

Memorandum

To: ISO Board of Governors

From: Keith Casey, Vice President, Market and Infrastructure Development

Date: March 15, 2012

Re: **Decision on Circular Scheduling**

This memorandum requires Board action.

EXECUTIVE SUMMARY

In response to stakeholder requests, Management seeks approval of a proposal that provides greater clarity in the ISO's market design on a practice known as "circular scheduling." The proposal defines objective criteria to identify the type of schedule that would be addressed by a market rule, and identifies settlement provisions intended to significantly reduce the financial incentive to engage in this type of scheduling. The settlement rule would apply to schedules involving a single scheduling coordinator.

Circular scheduling is the combination of import and export schedules, commonly accepted to be by a single entity, where the source and sink of the transaction is in the same balancing area. Circular schedules do not affect the actual flow of power. Rather, circular schedules can adversely affect real-time operations by contributing to differences between scheduled and actual flow. However, circular schedules can provide a financial opportunity when energy prices differ where energy is imported and exported.

For identified circular schedules whose scheduling coordinator is the same for the source and the sink, the proposal settles the import to the ISO at the lower of the locational marginal prices at the scheduling points for the import and export. The proposed settlement removes financial incentives for a scheduling coordinator to arrange a circular schedule.

Moved, that the ISO Board of Governors approves the policy to implement modifications to the settlement of circular schedules, as described in the memorandum dated March 15, 2012; and

Moved, that the ISO Board of Governors authorizes Management to make all the necessary and appropriate filings with the Federal Energy Regulatory Commission to implement the proposed tariff change.

Management also considered schedules involving multiple scheduling coordinators with sources and sinks in the same balancing area. Management recommends that the ISO continue to monitor for the volume and operational impact of these schedules. If the volume and operational impact of schedules involving multiple scheduling coordinators increases, the ISO will consider extending the market rule to them. This measured approach responds to stakeholder concerns and recognizes that commercial trading through exchanges and brokers can occasionally produce schedules with the same source and sink balancing area without any intent of scheduling a transaction that is circular in nature. Imposing a settlement rule based on the current level of activity could unduly restrict commercial activity.

BACKGROUND

Circular schedules do not produce an actual flow of power. However, a market participant could financially benefit by earning the price difference between the points at which the energy was scheduled to be imported to and exported from the ISO. This can be explained using the following example as illustrated in Figure 1.

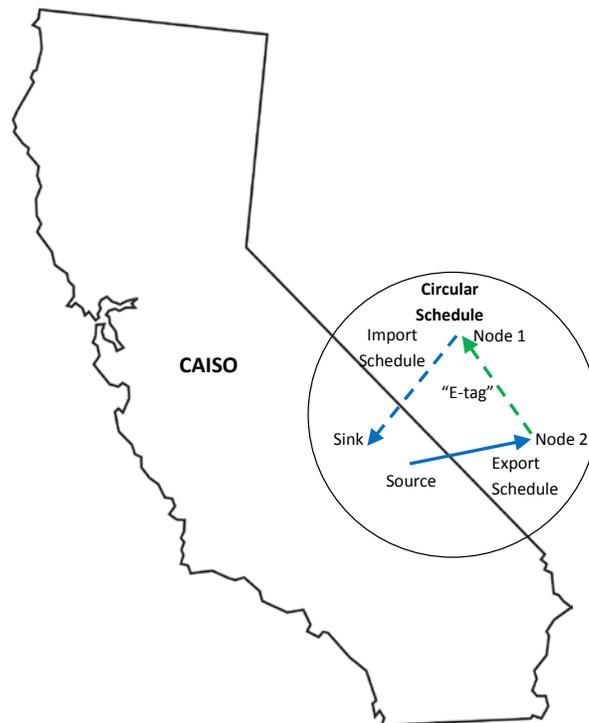


Figure 1: Circular Schedule Illustration

The circular schedule consists of a market schedule to import power to the ISO using one intertie (Node 1) and export this power at another intertie (Node 2), which is often in a different balancing area than Node 1. The actual circular nature of the combined import and export schedules is not apparent based only on review of the schedules submitted in the ISO market. Rather, the circular nature of the schedule only becomes apparent after the market is complete and the full description of the

transaction including the location of the source and sink and all intervening transmission paths is described in the “e-tag” used to coordinate interchange transactions between balancing areas.

Because the power scheduled for export from the ISO would be returned back to the point where the import originated, these circular schedules would not produce an actual flow of power. However, a market participant could profit from the circular schedule by earning the price difference between the points at which the energy was scheduled to be imported to and exported from the ISO. If the intertie for Node 2 is congested for imports into the ISO, the export schedule from the ISO would be paid for providing counter-flow in the opposite direction. If there is no congestion for imports on the ISO’s intertie from Node 1, and only nominal costs for the external transmission from Node 2 to Node 1, the market participant would profit even if there is no actual delivery of energy and no physical change in flows.

The ISO has operational and market concerns that can result from circular scheduling, including:

- These schedules have the potential to exacerbate unscheduled flows on the ISO’s interties by introducing market schedules that will not produce any actual flow of energy.
- Increasing congestion management costs that are imposed on other market participants.
- Circular schedules can also make it more difficult for ISO operators to manually manage congestion if needed in real time.

Prior to implementation of the current market in 2009, the tariff had explicitly prohibited circular scheduling. The prior explicit language used was removed as it was not applicable to the new market design. Some stakeholders assert that the tariff’s definitions that support the current market provide ambiguous guidance on the permissibility of circular scheduling. Among the outcomes of this proposal, the ISO will address the identified ambiguities by clarifying the tariff, including the definition of “wheeling”.

FERC has determined that circular schedules can violate FERC rules prohibiting market manipulation, such as when circular schedules are used to profit by ostensibly relieving congestion. For example, in 2004, FERC stated that circular scheduling constituted market manipulation and would be covered under its Market Rule 2, which was the predecessor to FERC’s current rule prohibiting market manipulation (18 C.F.R. § 1c.2).

Stakeholders have generally agreed that a circular schedule transaction involving a single scheduling coordinator can be avoided and therefore should be addressed. However, a contentious point in the stakeholder process has been whether and how a market rule would apply to transactions involving multiple scheduling coordinators. Stakeholders assert that blind trading through exchanges and brokers can unintentionally lead to scheduled transactions with the same source and sink. One

stakeholder recommendation was that the ISO should monitor, track, and publicly report the volume of multi-party circular schedules for approximately one year, after which the issue of implementing a settlement rule for such schedules could be revisited.

Observing that the ISO already has historical e-tag data, the ISO reviewed all e-tags received during a recent one-year period, from September 2010 through August 2011. After filtering out schedules that would not be subject to or affected by the proposed settlement rule, this analysis focused on 3086 hourly e-tags that may be affected. Among these schedules, 85% involved multiple SCs, and 95% of these had their export at a single intertie. A single scheduling coordinator was the exporter in 59% of the schedules, of which 93% returned to ISO as imports by two counterparties on other interties. Although many of the remaining schedules by other scheduling coordinators do have patterns that can be expected from trades through exchanges and brokers, as commercial trading unintentionally produces transactions with the same source and sink, these percentages reflect activity that does not appear random.

PROPOSAL

The ISO's proposal for addressing circular schedules removes incentives for intentional schedules through settlements. Although some stakeholders have suggested rejecting transactions with the same source and sink, this could impact other market participants by affecting total ISO intertie schedules. If a circular schedule were providing counter-flow on a congested transmission constraint, rejecting the circular schedule would leave the remaining schedules above the allowable scheduling limit and would require them to be reduced.

Objective criteria that the ISO can reasonably apply are:

- A schedule or set of schedules (as shown on an e-tag) creating a closed loop between the ISO controlled grid and one or more other balancing areas, which do not have a source and sink in separate balancing areas, will be subject to a settlement rule except as follows:
 - Closed loops that include a transmission segment on a (direct current) intertie, because such a schedule directly changes power flows on the network and can mitigate congestion within the ISO controlled grid,
 - Delivery from a pseudo-tie generating unit to the balancing areas with which it becomes associated, or
 - Delivery of energy during an "isolated intertie" or "open intertie" condition, as described in the Business Practice Manual for Market Instruments, or wheeling through the ISO controlled grid from a source outside the ISO controlled grid, to a load outside the transmission and distribution system of a

participating transmission owner when the only means to serve such load is through the ISO controlled grid.

- This proposal does not test whether a schedule is in a counter direction over a congested inter-zonal interface, as the tariff definitions did prior to the current market. In practical terms, the settlement rule will only have a financial consequence if the import price is higher than the export price.

To remove the incentive for submitting such schedules, the ISO will settle the import to the ISO at the lower of the locational marginal prices at the scheduling points for the import and export, for the market in which they are scheduled. In addition, if a schedule subject to the settlement rule has contributed to day ahead congestion on an intertie, any congestion revenue rights payments resulting from this intertie congestion would be rescinded. This recognizes that a schedule sourcing and sinking in the same balancing area could contribute to congestion, and thus increase the payments for congestion revenue rights that a market participant could hold.

In some cases a review of a complex set of e-tags, such as individual but not linked e-tags, reveals circular scheduling practices intended to circumvent the explicit provisions concerning the circular schedules. Such behavior may be referred to FERC through market monitoring.

POSITIONS OF THE PARTIES

Stakeholder comments reflect differing opinions between segments of the affected parties. The comments are summarized below and a stakeholder matrix is attached for your reference.

Load serving entities support market limits as represented by the proposal. Pacific Gas and Electric supports limiting circular schedules and removing circular scheduling incentives for both single- and multi-SC schedules. Southern California Edison supports the proposal, and requests ongoing monitoring. Northern California Power Agency recommends explicitly prohibiting circular scheduling.

A number of power marketers and generation owners support limits on single-SC schedules, but many of these oppose applying the settlement rule to multi-SC schedules. Brookfield Energy, Calpine, Citigroup, JP Morgan, Morgan Stanley, and Shell Energy support restrictions for single-SC circular schedules, but oppose limits affecting multiple SCs. Western Power Trading Forum sees no need to clarify the existing market rules. Powerex believes the proposed measures are appropriate and necessary for both single- and multi-SC schedules, and further would reject e-tags from single SCs.

MANAGEMENT RECOMMENDATION

Management requests approval of this proposal for a settlement rule, as set forth in this memo, to provide objective criteria for:

1. Identifying circular schedules involving a single scheduling coordinator that are not otherwise allowable in the ISO's market rules, and
2. The treatment in settlements that will result from such schedules.

However, due to lack of demonstrated operational impact of the low level of observed schedules with a source and sink in the same balancing area, involving multiple scheduling coordinators, Management recommends the application of the proposed settlement rule to schedules that source and sink in the same balancing area involving multiple scheduling coordinators be deferred. These revisions and new tariff provisions will clarify what is now an area of uncertainty for market participants, while limiting the growth of scheduling practices that could pose operational issues for the ISO. If approved by FERC, the ISO will target the summer 2012 effective date initially using manual business processes and automation by fall 2013.