Memorandum

To: ISO Board of Governors

From: Anna McKenna, Interim Vice President, Market Policy and Performance

Date: March 17, 2021

Re: **Decision market enhancements for summer 2021 readiness proposal**

This memorandum requires Board of Governors action.

EXECUTIVE SUMMARY

Management proposes a set of market enhancements to prepare for this upcoming summer, and mitigate concerns arising from last summer's heatwave and consequent load shedding. These enhancements are focused on improving incentives for supply to be available during tight conditions. Management also proposes targeted interconnection process changes to expedite bringing additional supply on-line by summer 2021.

Management believes these enhancements are feasible for both the ISO and market participants to implement by summer 2021. Management plans to address potential longer-term changes in upcoming stakeholder processes. While this initiative has had a fast timeline, stakeholders have provided valuable input shaping Management's proposal.

The first proposed change is to provide imports a make-whole payment under specified tight supply conditions if settlement at ISO market prices does not cover the energy bid price. This change will strengthen incentives to offer imports to the real-time market during tight supply conditions by eliminating the risk a supplier could be paid less than its bid price.

The second proposed change is to price energy based on the market's energy bid cap when the ISO is arming load to meet the ISO balancing authority area's contingency reserve requirement. This change will price energy more appropriately under tight supply conditions, which will incentivize suppliers to offer supply during such conditions.

The third proposed change is to allow market participants to specify whether a reliability demand response resource is eligible to be dispatched in hourly blocks, fifteen-minute intervals, or five-minute intervals. This change would also include these resources in the ISO's real-time pre-dispatch process, and allow "discrete-dispatch" reliability demand response resources to set ISO market prices. This change will reduce the

need to for ISO operators to dispatch these resources manually, better allow the market to reflect the energy bid price of reliability demand response resources, and improve market incentives during tight supply conditions.

In addition to these market enhancements, Management also proposes changes to the ISO's resource interconnection request process to expedite bringing more supply on-line by summer 2021. Management proposes to remove a cap on behind-the-meter expansions and allow the ISO to temporarily award deliverability to new resources.

The market enhancements for summer 2021 readiness stakeholder process resulted in two other changes that Management presented to the EIM Governing Body at their March 10, 2021 meeting. First, Management proposed a change to address the Western Energy Imbalance Market's resource sufficiency evaluation to better ensure each balancing authority area participates in the EIM with sufficient resources. Second, Management proposed a change to address a market modeling issue regarding energy interchanges between EIM balancing authority areas and the ISO balancing authority area that caused operational issues during last summer's tight conditions.[1] The EIM Governing Body approved these changes under their primary approval authority and they are included on the Board of Governors' consent agenda.

The EIM Governing Body also voted to provide a verbal advisory input to the Board of Governors, to support the scarcity pricing element of the proposal. This will allow for the pricing of energy based on the market's energy bid cap when the ISO is arming load to meet the ISO balancing authority area's contingency reserve requirements.

The *market enhancements for summer 2021 readiness* stakeholder process is also considering enhancements to the market parameters for managing load, export and wheel through scheduling priorities for the ISO balancing authority area. Management plans to bring these changes to the EIM Governing Body under its advisory role and to the Board of Governors for approval during special meetings scheduled in April 2021.

Management proposes the following motion:

> ***Moved, that the ISO Board of Governors approves the market enhancements for summer 2021 readiness proposal, as described in the memorandum dated March 17, 2021; 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 proposal described in the memorandum, including any filings that implement the overarching initiative policy but contain discrete revisions to incorporate Commission guidance in any initial ruling on the proposed tariff amendment.***

[1] These changes are described in the March 3, 2021 memorandum to the EIM Governing Body posted at https://www.westerneim.com/Documents/Decision-on-Market-Enhancments-for-Summer-2021-Readiness-Memo-Mar2021.pdf.

BACKGROUND

A historic heat wave affected the western United States for several days in mid-August 2020, causing energy supply shortages that led to rotating power outages in the ISO balancing authority area on August 14 and 15. The *Final Root Cause Analysis: Mid-August 2020 Extreme Heat Wave* report documents these events.[2] The ISO initiated this expedited initiative in response to these events and is committed to implementing measures to prevent supply shortages in advance of summer 2021.

PROPOSAL

The Management proposes the following enhancements.

Make-Whole Payment for Hourly Imports

Management proposes to provide for bid price make-whole payments for hourly block economic imports dispatched by the real-time market during tight supply conditions. These changes will better incentivize suppliers to offer import supply to the ISO balancing authority area during tight supply conditions when it can especially need imports.

Suppliers may at times have insufficient incentives to offer hourly block economic import supply into the real-time market because the ISO's import settlement rules do not guarantee payment at a price at least equal to a submitted import bid's price. The ISO's real-time market clears hourly block economic import bids based on hour-ahead scheduling process prices, but pays these imports the fifteen-minute market price. Consequently, an import supplier may receive a fifteen-minute market price less than its submitted import bid price.

This issue does not exist for fifteen-minute dispatchable import offers scheduled in the fifteen-minute market consistent with their bid price. However, suppliers have less incentive to offer fifteen-minute imports because they are not assured of being scheduled for the entire hour.

This risk of receiving less than bid price can be a disincentive for suppliers to offer imports to the real-time market. Importantly, this risk can be greater during tight supply conditions. During these conditions, ISO operators tend to take out-of-market measures to ensure reliability that tend to lower fifteen-minute market prices relative to hour-ahead scheduling process. These measures include upward adjustments to the load forecast used in the hour-ahead scheduling process and out-of-market import purchases. These measures can suppress fifteen-minute market prices relative to hour-ahead scheduling process prices because the fifteen-minute market uses a lower load forecast and/or has access to more supply.

[2] California Independent System Operator, California Public Utilities Commission, and California Energy Commission. Final Root Cause Analysis: Mid-August 2020 Extreme Heat Wave. January 13, 2021.

Providing strong incentives to offer import supply during tight supply conditions is important because the *Final Root Cause Analysis* noted the ISO balancing authority area needed energy in excess of its resource adequacy capacity during the summer heat wave. Suppliers consider the risk of receiving less than their bid price when deciding whether to offer imports into the ISO real-time market or sell the energy elsewhere in the west's bilateral market.

Consequently, Management proposes a make-whole payment for real-time market hourly block economic imports during specified tight supply conditions. The ISO would define tight system conditions as hours which:

- The ISO issues an alert notice by 3 p.m. the day before an operating day that states the ISO anticipates an operating reserve deficiency for specified hours; or

- The ISO issues a warning notice or emergency notice during an operating day that states the ISO anticipates or is experiencing an operating reserve deficiency during specified hours.

Management proposes to apply the make-whole payment for imports only during these tight supply conditions. Under routine conditions, the existing market structure that schedules hourly block imports and exports in the hour-ahead scheduling process and settles them at fifteen-minute market prices has important benefits such as minimizing uplift charges to load and incenting fifteen-minute market dispatchable imports and exports. During shortage conditions, the additional uplift is justified to ensure the ISO can access imports needed to serve its load.

Import amounts incremental to any import amount scheduled in the day-ahead market are eligible for the proposed make-whole payment. Imports scheduled in the day-ahead market would not be eligible for a make-whole payment because the day-ahead market ensures imports are paid at least their bid price. Also, additional real-time market supply that results when the real-tie market reduces an export scheduled in the day-ahead market would be eligible for a make-whole payment. The ISO would calculate make-whole payments hourly as the positive difference between each price segment of a supplier's submitted bid price and the hourly average fifteen-minute locational marginal price.

Management proposes to allocate the make-whole payment costs to measured demand, which includes metered demand and exports. Exports are interchange transactions at ISO intertie scheduling points and do not include EIM transfers.

Management proposes not to provide make-whole payments for imports that are not delivered or for day-ahead market exports reduced in the hour-ahead scheduling process whose settlement prices are adjusted under the existing "hour-ahead scheduling process reversal rule"

Enhance Market Pricing During Tight Supply Conditions

Management proposes an enhancement to improve market pricing when system conditions are very tight and ISO s operators are in the process of "arming load" to meet the balancing authority area's contingency reserve requirement by using resources previously providing contingency reserves to serve load.

This enhancement will price energy from generation the ISO is releasing from contingency reserves to serve load at the applicable energy bid cap. The applicable energy bid cap will be either $1,000/MWh or $2,000/MWh as determined under the ISO's *FERC Order No. 831 – Import Bidding and Market Parameters* proposal that is currently under consideration at FERC. Under the *FERC Order No. 831 – Import Bidding and Market Parameters* proposal, the hard energy bid cap increases from $1,000/MWh to $2,000/MWh when there is a cost-verified resource-specific energy bid greater than $1,000/MWh or the ISO-calculated "maximum energy bid price" is greater than $1,000/MWh.

ISO system operators "arm load" by contacting the utility distribution companies and having them configure their systems to immediately shed certain portions of their load in the event the ISO experiences an unexpected supply loss. This allows the ISO real-time market to dispatch supply resources for energy the market was previously reserving for contingency reserves. Under current market rules, prices can decrease in this situation because the energy bids supply resources submit in the real-time market can be below the current real-time market price. This was an issue during last summer's heat events.

Management's proposed pricing rule appropriately reflects the ISO is short supply under these conditions. This will improve incentives for additional real-time supply, including imports, to be available. It will also improve incentives for supply scheduled in the day-ahead market to be available in the real-time market because suppliers will have to buy back such supply in the real-time market at the bid cap if it is unavailable. Finally, the proposal will improve incentives for load to more fully schedule in the day-ahead market because it could be faced with higher real-time prices.

Reliability Demand Response Resource Dispatch

Management proposes market enhancements to improve market pricing when reliability demand response resources are dispatched. Reliability demand response resources are resources participating in investor-owned utility reliability-based and emergency-triggered demand response programs. The ISO can only dispatch them in response to emergency conditions. These resources must bid into the real-time market at prices from $950/MWh to $1,000/MWh.

The *Final Root Cause Analysis* indicated ISO system operators manually dispatched these resources outside of the market optimization. Because these resources could not set market prices, market prices were suppressed even though there was supply scarcity.

Management proposes enhancements so the real-time market will dispatch reliability demand response resources more optimally, and reflect their bids in market prices. Currently, reliability demand response resources are only dispatched in five-minute granularity real-time dispatch and potentially can only set five-minute real-time dispatch prices. Management proposes to allow market participants to specify whether the ISO market will dispatch a reliability demand response resource in hourly blocks, fifteen-minute intervals, or five-minute intervals. These are the same dispatch options afforded proxy demand resources, the other demand response model the ISO market uses. These options better reflect the resources' operational characteristics and will set prices more appropriately.

In addition, Management proposes changes that will enable reliability demand resources for which the market participant has selected the "discrete dispatch" option to set ISO market prices. The discrete dispatch option allows a reliability demand response resource to be dispatched only for a specified quantity of energy. This change will enable the market to model these resources as being flexibly dispatched when it is setting prices so they can potentially be a marginal resource and set prices.

Fifteen- and five-minute dispatchable reliability demand response resources would be settled at fifteen-minute market and five-minute real-time dispatch prices, as applicable, and can set fifteen-minute market prices. Allowing reliability demand response resources to set fifteen-market prices will better reflect the corresponding tight conditions in the market, improving market incentives.

Reliability demand response resources under the hourly dispatch option would be settled at fifteen-minute market prices, but they will be ineligible to set fifteen-minute market prices.

Fifteen- and five-minute dispatchable reliability demand response resources will be eligible for bid cost recovery, but hourly dispatchable resources will not be eligible.

These changes should reduce ISO operators' manual dispatch of reliability demand response resources because the market will more optimally dispatch them, and they will be included in the real-time market's real-time pre-dispatch process, which looks out as far ahead as one hour and forty-five minutes. Currently, reliability demand response resources are only included in the five-minute real-time dispatch, which looks out only one hour. This longer look ahead will allow the market to dispatch reliability demand response resources more optimally because it can consider the time required to start them up and their minimum run time.

Interconnection Enhancements

Management proposes changes to the ISO's resource interconnection request process to expedite bringing more supply on-line by summer 2021 and going forward. These changes apply to the ISO's "independent study" process. The two features of the existing independent study rules can limit new resource interconnections in time for this this summer. First, the ISO's behind-the-meter expansion process for transmission-connected resources caps expansions to the lesser of 125 percent of the existing

capacity or 100 MW. Second, the independent study process was designed to prevent "queue-jumping" for deliverability,[3] and as such, requires independent study interconnection customers to participate as "energy only" until they can participate in the next cluster deliverability assessment. Deliverability means the ability to delivery energy to load during peak conditions, and is a fundamental requirement to provide resource adequacy capacity. Under the current rules, even if deliverability is available and unused, the ISO cannot allocate it to independent study interconnection customers on a temporary basis.

Management's first proposed change removes the cap on behind-the-meter expansions. The ISO's experience with behind-the-meter resources has led Management to conclude the cap is not necessary. Moreover, most expansions today are battery additions to variable energy resources, which are less likely to present the issues for which the cap was designed. Removing the cap will allow variable energy resources to hold excess energy when demand is low and then discharge that energy during the system peak.

Management's second proposed change allows the ISO to temporarily award available interim deliverability. This will allow load-serving entities to shore up portfolios in tight summer months and maximize use of available transmission capacity. Independent study interconnection customers can avail themselves of the deliverability until (1) the interconnecting resource for which the delivery network upgrades are being constructed comes online, or (2) the independent study interconnection customer can participate in the next deliverability assessment, receive its own permanent allocation, and have its delivery network upgrades constructed. This will ensure independent study interconnection customers can use available deliverability if they come online quickly, while preventing queue jumping for deliverability.

STAKEHOLDER POSITIONS

Stakeholders generally support Management's proposal for an import bid make-whole payment. Idaho Power Company (Idaho Power) objected to the cost-allocation approach in the draft final proposal that would have allocated a share of the costs to EIM transfers out of the ISO. Idaho Power noted that even though an import can support a transfer, the impetus for the make-whole payment is to incent supply for ISO balancing authority area reliability. In response, Management revised its proposal to remove EIM transfers from the cost allocation.

Most stakeholders support Management's proposal to release reserves to the market at bid cap prices for use as energy priced when the ISO arms load to meet its contingency reserve requirements. They recognize the proposal produces market prices that better reflect system conditions. Pacific Gas & Electric and Southern California Edison are concerned the proposal may incentivize suppliers to physically withhold supply in the real-time market. Southern California Edison maintains the proposal should not be implemented without system market power mitigation measures in-place. CPUC staff

[3] Deliverability means the ability to delivery energy to load during peak conditions. Deliverability generally is a fundamental requirement to provide resource adequacy capacity.

believes this change should be considered in connection with more comprehensive market changes.

Management believes its proposal provides the appropriate price signal to reflect tight supply conditions, which should incent more supply to be available when most needed. Additionally, the resource adequacy rule requirement to submit energy bids addresses physical withholding concerns. Management does not believe system market power mitigation is needed in conjunction with this change because the resulting prices are unaffected by submitted supply resource bid prices.

Stakeholders generally support management's proposal to improve reliability demand response resource's dispatch and to better reflect it in market pricing. California Large Energy Consumers Association is concerned the changes were developed too rapidly and may result in dispatches that do not respect reliability demand response resources' notification times and use limitations. Management notes its proposed changes will result in the market better reflecting these constraints. Calpine believes hourly dispatchable reliability demand response resources should be able to set fifteen-minute market prices. Management believes they should not set the price in the fifteen-minute market because they cannot respond with fifteen-minute granularity, similar to hourly-block imports, which also cannot set fifteen-minute market prices.

Stakeholder's support management's proposals to enhance the ISO's interconnection process as a way to expedite more capacity for summer 2021.

The ISO Department of Market Monitoring and the Market Surveillance Committee support Management's proposal as a reasonable short-term measure to incent additional supply.[4] The Market Surveillance Committee's written opinion, adopted on March 8, 2021, is enclosed as Attachment A.

Attachment B summarizes stakeholder comments in more detail.

CONCLUSION

Management requests the Board of Governors adopt the proposed enhancements to (1) provide an import make-whole payment, (2) improve market pricing under tight supply conditions, (3) improve reliability demand response dispatch and pricing, and (4) expedite the interconnection process. These enhancements will better ensure supply is available to the ISO market in tight supply conditions during summer 2021.

[4] The Department of Market Monitoring did not provide comments on the proposed interconnection rules enhancements. The Market Surveillance Committee's written opinion did not address the reliability demand response dispatch and interconnection enhancements.