

## **Comments on EIM Greenhouse Gas Enhancements Third Revised Draft Final Proposal**

**Department of Market Monitoring**

June 14, 2018

### **Summary**

In this initiative, the ISO is proposing adjustments to the components of its EIM market design that track GHG costs from EIM transfers into California. In designing the adjustments, the ISO “has worked with ARB and stakeholders in ARB’s rulemaking process to address a concern that the EIM GHG design is not fully capturing the impact to the atmosphere that occurs in connection with EIM transfers to serve CAISO load”.<sup>1</sup> In particular, the ARB and others have been concerned that while the optimization often assigns EIM transfers to resources that do not pollute, many polluting resources are dispatched up by the optimization at the same time.

The dispatch of other resources that may be contributing to support transfers but are not assigned a transfer or compliance obligation is referred to as *secondary dispatch*. The resulting design in the third revised draft final proposal will address some of the concerns about secondary dispatch, although it will also create a potential limitation on the total benefits of the EIM. DMM encourages the ISO to continue to work with stakeholders to refine the final design, but the current proposal is a significant improvement from previous proposals that were intended to address the secondary dispatch issue.

### **Background**

The current implementation of GHG accounting minimizes the cost of compliance with the GHG obligations by assuming that the resources with the lowest cost of compliance have been used to meet the transfers to California. Assigning the transfers to specific resources or capacity is necessary because the capacity that is designated as having supported transfers to California is also assigned a compliance obligation for the ARB’s cap and trade program. The obligation involves obtaining compliance instruments for any carbon emissions related to the production of energy that is transferred to California.

The current implemented design often leads to renewable resources being assigned to support transfers to CAISO due to their lack of carbon costs. However, because these resources often have low marginal energy costs, it can be argued that they would run whether that transfer to California happened or not. Other resources may actually be getting dispatched to support transfers to California.

The ISO’s proposed design is an attempt to account for the dispatch of other resources that may be dispatched at the same time that transfers are made to California. The third revised draft final proposal accomplishes this by limiting the capacity that can be deemed delivered to

---

<sup>1</sup> *EIM Greenhouse Gas Enhancements 2<sup>nd</sup> Revised Draft Final Proposal*, CAISO, February 6, 2018, p. 4:  
<http://www.caiso.com/Documents/SecondRevisedDraftFinalProposal-EnergyImbalanceMarketGreenhouseGasEnhancements.pdf>.

California. The only capacity that can be deemed delivered to California is the capacity that is above the base schedule of each resource.

If the EIM BAA intends to run resources, such as renewables, even if the resources do not support transfers to California, the resources should be included in the BAA's base schedule. When resource capacity is included in the base schedule, that capacity will not be eligible to support transfers to California. The EIM transfers to California will then have to be supported by other capacity that may be more likely to carry a non-zero GHG cost.

### **Problems with previous proposals**

The ISO's goal for the EIM GHG initiative has been to build a system to compare actual market dispatch in EIM areas to a theoretical dispatch that does not include transfers to California. The ISO hopes that it can use the results from the theoretical dispatch without transfers to California to establish some parameters which will limit the ability of the market to deem capacity delivered to California when that capacity would have run even if there were no transfers to California.

The third revised draft final proposal uses the EIM base schedule as the dispatch for the theoretical scenario in which there are no transfers to California. Previous versions of this proposal had contemplated other methods of establishing the dispatch for the scenario with no transfers to California. One of these, presented in the draft final proposal,<sup>2</sup> focused on a two-pass solution. The two-pass solution involved first calculating an optimal dispatch in the theoretical situation with no transfers to California. In the second pass, the ISO had proposed to model the available transfer capacity to California, but to use the first pass dispatch to limit the resource capacity that could be deemed as delivered to California in the final dispatch. All of the two-pass solutions suffered from significant pricing and incentive issues.

After the problems with the two-pass solutions were understood, the ISO proposed a new design that assumed that all dispatches in EIM that supported transfers to California also led to some increase in carbon output. The second revised draft final proposal included a price floor for carbon compliance applied to all resources. The price floor proposed in the second revised draft final proposal would have led to distorted price signals and corresponding inefficient dispatch. In particular, the price floor for GHG components and the presumption of secondary emissions from all EIM dispatches would lead to inefficiently low utilization of high value storage resources located in EIM areas. DMM supports the improvement the ISO made to its proposal by excluding the price floor and related assumptions from the third revised draft final proposal.

### **Of the designs that have been proposed to account for secondary dispatch, the third revised draft final proposal is the least problematic**

The ISO's third revised draft final proposal relies on base schedules submitted by the EIM entities to serve as the dispatch from the theoretical scenario with no transfers to California. The proposed design limits the amount of capacity from any resource that can support

---

<sup>2</sup> <http://www.caiso.com/Documents/DraftFinalProposal-EnergyImbalanceMarketGreenhouseGasEnhancement.pdf>

transfers to California. For any resource, only an amount of capacity equal to the difference between the resource's base schedule and the resource's maximum bid in quantity can be used to support transfers to California. For example, a 100MW resource with a 60MW base schedule can support up to 40MW of transfers to California. The resource need not be dispatched up relative to its base schedule in order to support the transfers; the new policy would only limit the capacity used for transfers to the difference between base schedule and maximum bid in capacity. Secondary dispatch is not eliminated under this proposal, but it is decreased.<sup>3</sup>

Relative to the two pass system and the price floor previously proposed by the ISO, the third revised draft final proposal should have less of a detrimental impact on pricing and dispatch efficiency. Therefore, DMM views the third revised draft final proposal as an improvement over the ISO's previous proposals for addressing the secondary dispatch issue.

### **The ISO should monitor base schedules that may be designed to influence the capacity deemed delivered to California**

The ISO's proposal to use the base schedule to serve as the dispatch from the theoretical scenario with no transfers to California creates a gaming opportunity that should be monitored. For a low emissions, low cost resource, an entity could intentionally submit base schedules below the resource's expected output. This strategy would allow output above the artificially low base schedule of the resource to be available to support transfers to California in the real-time market runs. Even though EIM entities create and attest to the accuracy of their submitted base schedules, the ISO should be prepared to monitor for the above behavior and be prepared to adjust the market design and submit referrals to the FERC Office of Enforcement.

### **ISO's proposal can limit EIM benefits by limiting transfers into California**

The design proposed in the third revised draft final proposal places new administrative limits on EIM transfers into California that do not exist under the currently implemented design. In the currently implemented design, total EIM transfers into California are limited in any given interval by physical constraints such as the sum of the transmission capacity on all the ETSRs into California and the generation capacity that resources make available to California. The design of the third revised draft final proposal creates a new administrative limit on the amount of generation capacity that can support transfers. The proposed new administrative capacity limit would further limit generation capacity that can be deemed delivered to California to only the capacity for each resource that exceeds the resource's base schedule.

The proposed administrative capacity limits may at times reduce the efficiency of total EIM area dispatch. This is because the optimization could at times not dispatch EIM participating generation capacity that would be willing and able to serve transfers to CAISO if not for the proposed administrative capacity limits. This can occur when the proposed administrative limits restrict a group of resources' California-eligible capacity to be below the most restrictive

---

<sup>3</sup> For an example of how the new proposal limits but does not stop secondary dispatch, see p. 6 of the 3<sup>rd</sup> revised draft final proposal: <http://www.caiso.com/Documents/ThirdRevisedDraftFinalProposal-EnergyImbalanceMarketGreenhouseGasEnhancements.pdf>

physical limitation—either the transmission transfer capacity over which the group’s power could flow into California or the group’s generation capacity bid into EIM.

One basic scenario in which the policy constraint can be expected to be a limiting factor is when FMM or RTD load in an EIM area is below the load forecast that was used when base schedules were submitted. In this kind of scenario, the difference between base scheduled load and market load becomes stranded capacity under the ISO’s proposal.

For example, suppose an EIM BAA has a base scheduled load of 5,000 MW. This load is met with 1,000 MW of clean resources and 4,000 MW of energy from gas resources. The gas resources have a total bid in capacity of 5,000 MW. Therefore, the gas resources have 1,000 MW of capacity that is eligible to serve California transfers under the ISO’s proposal. Assume that there is 1,500 MW of transfer capacity available from the EIM BAA to California. Also assume that for a particular FMM interval, the EIM BAA’s load forecast is actually 4,700 MW instead of the 5,000 MW used to create base schedules. This 4,700 MW could be served by the 1,000 MW of energy from clean resources and by only 3,700 MW of energy from the gas resources.

In this scenario, the ISO’s proposal limits the transfers that the EIM BAA can deliver to California to be below the transfers that could be delivered given the transmission and generation that is actually available to support transfers to California. The gas resources would provide 3,700 MWs to meet the EIM BAA load. However, out of the remaining 1,300 MWs of capacity bid into EIM by the gas resources, the ISO’s proposal would only allow 1,000 MWs to be transferred to California. The ISO’s proposal would prevent 300 MWs of undispatched capacity from being dispatched up and transferred to California, even if that 300 MWs had lower costs and lower emissions than the California resources that would be displaced.

It may be possible to improve the efficiency of the ISO’s proposal by identifying scenarios such as those described above and designing appropriate exceptions to the proposed administrative capacity limit.

### **Potential design enhancements**

It may be possible for the ISO to make additional capacity available for supporting transfers to California while maintaining the third revised draft final proposal’s basic framework for addressing secondary dispatch. For example, the ISO could utilize an estimate of total load and dispatch for an interval, such as results from an advisory interval. The ISO could make more capacity available for transfers if the results in the advisory dispatch show that:

1. ETSRs into CAISO are not binding;
2. All resources willing to support transfers to CAISO have been allocated the maximum transfer according to the proposed policy constraint;
3. Some resources in an EIM BAA are dispatched below maximum bid in capacity; and
4. Those resources are willing to use more capacity to support transfers to California than the difference between base schedule and their maximum economic bid

When all of the above conditions are true, the financially binding market run could use the advisory dispatch results to determine where there is capacity available that is not needed to

serve an EIM BAA but could be used to serve CAISO. Specifically, the market could make available for supporting transfers to California any capacity that the SC has flagged as being available to California but that was not dispatched in the advisory run.<sup>4</sup> The undispatched capacity should not be subject to secondary dispatch concerns because it would have been shown in the advisory interval that this capacity is not needed to support EIM load.

Consider again the example in the section above. Assume those results are from an advisory interval. Under the potential enhancement, 1,300 MWs of gas resource capacity would be available to support transfers to California in the binding market run because 1,300 MWs of gas resource capacity was undispatched in the advisory interval. This could significantly improve the efficiency of the dispatch in the binding market run relative to the ISO's third revised draft final proposal.

DMM views the above concept as a starting point for developing proposals to enhance the ISO's latest proposal. It could take substantial effort to work out the implementation details of any such enhancement.

### **Conclusion**

DMM encourages the ISO to continue to work with stakeholders to refine the final design, but the current proposal is a significant improvement from previous proposals.

---

<sup>4</sup> For a variable energy resource, this would entail making available for supporting California transfers the difference between the resource's advisory interval forecast and the resource's advisory interval schedule, if that exceeded the difference between the resource's binding interval forecast and the resource's base schedule.