Memorandum

To: ISO Board of Governors

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

Date: September 5, 2013

Re: **Decision on FERC Order No. 764 market changes intermittent resource transitional protective measure**

This memorandum requires Board action.

EXECUTIVE SUMMARY

The ISO Board of Governors approved the ISO's FERC Order No. 764 Market Changes proposal on May 15, 2013. The proposed market design enhancements orient the ISO real-time market to better support the participation of intermittent resources. The new real-time market design will provide a superior framework for scheduling intermittent resources and limit their exposure to real-time energy imbalance changes associated with their uncontrollable variability. As a result, the need for the protection against exposure to hourly charges for uninstructed imbalance energy offered under the current participating intermittent resource program is largely eliminated.

At the May 2013 Board meeting, some resource owners maintained that they could be disadvantaged under the new market design because of their inability to respond to dispatch instructions. In response, the Board directed Management to investigate whether limited protective measures for intermittent resources are appropriate, and to make a recommendation at the September 2013 Board meeting. Management is proposing a limited protection measure as described in the memorandum to provide older technology renewable resources a three year transition period so that they can effectively operate under the new market structure. The transition period will provide time for resources that may be unduly burdened by the new market structure to negotiate any necessary changes to their power purchase agreements or in the case of qualifying facilities that will be rolling off of their current PURPA contract, to enter into new purchase power agreements to manage their imbalance energy price risk.

Management proposes the following motion:

> ***Moved, that the ISO Board of Governors approves the proposed intermittent resource transitional protective measure, as described in the memorandum dated September 5, 2013; 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

Background

Under the current participating intermittent resource program (PIRP), intermittent resources are scheduled and settled as follows:

- A PIRP resource self-schedules its forecast output for each hour in the real-time market at 90 minutes before the beginning of the hour. This self-scheduled amount is deemed to be instructed imbalance energy and is settled in each hour at the average 5-minute locational marginal price (LMP).

- Deviations from these hourly forecasts are deemed to be uninstructed imbalance energy, are netted over each month, and the net deviation is settled at the output-weighted average of the 5-minute LMPs.

Under the new FERC Order No. 764 market design, intermittent resources will be scheduled and settled as follows:

- Resources will be scheduled at their forecast output in 15-minute intervals at 37.5 minutes prior to the start of each interval. These forecast-based scheduled amounts will be settled in each 15-minute interval at 15-minute market LMPs.

- Deviations from these 15-minute forecasts and 5-minute dispatches will be instructed imbalance energy and will be settled at 5-minute market LMPs.

- Differences between the 5-minute dispatch and the metered energy will be uninstructed imbalance energy and will be settled at 5-minute market LMPs.

- The new market design also provides for intermittent resources to submit economic energy bids so that a resource can be dispatched to a level less than its maximum forecast output in either the 15-minute or 5-minute market if the LMP is less than the resource's bid. This feature will be important when prices are negative due to system over-generation conditions because under these conditions resources are charged for their energy production.

Some resource owners maintain that their resources would be disadvantaged under the new market design because they lack the ability to respond to dispatch instructions. However, this concern is largely addressed under the new market structure by scheduling these resources closer to the operating hour at a 15 minute granularity. This significantly reduces these resources' exposure to 5-minute prices and cost allocations to uninstructed imbalance energy.

To gauge the potential impact of the new market design on non-dispatchable wind and solar resources, Management analyzed the settlement effect of the FERC Order No. 764 settlement on a sampling of resources and compared this to the PIRP settlement under the current market. The analysis shows that these resources generally will earn more revenue in the real-time market under the new market design than under the current market design including PIRP settlement.[1]

Proposed protective measure

Although most intermittent resources should be better off under the new market structure, Management proposes that certain resources have the option of selecting a transitional protective measure that consists of a real-time market settlement that is similar to the existing settlement under PIRP. Specifically, a resource under the proposed protective measure would be settled as follows:

- An hourly schedule will be set using a 90-minute in advance forecast.
- The resource's hourly schedule based on its 90-minute in advance forecast will be settled at the simple average of the 5-minute LMPs.
- The deviations between the resource's actual energy output and the hourly schedule will be netted over each month. This amount will be settled at the output-weighted average of 5-minute LMPs over the month.

As under the current PIRP rules, resources under the transitional protective measure settlement would be required to provide meteorological data for the independent forecast service provider to develop a resource-specific forecast. Therefore, qualifying facilities that currently do not provide meteorological data would be required to complete the PIRP certification process to be settled under the protective measure upon expiration of their contract. Only after the PIRP certification process is completed will a resource be settled according to the proposed protective measure.

Qualifying criteria

As described above, the proposed FERC Order No. 764 market design provides a superior framework for scheduling intermittent resources and provides incentives for intermittent resources to reduce their output in response to grid conditions as signaled by market prices. This response is vital to the ISO's ability to integrate the large amounts of intermittent resources needed to meet California's environmental goals.

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[1] During the stakeholder initiative the ISO analyzed six representative resources; the analysis is available at http://www.caiso.com/Documents/Web%20conference%20May%201,%202013. In addition, the ISO has provided this analysis for additional resources at the request of the resource and its load serving entity counterparty.

Consequently, to not undermine these incentives, and to address only situations in which a market participant would be unduly burdened during the transition to the new market design, the proposal is that only resources that meet the following limited criteria would be eligible for the transitional protective measure:

1. More than 50% of the resource is composed of old technology that is unable to curtail output without significant investment.

    - Dispatch, control, and telemetry or metering needs only would not qualify

    - Turbine replacement would qualify

2. Resource is responsible for real-time energy settlement under their current power purchase agreement (PPA).

    - Qualifying facilities 20 MW or less are not eligible because they can enter into new standard offer agreements insulating them from imbalance energy settlement.

    - Any bilateral contract (i.e. PPA) must specify that the resource is directly or indirectly responsible for costs based on ISO market real-time energy settlement.

3. During the term of the transition period, the resource owner agrees to seek modifications to their power purchase agreement or a new power purchase agreement that address their imbalance energy settlement and/or will take steps to upgrade the resource so that it can respond to ISO dispatch instructions.

4. The resource owner must sign an affidavit certifying the resource meets all criteria (items 1 thorough 3) above.

Duration

Management proposes the duration of the transitional protective measure will be three years from the effective date of the tariff provisions implementing the FERC Order No. 764 market design changes or until a new PPA is signed for the resource, whichever comes first.

Allocation of Protective Measure Costs and Revenues

The difference between the real-time market settlement of any resource under the protective measure and the settlement that would have occurred under the FERC Order No. 764 market design will be allocated in the same manner as the existing PIRP settlement, which is to net negative deviations. This amount may be a payment or a cost to net negative deviations.

The protective measure and cost allocation add to the complexity and costs of implementing the FERC Order No. 764 market design changes. Because of the need to comply with FERC Order No. 764 in a reasonably timely manner, the ISO cannot delay the implementation of the market design changes that are necessary to accommodate the 15-minute scheduling required by the Commission's order. Therefore, while the ISO will strive to provide these financial adjustments soon after the start of the new market, the resource's settlement will be trued up in later settlements after go live. Any adjustments will be subject to the FERC interest rate, as already provided in the ISO tariff.

Process to seek approval of protective measure

Management proposes that resources, meeting all eligibility requirements above, must request transitional protective measures within 30 days of the effective date of FERC Order No. 764 market design changes. If a resource will meet the eligibility requirements within the three year transition period, the resource must provide the date that resource meets the eligibility requirement and also request protective measures within the 30 days of the effective date of FERC Order No. 764 market design changes. Resources that qualify and select the protective measure settlement must remain under that settlement for the entire three year transition period or until they enter into a new power purchase agreement, whichever comes first. Management will post on its website the requests received and the disposition of the requests.

POSITIONS OF THE PARTIES

Stakeholders remain divided on the appropriateness of providing a protective measure to older technology intermittent resources, the proposed scope of the protective measures, and the cost allocation.

CalWEA argues that the proposed protective measures will be ineffective in addressing older technology intermittent resources' exposure to FERC Order No. 764 market design changes. They are concerned that the eligibility requirements are unduly restrictive and the duration undermines the utility of the protective measure.

Load serving entities question the need for the protective measure given that the FERC Order No. 764 market design changes were develop to facilitate the integration of variable energy resources. Load serving entities support a firm expiration date, limiting the program to resources physically unable to follow dispatches, and allowing eligible resources to fully opt-in or opt-out of the protective measure. However, they remain opposed to the cost allocation, expanding eligibility to resources that do not have a contract with a load serving entity and allowing another request window.

CONCLUSION

Management respectfully requests Board approval of the intermittent resource transitional protective measure as described in this memorandum. The protective measure will provide a transition period for a resource meeting the criteria to be able to adapt to the new market, either contractually or by developing the capability to respond to dispatch instructions.