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# Task Team Recommendation Summary Template

| Task Team | Question/Statement of Issue | Recommendation or Proposed Options | Key Assumptions or Decision Factors |
|---|---|---|---|
| MOT-1 | RTO West Forecast | Forecast will be released prior to DA Process | 1) Provide Information to market<br>2) Advisory only<br>3) Occurs ~ 5:00 am or similar time |
| MOT-2 | A/S Requirements for Self-provider/Self-tracker | Estimated requirement for upcoming day released with forecast<br>• By area location<br>• Self-provider/Self-tracker requirements must be within specified area or face the cost of transmission to the specified area | 1) Advisory information only to provide SC's with RTO West's operational expectations<br>2) SC's have best the information about their own load and unit operations and are responsible for their own scheduling and bidding decisions |
| MOT-3 | Schedule and Bid Submission | SC's will use a "single point of entry" to submit balanced schedules and bids (quantities by node or zone with nodal distribution)<br>• Energy schedules<br>• A/S self-provision schedules<br>• Bids to supply IOS and energy for congestion clearing<br>• Losses | 1) The "single point of entry" will be a electronic form/table for transmitting all relevant information.<br>2) All schedules and bids will specify quantity and location.<br>3) Self-provided A/S schedules are implicit transmission reservations for resources provided out of area requirements. |

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| MOT-4 | RTO West Runs Security Constrained Dispatch for Day-Ahead Process | RTO West posts results and notifies selected bidders:<br>• Prices: (a) Nodal energy prices and (b) Locational prices for capacity products<br>• Quantities Selected: (a) Energy for congestion redispatch, (b) The IOS needed to supply A/S to those choosing to purchase from RTO West and (c) Replacement Reserve purchases needed for secure next-day operation (when RTO forecast > SC schedules). | 1) Clearing price auction used for energy.<br>2) Nature of locational capacity prices (area or possibly nodal) will be determined by RTO West<br>3) Bilateral schedules without bids and self-provided A/S are assigned zero price for generation and infinite price for loads for setting clearing prices.<br>4) Capacity and energy prices are co-optimized, i.e. the congestion effects of A/S provision are included in capacity and energy prices.[1] |
| MOT-5 | Adjustments for Limit Schedules When Prices Exceed SC's Submitted Limit | **Two Options:**<br>1) Two Interactions: RTO West posts results of first run of security constrained dispatch, parties with limit schedules notified if schedule was eliminated, adjustment schedules accepted and RTO West makes second run which are financially binding.<br>2) Single Run: The posted day-ahead prices are financially binding and limit schedules are not used. | 1) Limit schedules if used are restricted to single point of injection to single point of withdrawal.<br>2) If limit schedules are allowed, all bidders should be permitted submit adjustment schedules so that first pass is a trial run only. Concern expressed that possible "game" may be played with initial submission. |

[1] Bids are selected that minimize the cost of providing RTO West's total energy and AS requirements, subject to constraints defined by transmission system limitations.

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| MOT-6 | Day-Ahead Settlement | • Payments to IOS providers and redispatch energy providers at posted prices.<br>• Congestion Charge = (Withdrawals times Price at withdrawal node) minus (Injections time Price at injection node)<br>• Congestion Hedge Credit = nodal prices applied to FTO/CTRs | Results of Day-Ahead Process are financially binding on market participants. |
| MOT-7 | Schedule Adjustment Period | RTO West accepts bids and schedule for Real-Time Market:<br>• Energy injections and withdrawals<br>• A/S changes<br>• Bids to supply A/S or Real-Time energy<br><br>RTO West will maintain a continuous stack of A/S bids to acquire any added capacity produce needed due to loss of units, higher that expected load, replacement of spin, etc. | 1) Starts with posting of Day-Ahead results (~16:00)<br>2) Ends at the cut off time "H-x" (i.e. x minutes prior to the beginning of the hour ending H)<br>3) H-x will be established by RTO West based on technology, minimum notice times, etc.<br>4) Bids submitted are valid until accepted or until withdrawn prior to H-x. |
| MOT-8 | RTO West Runs Security Constrained Dispatch for Day-Ahead Process | • Selected suppliers notified.<br>• Advisory prices posted prior to beginning of dispatch interval.<br>• Actual prices calculated at close of interval and posted.<br>• Price detail is the same as for Day-Ahead. | 1) Starts at H-x<br>2) Real-Time dispatch interval is 10 minutes (subject of further seams discussions)<br>3) Least-cost dispatch optimization used. |

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| MOT-9 | Real-Time Operations Balancing Energy | Dispatch instructions issued to suppliers (generators or demand), which may be a permissive, price signal. | All energy settled as single ste of nodal prices. |
| MOT-10 | Real-Time Operations Regulation | Direct electronic AGC signal from RTO West to SC to unit with metered response to RTO West. | ~ 2 second control interval |
| MOT-11 | Real-Time Operations Load Following | Message to alter set point from RTO West to SC with message confirmation and SC to unit with metering signal to RTO West. May be a permissive, price signal. | ~ 2 minute control interval |
| MOT-12 | Ancillary Service Products | RTO West acquires Integrated Operations Services (IOS) from suppliers to supply Ancillary Services (A/S) to SCs through the following markets:<br>• Regulation<br>• Load Following<br>• Reserve-Spinning<br>• Reserve-Supplemental<br>• Replacement Reserve (i.e. Forecast>Schedule)<br>• Day-Ahead Redispatch Energy<br>• Real-Time Balancing Energy | **Stage 2 IOS → A/S Mapping:**<br>• IOS(Reg. Freq. Response) →A/S(Regulation)<br>• IOS(Ld. Follow Up/Down) →A/S(Load Following)<br>• IOS(Spinning Reserve) → A/S(Reserve-Spinning)<br>• IOS(Non-Spinning eserve) →A/S(Reserve Supplemental)<br>• IOS(Replacement Reserve) →A/S(Replacement Reserve)<br>• ISO(Congestion Redispatch) →A/S(Day-Ahead Redispatch)<br>• ISO(Supplemental Energy) →A/S(Real-time Balancing Redispatch)<br>See IOS Table details on qualifications and type bids. |

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| MOT-13 | Prices in A/S Markets | "Rational Buyer" method applied to A/S, i.e., RTO West has the right to select a bid to provide any one product in place of a bid to supply any other product, if the following conditions are met:<br>1) If doing so would reduce the total cost of procuring RTO West's A/S;<br>2) If the resource selected is qualified to supply the product;<br>3) If the bidder has not specifically prohibited RTO West from selecting that resource to provide that product. | • The price for higher quality product is greater than or equal to all lower quality products.<br>• The quality of services from highest quality down is:<br>1) Regulation<br>2) Load Following<br>3) Reserve-Spinning<br>4) Reserve-Supplemental<br>5) Replacement Reserves<br>• All energy is settled at single set of nodal prices. |
| MOT-14 | Participation in A/S Markets | Entities offering capacity or energy to RTO West for A/S, Congestion Redispatch or Real-Time Balancing Market must be technically and commercially qualified. | 1) Conformance to same standards of technical performance and commercial accountability for all suppliers<br>2) Non-contracted parties are not qualified suppliers in RTO West markets. |
| MOT-15 | Load Zones | Customers may request creation of Load Zones which may be used for both scheduling and settlements. | Zonal price is load weighted average of the zones' nodal prices. See White Paper. |
| MOT-16 | Trading Hubs | RTO West will create Trading Hubs in response to customer requests for nodes with similar topological and price response characteristics. | Hub price is fixed-weighted average of the hubs' nodal prices. See White Paper. |

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| MOT-17 | Imbalance Penalties | • The consequences of imbalance or insufficient self-provided A/S are payment of the clearing prices for services. Short schedules also face share of Replacement Reserve cost.<br>• RTO West will design penalty structure to address potential behavior problems | 1) A two-tier structure will be substituted for Stage 2 imbalance trading (i.e., penalties are triggered when system problem exists and applied to those who are off in the same direction of system penalty)<br>2) Frequency and scale of errors will be considered in RTO West's penalties. |
| MOT-18 | Costs of Failure to Supply IOS | Cost of replacing unsupplied IOS charged to the party failing to meet commitments for selected bids. | Detail provisions to be developed by RTO West |
| MOT-19 | Penalties Failure to Supply IOS | To be defined by RTO West and may include disqualification with probation before re-qualification to supply. | Detail provisions to be developed by RTO West |
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