



Market Enhancements for Summer 2021 Readiness discussion

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ISO PUBLIC

Initiative is developing various measures to enhance summer 2021 readiness

1. Export, load, and wheeling priorities
2. EIM coordination and resource sufficiency test review
3. Import market incentives during tight system conditions
4. Real-time scarcity price enhancements
5. Reliability demand response dispatch and real-time price impacts
6. Management of storage resources during tight system conditions
7. System market power mitigation
8. Other items

Stakeholder comments

- The ISO received comments from a large segment of its stakeholders and is carefully considering all the input as it prepares its draft final proposal. Highlights include:
 - Stakeholders are concerned with the feasibility and prudence of making all the changes proposed in the straw proposal this summer and encouraged ISO to prioritize
 - CA IOUs opposed giving exports backed by non-RA a higher priority than ISO load
 - Stakeholders outside of CA opposed giving ISO load a higher priority than wheels
 - Broad spectrum of stakeholders oppose minimum state of charge requirement as previously proposed in the Resource Adequacy Enhancements
- Many stakeholders agreed ISO should ensure the accuracy of the capacity and resource sufficiency evaluation this summer, while others strongly believe ISO should also change the consequences of failing the tests
- Suppliers and EIM entities opposed implementing system market power mitigation and disagreed that linking it to limited pricing enhancements is a balanced approach, while load serving entities support implementing the system market power mitigation whether or not scarcity pricing is implemented

Export priorities – definitions

- **PT (price taker) export** – a self-scheduled export with a designated supporting resource with sufficient non-RA generation bid in the market
- **LPT (lower price taker) export** – a self-scheduled export that does not designate a supporting resource with sufficient non-RA generation bid in the market
- **Economic export** – an export with economic bid
- **RUC export** – any export deemed physically feasible in the residual unit commitment process

Summary of changes to straw proposal – Export and load priorities (1 of 2)

- PT Export and Load have same priority in IFM/RUC/RTM
 - Same priority means the same penalty price is enforced in the market optimization
- PT Export must be contracted with internal non-RA supply
 - Tariff rule that if SC allows a resource to be designated it is affirming that the resource is contracted by the exporter
 - Tariff rule that SC is attesting that the resource is currently capable to support an hourly block schedule in the operating hour equal to the PT export quantity

Summary of changes to straw proposal – Export and load priorities (2 of 2)

- Designated resources should have similar rules as RA resources
 - Designated resources must participate in RUC by submitting RUC availability bid equal or greater than the PT export quantity
 - Designated resources have a real-time must-offer obligation in order to maintain PT export priority in real-time
- If designated resource does not receive a RUC award, SC must re-bid export in real-time market to maintain PT priority
- If designated resource receives a RUC award, real-time bids will be generated if the SC does not re-bid the export

Summary of changes to straw proposal – Wheel through scheduling priorities

- Wheel through self-schedules will receive PT Export priority
 - Competes with ISO in accessing import RA but improves on current implementation which results in effectively higher priority than PT Export and Load
 - Imports cannot be a designated resource to support a PT Export. SC must use wheel bid if sourcing from an import
- After straw proposal, evaluated if existing OBAALSE process could be leveraged to establish PT priority but determined not implementable by summer 2021
- Longer term: develop process to provide PT priority only to wheels that have prepaid the wheeling access charge (WAC)

Current and proposed scheduling priorities

Post September 5

- **Day-Ahead Market (RUC)**
 1. SS Wheel
 2. PT Export & Load
 3. LPT Export
 4. Economic Export & Economic Wheel
- **Real-Time Market**
 1. SS Wheel
 2. RUC Export
 3. PT Export & Load
 4. LPT Export
 5. Economic Export & Economic Wheel

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- **Day-Ahead Market (RUC)**
 1. PT Export, Load & SS Wheel
 2. LPT Export
 3. Economic Export & Economic Wheel
- **Real-Time Market**
 1. PT Export, Load & SS Wheel
 2. RUC Export w/o Gen
 3. LPT Export
 4. Economic Export & Economic Wheel

Many stakeholders agreed ISO should pursue limited changes to resource sufficiency evaluation this summer while others strongly believe ISO needs to pursue more extensive changes

- Stakeholders broadly supported the proposed summer 2021 refinements, including the addition of “uncertainty” within the bid range capacity test
 - Flexible ramping product demand curve may lead to BAAs failing more often and sooner
 - Support indicates entities foregoing the economic decision to relax uncertainty procurement is an unacceptable form of leaning
- Some EIM participants think we should pursue more comprehensive resource sufficiency evaluation (RSE) enhancements for this summer while others believe these fundamental RSE design questions should be more carefully addressed through an RSE-specific stakeholder initiative
- EIM transfers alone do not reflect leaning:
 - Consider interplay with counter flow exports or base schedules
 - Transfers based on voluntary economic availability

Summary of changes – Resource sufficiency evaluation

- Will not include offline capacity in resource capacity calculation for meeting the capacity test requirement
 - Principle of not including offline capacity involves complex implementation details
 - No way to account for unit commitment change that were made because of economics of EIM transfers. Exclusion of this capacity may result in excessive failures
- Comprehensive resource sufficiency evaluation discussion on the consequences of failing the tests will be considered in a subsequent stakeholder process

Summary of changes – Import market incentives

- Propose option 2 that provides real-time market imports with a make whole payment during system warnings and alerts
 - Incentivizes import offers because it ensures they are paid at least bid price
 - Minimal concern about overlapping import/export with make whole payment because real-time exports are unlikely during system warnings and alerts
- Ruling out option 1 that would pay/charge the higher of HASP or FMM price
 - Using HASP prices is not feasible to implement by summer 2021 because it would require extensive system and process changes
 - Concern about how option 1 interacts with virtual bids

Propose to provide make-whole payment for real-time market hourly block economic imports during tight system conditions

- Tight system conditions defined by pre-established and public operator alerts/warnings
 - Day-ahead alert notice anticipating operating reserve deficiencies OR real-time warning notice indicating operating reserve deficiencies or emergency stages 1-3
- Allocates uplift costs similar to real-time bid-cost recovery, i.e. to load, exports, and EIM transfers out
- Both incremental real-time imports and day-ahead scheduled exports that the real-time market reduces would be eligible for the make-whole payment

Summary of changes – Real-time scarcity pricing enhancements

- Propose to defer consideration of scaling real-time market's penalty prices relative to a \$2000/MWh power balance constraint penalty under tight system conditions
 - Approach would require extensive effort to work out complex interactions
 - Other summer 2021 proposals are higher priority
 - RUC will ensure sufficient supply to meet demand
- Continue discussion on this topic in the planned comprehensive scarcity pricing initiative

Real-time scarcity pricing enhancements proposal

- Release reserves at bid cap price when short on contingency reserves from generation and resorting to arming load to meet contingency reserve requirement
 - Bid cap will be determined through 831 policy currently under consideration at FERC
- Will send stronger price signals for the need for more supply

System market power mitigation

- Uncouple system market power from contingency reserve proposal
- Will further consider system market power mitigation after the Summer 2021 initiative is complete
- Department of Market Monitoring Q3 report shows that while prices remained competitive, even during the heat wave, there are increasing instances of pivotal supplier test failures

Reliability demand response resources – proposed changes

- Propose to expand bid dispatchable option from 5 min to 5, 15 and 60 min
 - Treat 60 min resources as price takers in RTPD
- Propose to enable 5, 15 min discrete RDRR to set the price in FMM by treating the resource as discrete in the scheduling run but continuous in the pricing run

Reliability demand response resources – barriers to market dispatch

- RDRR is modeled as a resource but is reflected as less load
 - System operations must currently manually account for dispatch with load forecast adjustments to avoid double counting RDRR load reductions
 - Proposed solution is to incorporate the RDRR dispatch into load forecast
- RDRR observed performance often differs significantly from credited/dispatched amounts
 - Proposed solution is to allow operators to adjust the amount of RDRR dispatch that is included in the load forecast

Reliability demand response resources – change impacts

- Dispatching RDRR in RTPD will lead to more efficient market results since the RTPD horizon covers the resources startup + min run time
- Allowing for 5, 15, and 60 minute dispatchable allows RDRR to reflect their actual capabilities
 - 5 min RDRR will be able to set-price in RTD
 - 15 min RDRR will be able to set-price in FMM
 - 60 min RDRR will not be able to set price in FMM. However allowing the market to optimally dispatch them should clear additional imports in HASP
 - This aligns with how PDR are treated

ISO continues to develop a proposal to manage state of charge for storage resources

- ISO expects about 1800 MW of storage capacity available to provide resource adequacy by August
 - There are about 400 MW of storage available for RA capacity currently
 - Most new storage will have an on-line date of August 1
- The minimum state of charge (MSOC) requirement will ensure state of charge availability for evening peak periods
 - Remains a component of the RA Enhancement initiative
 - Will request authority prior to summer 2021, instead of this fall
- This requirement will not be permanent
 - Request a 2-year sunset period for proposed MSOC requirement
 - ISO will develop a new, market based, tool to procure state of charge from storage resources and provide compensation for that product
 - A new energy storage enhancements initiative will begin in Q2 2021

The Resource Adequacy Enhancements draft final will include several modifications to reduce overall impact on storage resources

- Requirement will only be applied on days where needs are critical
 - ISO will use the results from the RUC process to determine days when minimum state of charge will be required
 - Minimums will only be imposed on days when RUC is infeasible
 - Operators will have further opportunity to drop requirements in real-time if critical grid conditions do not materialize in real-time
- Requirements are designed to reduce impact to storage
 - A set of 'critical' hours will be determined by operations, which will be the only hours that the requirement is imposed for
 - Minimums will be imposed on hours directly prior to discharge schedules, and not in hours earlier in the day
- ISO is committed to reporting on when the minimum state of charge is used and may estimate impacts
- Final proposal will be published on Tuesday, February 16, 2021