

# Memorandum

**To:** ISO Board of Governors

**From:** Keith Casey, Vice President, Market & Infrastructure Development

**Date:** May 11, 2011

**Re:** **Decision on Data Release Phase 3**

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*This memorandum requires Board action.*

## EXECUTIVE SUMMARY

Data Release Phase 3 is the final phase of an initiative established in 2009 to address the release of data that will help market participants better understand market results and more effectively participate in the ISO market. Data Release Phase 1 addressed market participants request for information regarding ISO's management of transmission constraints in market operations. Data Release Phase 2 addressed market participants request for convergence bidding information release. The proposal for phase three addresses the release of additional market model data and anticipated system conditions, outlined below, which provides additional market transparency to better understand market outcomes. This data release should result in increased confidence in the ISO market and provide market participants with additional information to guide their participation in the ISO market and thereby increase overall market efficiency. Under this proposal, the following data would be published:

1. Day-ahead load distribution factors;
2. Day-ahead, hour-ahead, and real-time shift factors for binding constraints;
3. Transmission limits enforced in the day-ahead and real-time markets;
4. An aggregated generation outage report for each trading hub;
5. Congestion revenue rights auction bid data; and
6. A wind and solar forecast for each trading hub.

The stakeholder initiative resolved concerns raised by the ISO and stakeholders which previously prevented the release of additional market model data. The result of the stakeholder process is a proposal which allows the release of data to improve market efficiency while balancing the concerns of various stakeholders.

The ISO established a stakeholder working group to identify information enhancements to be addressed by this phase of the initiative. First, the working group identified certain high priority data that will require policy and tariff changes. In this proposal, Management proposes that the Board approve these changes. Second, enhancements to existing systems that provide market results data to stakeholders were identified. These items do not require tariff changes and will be addressed through a market results redesign project that will begin this year. Third, going forward Management recognizes that requests for new data will be ongoing beyond the conclusion of this stakeholder initiative and an efficient process to address these requests is necessary. Therefore, the ISO will establish an ongoing process to provide an avenue for market participants to submit new data requests and for the ISO to review, respond and implement these future requests.

*Moved, that the ISO Board of Governors approves the proposal regarding Data Release Phase 3, as described in the memorandum dated May 11, 2011; and*

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

## **DISCUSSION AND ANALYSIS**

Following a robust stakeholder process that evaluated information requests, Management proposes six new data release elements. A number of these data release elements will be released with a time lag. The time lag is necessary to address potential concerns regarding grid security and potential market manipulation that could occur if the data were released immediately. We also propose to establish an ongoing process to address future data requests.

The ISO plans to complete implementation of the new data release elements by Fall 2012. If a data release element requires a non-disclosure agreement, the information will be published securely through CAISO Market Results Interface (CMRI). All other public data will be published on the ISO public website or Open Access Same-Time Information System (OASIS).

### ***Release of load distribution factors***

Load distribution factors are used to distribute load forecasts for defined regions to individual load nodes which are utilized in the market. Load distribution factors are based on load patterns from seasonal base cases. Market participants highlighted several market efficiency benefits of releasing this data. In particular, the data will allow market participants to more accurately analyze and simulate ISO markets, which will enable them to help identify and

improve modeling issues, evaluate the impact of bids on a particular constraint, and better understand the outcomes of convergence bids.

Management proposes that the actual day-ahead load distribution factors be released subject to a 3-day lag. The load distribution factors for each of the default load aggregation points underlying nodes will be provided for all nodes which are not a single customer node (i.e., all of the load at that location belongs to a single customer). For single customer nodes, the nodes will be aggregated into a single load distribution factor for each of the default load aggregation points to avoid releasing the customer's confidential information. Since the data is treated as critical energy infrastructure information, the actual load distribution factors will be made available under a non-disclosure agreement.

### ***Release of binding shift factors***

Shift factors reflect the relative impact an energy injection or withdrawal at one location on the network has on the energy flows at another location. Shift factors can allow market participants to more accurately analyze and simulate ISO markets. In addition, as part of the convergence bidding market enhancement, a rule was implemented to reclaim congestion revenue rights revenue if the market participant used convergence bids to increase the value of its congestion revenue rights holdings. This congestion revenue rights settlement rule determines the impact of convergence bids on congestion revenue rights holdings by utilizing the shift factors of the network model. By releasing day-ahead, hour-ahead, and real-time shift factors, market participants will be able to validate the congestion revenue rights settlement rule calculation and perform related market analysis.

Management proposes to release day-ahead shift factors, hour-ahead shift factors, and the real-time shift factors for binding constraints subject to a 3-day lag. Since the data is treated as critical energy infrastructure information, the binding shift factors will be made available under a non-disclosure agreement.

### ***Release of transmission limits enforced***

The transmission facilities that comprise the ISO transmission network have specific limits on the maximum power flow they can reliably accommodate. These limits change over time due to temporary equipment outages or other factors, and such changes can significantly impact market outcomes. Market participants requested access to changes in transmission limit assumptions. This information will enable them to update their base market models to more accurately reflect system conditions for the day-ahead and real-time markets. This request was also identified through the Data Release Phase 1 initiative, in which the ISO made available additional reports to market participants. At that time, the ISO committed to address additional release of this information in the subsequent phase 3 of this initiative.

Management proposes to release transmission limits enforced in the day-ahead and real-time markets subject to a 3-day lag. Since the data is treated as critical energy infrastructure information, the transmission limit enforced will be made available under a non-disclosure agreement.

### ***Release of aggregated generation outage data***

Generation outages, whether planned or unplanned, can significantly impact market outcomes. Market participants requested additional generation outage data to provide the ability to better align the base market model with actual system conditions. The release of generation specific data would not be allowed under existing confidentiality requirements; however, aggregated generation data is allowed.

Management proposes to release aggregated generation outage data at 5:00 a.m. prior to the day-ahead market. The data will be aggregated for each trading hub and will include the current day plus 29 additional days. The data will identify three fuel categories: thermal, hydro, and renewable. Thermal resources will include gas, oil, nuclear, biomass, and waste. Hydro will include all hydro resources. The renewable category will include solar, wind and geothermal.

If Management determines during implementation that the level of aggregation does not adequately protect individual resources data from being released, the ISO will further consolidate data. In order to protect commercially sensitive data, the ISO may combine trading hubs or fuel categories as necessary and will communicate changes to stakeholders via the implementation process.

### ***Release of congestion revenue rights auction bid data***

Several stakeholders requested the release of congestion revenue rights auction bid data similar to what is currently released for energy and ancillary services bids and provided by other ISOs. The release of congestion revenue rights bid data will allow market participants to understand why bids did or did not clear the auction, which will help them to modify bidding behavior in future congestion revenue rights auctions.

Management proposes to release monthly bid data 90 days after the close of the monthly auction and annual bid data in quarterly increments after the relevant quarter has passed. The ISO will not release the name of the market participant that submitted any particular bid.

### ***Release of wind and solar forecasts***

In the Renewable Integration: Market and Product Review initiative, the benefits of releasing variable energy resources forecast data has been highlighted as a means to drive day-ahead and real-time price convergence. Currently, the ISO receives meteorological data from a subset of variable energy resources which is then provided to the ISO's forecasting service provider. The forecast is not included in the day-ahead and real-time markets, but the forecasted production from variable energy resources allow market participants to assess the impact on system conditions of variable energy resources supply. The availability of forecast data to all market participants will enable a more efficient market for both physical and financial players.

Currently, the ISO receives meteorological data from approximately 1,200 MW of wind and solar resources, or 25-30% of the total wind and solar resources currently interconnected to the ISO grid. Only resources under the participating intermittent resource program and new eligible intermittent resources are required to provide meteorological data in order to participate in the ISO market. As a result, the forecast data provided will include only resources which provide meteorological data and not the total fleet of wind and solar resources. In addition, the definition of variable energy resources includes other resource types such as small hydro, geothermal, and biomass which will not be included in the forecast.

Since meteorological data is only received from a small subset of wind and solar resources, the initial forecasts will have large errors. However, as new wind and solar resources come on line, the quality of trading hub forecasts will improve, as a larger percentage of the fleet would then provide the necessary meteorological data.

Management proposes to release an aggregated day-ahead forecast by hour at 5:00 a.m. prior to the day-ahead market, an hourly aggregated forecast at 105 minutes prior to the operating hour, and the actual aggregated energy production the following day by hour. Since these resources are generation resources, the forecast will be aggregated by trading hub. The forecast data will also include separate values for wind and solar.

#### ***Authority to suspend data release items***

The ISO Department of Market Monitoring recommended that the ISO have tariff authority to delay or suspend data release elements if the publication results in anti-competitive or detrimental impacts to market efficiency. Southern California Edison and Pacific Gas & Electric support DMM's recommendation. Management plans to include in its tariff filing, language that explicitly provides that data release may be suspended or delayed if market power mitigation concerns ever materialize.

#### ***Market Results Redesign Project***

The Data Release Phase 3 working group identified many enhancements to how the ISO delivers existing data to market participants. The ISO plans to commence the Market Results Redesign Project in 2011 which will be led by the ISO Business Solutions group. The project will address enhancements to existing systems that provide data to market participants such as open access same-time information system. Key areas of enhancements will include developing a common reporting interface, establishing software functionality that would meet documented business use cases in terms of usability and performance, and incorporating new reports.

### ***Establishment of ISO process to address future data release enhancements***

Management recognizes that the requests for new data from market participants will be ongoing. Therefore, the ISO will establish an interactive process with stakeholders to collect, prioritize, and implement future data release requests. Additionally, we will establish an internal team that will include staff from legal, policy, business, and IT to evaluate submitted data requests on a regular basis. Finally, we will utilize the market performance and planning forum held approximately every six weeks to update stakeholders on implementation activities and provide stakeholders the opportunity to comment on prioritization of data release requests.

The on-going process will be a collaborative effort between market participants and the ISO to identify, prioritize and implement data release enhancements. The ISO believes that similar to the business practice manual change management process, both the ISO and stakeholders will identify enhancements and the process for prioritizing and implementing enhancements will be transparent. In addition, the process will be sufficiently robust so if policy or tariff issues arise, they can be efficiently addressed without establishing a separate stakeholder initiative.

### **POSITIONS OF THE PARTIES**

Stakeholders support the proposed release of additional market model data, congestion revenue rights bid data, generation outage data, and wind and solar forecasts, as this data will allow stakeholders to more efficiently participate in the ISO market.

While the proposed data release items in this initiative address many high priority areas, stakeholders are still requesting further enhancements and additional data to be released. Thus, it is important to stakeholders that the ongoing data release process established by the ISO efficiently address additional data release requests already identified and future enhancements that will arise. A more detailed stakeholder matrix is attached for reference.

### **MANAGEMENT RECOMMENDATION**

The new data elements and information release policy provisions will significantly increase market transparency and enhance market participants' understanding of market results and outcomes. Management recommends that the Board approve the data release proposal as discussed in this memorandum. If approved, the ISO intends to implement the data release items by fall 2011.