

Stakeholder Comments

Regional Integration California GHG Compliance Straw Proposal

| Submitted by | Company | Date Submitted |
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Southern California Edison (SCE) appreciates the opportunity to provide comments on the California Independent System Operator’s (CAISO) Regional Integration California Greenhouse Gas (GHG) Straw Proposal (Straw Proposal), dated November 17, 2016¹. SCE supports the EIM, and any associated improvements that further increase the benefits of the EIM. As the EIM continues to bring many benefits, including overall GHG reduction² in the EIM footprint, SCE believes that any proposed changes to the current EIM market rules should be carefully assessed so the changes will not unnecessarily reduce the benefits of the EIM.

In the Straw Proposal, the CAISO proposes to adopt Option #2 as the long term solution to resolve the GHG impact issue associated with secondary dispatch. The proposed Option #2 (i.e., a two-pass market run approach) can fundamentally change how the market commits and dispatches resources with the potential to lead to less import power flowing to California, and subsequently reduced EIM benefits, including potentially less GHG reduction across the EIM footprint, as more emitting resources inside California would have to be dispatched to offset any reduction in imports.

Given this potential impact, SCE reiterates its position that the CAISO and the California Air Resources Board (ARB) should monitor and study the GHG impact related to secondary effects before it adopts any solution. Further, the EIM benefits may become larger as more entities join the EIM, which warrants a more complete study of the GHG impacts. Based on the study, the CAISO, ARB, and stakeholders can decide whether a solution is needed. If and when a solution is needed based on the study results, intertemporal netting should be considered as part of the solution. Such netting would recognize the significant investment that California has made in renewable resources within the state that when exported tend to reduce emissions outside of the state. Allowing netting over a reasonable period of time such as a year will allow EIM benefits to continue to accumulate at their maximum potential as they do today.

¹ <http://www.caiso.com/Documents/StrawProposal-RegionalIntegration-EIMGreenhouseGasCompliance.pdf>

² The CAISO presented a study for the GHG impact of EIM during the first 6 months of 2016 and found a net reduction of 292,000 metric tons of GHG emissions.

http://www.caiso.com/Documents/EIMGreenhouseGasCounter-FactualComparison-PreliminaryResults_Jan-Jun_2016_.pdf

1) Since Option #2 may impact and lead to reduced EIM benefits, the CAISO should consider Option #1 to allow EIM benefits to accumulate at their maximum potential as they do today.

As seen in the latest quarterly report³, for Q3 2016 alone, the EIM market has saved ratepayers \$26 million, which brings the EIM's total benefits to \$114 million since it started two years ago. The EIM also avoided renewable curtailment, of 33,000 MWh, and the avoided renewable curtailments displaced 14,200 metric tons of GHG in Q3, 2016 alone. Those benefits may become larger as more entities join the EIM and as California moves toward achieving its 50% Renewables Portfolio Standard (RPS) requirements.

Under the proposed Option #2, however, resource commitment and dispatch will be fundamentally impacted. The proposed approach only assigns the resources that see incremental dispatch between the two runs as serving California load. This can potentially lead to a significant reduction in import power into California, thus reducing the overall EIM benefits. The CAISO should fully evaluate this potential outcome both on costs and total regional GHG impacts.

While SCE understands and supports the efforts in California to reduce emissions including the emissions from imported power, SCE is concerned that a system in which only increases in GHG are recognized while failing to recognize reductions in GHG is not consistent with the operation of an EIM that should have improvements in efficiency as its core operation. Those increases in efficiency are in the ability to integrate renewable resources and produce the most economically efficient outcomes for market participants. If imports to California are always viewed through the lens of secondary dispatch and attribution of GHG associated with those dispatches while exports are never viewed as having an equal and opposite effect, it is questionable whether the EIM is producing either the full renewable integration benefits or the economically efficient outcome. Given the data available thus far shows a net decrease in emissions from EIM and a cost efficient outcome, SCE encourages the CAISO to continue to work with the ARB to evaluate the environmental impact of EIM to ensure that any implementation is consistent with the overall environmental impact of EIM dispatches.

2) Intertemporal netting should be part of any analysis or solution to maximize the benefits of the EIM, including the benefit of GHG reduction across its footprint.

As described in SCE's prior comments⁴, a solution that does not consider intertemporal netting will not incorporate emission reductions across the market footprint resulting from the EIM optimization, and in turn could improperly disrupt economic EIM dispatch. Further, it would not reflect the benefit to the environment of EIM electricity market trading. It can be expected that the reduction of emissions under exports of clean resources from California will become even

³ http://www.aiso.com/Documents/ISO-EIMBenefitsReportQ3_2016.pdf

⁴ Page 3, SCE comments, available at <http://www.aiso.com/Documents/SCEComments-RegionalIntegrationCaliforniaGreenhouseGasCompliance-TechnicalWorkshop.pdf>

larger as California moves toward achieving its 50% RPS requirement, and in turn, the net GHG reduction will improve over time.

During the discussion of this topic, an assumption that the existing ARB Regulation does not recognize intertemporal benefits has been put forth. SCE has reviewed the ARB regulations and finds no strict prohibition of the netting that has been discussed in this process. SCE believes that the regulation has elements that are very much consistent with the idea of netting. For example, the Cap-and-Trade program allows offset programs. Some of these offset programs involve reductions in greenhouse gases (for example, through forestry efforts) which will achieve the offsetting reductions over a period of time that is different than the emissions for which they are offsetting.⁵ The qualified export adjustment allows an entity to net imports and exports on an hourly basis. That is, under the qualified export process the import of emitting resources can be offset by the export of another resource on an hourly basis. Both of these examples involve netting of various time frames and would encompass the netting of EIM transactions over the course of a year reasonably. As shown in the CAISO reports⁶, the EIM has been providing the benefit of net GHG reduction across its market footprint. When excess clean power flowing from California to other states results in net GHG reduction in the market footprint, California load serving entities have contributed toward the GHG reduction, as the majority of those clean power resources were built, and new clean resources continue to be built, to meet California RPS requirements. As a general matter, these plants are built pursuant to a contract with a load serving entity and as such are paid for by the customers of the California load serving entity. Having paid for the renewable asset to exist and produce GHG free energy, the customers of the California load serving entity should obtain the complete benefit of that emission free energy including when such energy is exported and reduces emissions outside of the state. If netting is not allowed, the benefit of emissions reductions paid for by California customers will accrue to someone else without compensation to California load. Therefore, temporal netting would paint a more realistic picture of the GHG benefits of renewable exports – and a more realistic picture of the regional benefits of California’s continued participation in regional energy markets and resulting GHG benefits

3) It is premature without real-world experience to conclude that the Option #2 EIM Proposal should be applied to the Day-Ahead Market under a regional expansion.

⁵ SCE understands that some forestry efforts may take many years to achieve the offset necessary to account for emissions that may take a different time horizon to create.

⁶ The CAISO presented a study for the GHG impact of EIM during the first 6 months of 2016 and found a net reduction of 292,000 metric tons of GHG emissions.

http://www.caiso.com/Documents/EIMGreenhouseGasCounter-FactualComparison-PreliminaryResults_Jan-Jun_2016_.pdf.

Also see quarterly EIM benefit reports. http://www.caiso.com/Documents/ISO-EIMBenefitsReportQ3_2016.pdf

Because the vast majority of the volume of market transactions occurs in the Day-Ahead Market, a proposal that can fundamentally change how resources are committed and dispatched should not be applied to the Day-Ahead Market without full evaluation and testing⁷. The importance of a well-functioning Day-Ahead Market cannot be overemphasized given the potential for great financial impacts associated with a fundamental rule change in the Day-Ahead Market. At this stage, SCE believes that it's too early to conclude that the same Proposal should be applied to the Day-Ahead Market. Instead, the CAISO should first gain sufficient real-world experience with more information about the performance of any new EIM Proposal. Based on this experience, the CAISO should then assess whether the EIM Proposal should be applied to the Day-Ahead Market.

4) SCE agrees with the CAISO and supports the concept of treating Load Serving Entity (LSE)-contracted resources as California supply under the proposed Option #2.

The CAISO has proposed that, for a resource located outside California that has a contract with a California LSE, the resource should be treated as a California supply under its proposal.

SCE agrees with the CAISO and supports the concept of treating LSE-contracted resources as California supply under the proposal as it addresses the issue that would otherwise arise since the resource is located outside California and could be dispatched to serve an EIM load in the first-pass run and therefore couldn't be deemed to serve California load in the second-pass run. Consistent with the comments above, if California load has paid to have a resource outside of the state available to serve its load, then the California load should get the full benefits – including the full GHG benefits - of that resource. Including such contractual resources in the first pass as serving California load would be consistent with this notion. SCE suggests that the concept should be applied to any contract during any time period that obligates the resource to serve California load, regardless the type of the contract.

5) Comments on other specific aspects of the proposed Option #2.

a. The role of first-pass run in unit commitment

SCE understands that in the simplified process proposed by the CAISO, no unit commitment decisions will be made in the first-pass run as unit commitment status will be obtained from previous binding Real Time Dispatch (RTD) interval. The only information from the first-pass run that is used by the second-pass run is each resources' economic GHG base, which is compared to the dispatch level seen in the second-pass run to determine which resources will be deemed to flow into California. SCE would like the CAISO to confirm this understanding.

⁷ Unless the lack of such proposal in Day-Ahead Market would otherwise create issues to a well-functioning Day-Ahead Market. For example, if failing to apply the proposal would create convergence issues between the Day-Ahead Market and the Real-Time Market.

b. How wheel through transactions are treated

SCE understands that in the first-pass run, wheel-throughs are allowed to occur, this is because the EIM transfer constraint will restrict net EIM transfer into California to be zero (or non-positive in math forms)⁸, so that allowing wheel-throughs would not conflict with the EIM transfer constraint under the proposal. SCE would like the CAISO to confirm this understanding.

c. Seams issue between Day-Ahead and Real-Time

During the stakeholder conference call held on Dec 1st, 2016, the CAISO stated that the EIM transfer constraint will restrict EIM transfers into California to be zero (or non-positive in math forms) in the first-pass run in the Real-Time Market. This does not include flow from regular import and export bids, flow from Day-Ahead market schedules, or flow from a resource that has contract with a California LSE.

To better understand the CAISO proposal, the CAISO should explain which components of energy exchange between California and other states would be restricted in the first-pass run in *the Day-Ahead market*.

d. Whether Convergence Bids (CB) could create artificially low/high economic GHG base

There may be scenarios where virtual supply displaces physical resources in the first-pass run and lowers the economic GHG base for resources in the EIM area. In the second-pass run, if the virtual supply is not cleared⁹, would it result in artificially high GHG obligation for California load? Similarly, can a virtual demand bid result in artificially low GHG obligation for California load? SCE would like the CAISO to explain how convergence bids can interact with the process of determining secondary dispatch emissions and whether this could lead to issues with the GHG calculations and/or market efficiency.

6) Other topics that are covered in the CAISO straw proposal

a. Multiple resource IDs to support multiple GHG regimes

The CAISO proposes that a generator located outside of CA can have two “resource ids”, one for the period it is under contract with a California LSE and the other for the period that is not under contract with the LSE. SCE agrees that such treatment is needed under the proposed Option #2 so resources that have contracts with an LSE are appropriately handled in the process of establishing the correct economic GHG base under the proposal.

⁸ Or put it differently, the EIM transfer constraint does not open the EIM tie between California and other states, so wheel-throughs are allowed since the flow on the tie from those wheel-throughs will net to zero.

⁹ For example, when the second-pass run clears at a lower price so that the virtual supply is no longer cleared. A lower price in the second-pass run could be because unit commitments between the two runs are different, or other reasons such as the change in the objection function, increased transfer flows between areas.

b. GHG regime of intertie transactions

The CAISO proposes that intertie scheduling points in a multi-state balancing authority will not be considered part of any GHG regime and will always be included in the non-GHG regime. Further, an import must be registered as a system resource to be included in California supply. For an import without being registered as a system resource, the ISO creates a transaction id when the bid is submitted without the ability to select a flag to be California supply. Instead, these imports can submit a GHG bid adder to serve CA load.

As described above, SCE believes it's too early to conclude that the same proposal should be applied to Day-Ahead Market. While SCE does not necessarily support or object to this element of the proposal, SCE cautions that a design should not significantly affect the liquidity of intertie transactions, that the focus of the CAISO proposal should be on immediate issues seen in the EIM, and the CAISO should allow additional time to vet proposals that are targeted for regional expansion.

c. GHG regime of convergence bidding (CB)

The CAISO proposes that (1) CBs can be submitted at any node, trading hub or load aggregation point, (2) Virtual supply/demand will be considered in the GHG regime of the state the node is located in geographically, (3) Virtual supply will not submit a separate GHG bid adder, and (4) a trading hub or load aggregation point (LAP) must be comprised of nodes which are located in a single GHG regime region.

As related to section 4.d above, SCE seeks clarification on whether CBs will cause an artificially low/high economic GHG base. Further, with CBs being allowed in a GHG regime and non-regime at the same time, will this create any opportunity for CBs to take advantage of price differences between two regimes when the GHG constraint binds?