrics%20Report%20-%20December%202007.pdf.

[6] Page 25, http://www.spp.org/publications/200712%20SPP%20EIS%20Monthly%20Metrics%20Report%20-%20December%202007.pdf. Page 23, http://www.spp.org/publications/200812%20-%20SPP%20Monthly%20State%20of%20the%20Market%20Report%20-%20December%202008.pdf. Page 24, http://www.spp.org/publications/SPP-MSOM-Report-200912.pdf. Page 22, http://www.spp.org/publications/SPP%20MSOM%20Report%20201012.pdf. Page 21, http://www.spp.org/publications/SPP%20MSOM%20Report%20201112.pdf. Page 21, http://www.spp.org/publications/SPP%20MSOM%20Report%20201212.pdf.



IV. Summary

SCE supports the investigation of an EIM with PacifiCorp, and the E3 study is a useful data-point in determining if the effort should continue. While it is SCE's view that some of the benefit assumptions have been generous, the effort to implement a combined EIM should continue. In the upcoming months the stakeholder process should continue to evaluate the possible complexities of an EIM and determine if the study should be revised to include the costs and/or benefits of identified complexities.