

---DRAFT#1.1---

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   | <ol style="list-style-type: none"> <li>1) Provide Information to market</li> <li>2) Advisory only</li> <li>3) Occurs ~ 5:00 am or similar time</li> </ol>  |
| MOT-2     | A/S Requirements for Self-provider/Self-tracker | <p>Estimated requirement for upcoming day released with forecast</p> <ul style="list-style-type: none"> <li>• By area location</li> <li>• Self-provider/Self-tracker requirements must <del>be within specified area or face the cost of transmission to the specified area</del> <u>meet all technical requirements. Even if requirements satisfied and forecasted AS self-provided, the actual settlement of AS is against nodal DA prices for AS.</u></li> </ul> | <ol style="list-style-type: none"> <li>1) Advisory information only to provide SC's with RTO West's operational expectations</li> <li>2) SC's have <u>the best</u> <del>the</del> information about their own load and unit operations and are responsible for their own scheduling and bidding decisions</li> <li>3) <u>Differences in costs between estimated AS required to self-provide and the actual AS required by any SC at the end of the DA process are the financial responsibility of the SC.</u></li> </ol> |
| MOT-3     | Schedule and Bid Submission                     | <p>SC's will use a "single point of entry" to submit <u>balanced</u> schedules and bids (quantities by node or zone with nodal distribution)</p> <ul style="list-style-type: none"> <li>• Energy schedules</li> <li>• A/S self-provision schedules</li> </ul>   | <ol style="list-style-type: none"> <li>1) The "single point of entry" will be a electronic form/table for transmitting all relevant information.</li> <li>2) All schedules and <u>price</u></li> </ol>   |

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|           |   | <ul style="list-style-type: none"> <li>• Bids to supply IOS and energy for congestion clearing (<a href="#">incs and decs</a>)</li> <li>• <a href="#">The bids to supply IOS can reflect a bid to supply capacity and a bid to supply energy.</a></li> <li>• Losses</li> </ul>   | <p>bids will specify quantity and location.</p> <p>3) Self-provided A/S schedules are implicit transmission reservations for resources provided out of area requirements.</p>   |
| MOT-4     | RTO West Runs Security Constrained Dispatch for Day-Ahead Process       | <p>RTO West posts results and notifies selected bidders:</p> <ul style="list-style-type: none"> <li>• <u>Prices</u>: (a) Nodal energy prices and (b) Locational prices for capacity products</li> <li>• <u>Quantities Selected</u>: (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 <a href="#">load forecast</a> &gt; <a href="#">sum of the SC's load schedules</a>).</li> </ul> | <ol style="list-style-type: none"> <li>1) Clearing price auction used for energy.</li> <li>2) Nature of locational capacity prices (area or possibly nodal) will be determined by RTO West</li> <li>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.</li> <li>4) Capacity and energy prices are co-optimized, i.e. the congestion effects of A/S provision are included in capacity and energy prices.<sup>1</sup></li> </ol> |
| MOT-5     | Adjustments for Limit Schedules When Prices Exceed SC's Submitted Limit | <p><b>Two Options:</b></p> <ol style="list-style-type: none"> <li>1) <u>Two Interactions</u>: RTO West posts results of first run of security constrained dispatch, parties with limit schedules notified if schedule</li> </ol>   | <ol style="list-style-type: none"> <li>1) Limit schedules if used are restricted to single point of injection to single point of withdrawal.</li> <li>2) If limit schedules are</li> </ol>  |

<sup>1</sup> 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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|           |                             | <p>was eliminated, adjustment schedules accepted and RTO West makes second run which are financially binding.</p> <p>2) <u>Single Run</u>: The posted day-ahead prices are financially binding and limit schedules are not used.</p>   | <p>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.</p>   |
| MOT-6     | Day-Ahead Settlement        | <ul style="list-style-type: none"> <li>• Payments to IOS providers and redispatch energy providers at posted prices.</li> <li>• Congestion Charge = (<u>Sum of the Withdrawals times Prices at withdrawal nodes</u>) minus (<u>Sum of the Injections times Prices at injection nodes</u>)</li> <li>• Congestion Hedge Credit = nodal prices applied to FTO/CTRs</li> </ul>   | <p>Results of Day-Ahead Process are financially binding on market participants.</p>   |
| MOT-7     | Schedule Adjustment Period  | <p>RTO West accepts bids and schedule for Real-Time Market:</p> <ul style="list-style-type: none"> <li>• Energy injections and withdrawals <u>that facilitate a balanced schedule in RT.</u></li> <li>• A/S changes</li> <li>• Bids to supply <u>IOSA/S</u> or Real-Time energy <u>from resources that have not already been selected in the DA market.</u></li> </ul> <p>RTO West will maintain a continuous stack of A/S bids to acquire any added capacity producte needed due to loss of units, higher that expected load, replacement of spin, etc.</p> | <ol style="list-style-type: none"> <li>1) Starts with posting of Day-Ahead results (~16:00)</li> <li>2) Ends at the cut off time “H-x” (i.e. x minutes prior to the beginning of the hour ending H)</li> <li>3) H-x will be established by RTO West based on technology, minimum notice times, etc.</li> <li>4) Bids submitted are valid until accepted or until withdrawn prior to H-x.</li> </ol> |

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| MOT-8     | RTO West Runs Security Constrained Dispatch for Day-Ahead Process | <ul style="list-style-type: none"> <li>• Selected suppliers notified.</li> <li>• Advisory prices posted prior to beginning of dispatch interval.</li> <li>• Actual prices calculated at close of interval and posted.</li> <li>• Price detail is the same as for Day-Ahead.</li> </ul>   | <ol style="list-style-type: none"> <li>1) Starts at H-x</li> <li>2) Real-Time dispatch interval is 10 minutes (subject of further seams discussions)</li> <li>3) Least-cost dispatch optimization used.</li> </ol>  |
| 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 step 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  | <p>RTO West acquires Integrated Operations Services (IOS) from suppliers to supply Ancillary Services (A/S) to SCs through the following markets:</p> <ul style="list-style-type: none"> <li>• Regulation</li> <li>• Load Following</li> <li>• Reserve-Spinning</li> <li>• Reserve-Supplemental</li> <li>• Replacement Reserve (i.e. Forecast&gt;Schedule)</li> <li>• Day-Ahead Redispatch Energy</li> </ul> | <p><b>Stage 2 IOS → A/S Mapping:</b></p> <ul style="list-style-type: none"> <li>• <u>IOS</u>(Reg. Freq. Response) → <u>A/S</u>(Regulation)</li> <li>• <u>IOS</u>(Ld. Follow Up/Down) → <u>A/S</u>(Load Following)</li> <li>• <u>IOS</u>(Spinning Reserve) → <u>A/S</u>(Reserve-Spinning)</li> <li>• <u>IOS</u>(Non-Spinning Reserve) → <u>A/S</u>(Reserve Supplemental)</li> <li>• <u>IOS</u>(Replacement Reserve) → <u>A/S</u>(Replacement Reserve)</li> </ul> |

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|           |                              | <ul style="list-style-type: none"> <li>• Real-Time Balancing Energy</li> </ul>   | <ul style="list-style-type: none"> <li>• <u>ISO</u>(Congestion Redispatch)<br/>→ <u>A/S</u>(Day-Ahead Redispatch)</li> <li>• <u>ISO</u>(Supplemental Energy)<br/>→ <u>A/S</u>(Real-time Balancing Redispatch)</li> </ul> <p>See <a href="#">IOS Table</a> details on qualifications and type bids.</p>   |
| MOT-13    | Prices in A/S Markets        | <p>“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:</p> <ol style="list-style-type: none"> <li>1) If doing so would reduce the total cost of procuring RTO West’s A/S;</li> <li>2) If the resource selected is qualified to supply the product;</li> <li>3) If the bidder has not specifically prohibited RTO West from selecting that resource to provide that product.</li> </ol> | <ul style="list-style-type: none"> <li>• The price for higher quality product is greater than or equal to all lower quality products.</li> <li>• The quality of services from highest quality down is:               <ol style="list-style-type: none"> <li>1) Regulation</li> <li>2) Load Following</li> <li>3) Reserve-Spinning</li> <li>4) Reserve-Supplemental</li> <li>5) Replacement Reserves</li> </ol> </li> <li>• All energy is settled at single set of nodal prices.</li> </ul> |
| MOT-14    | Participation in A/S Markets | <p>Entities offering capacity or energy to RTO West for A/S, Congestion Redispatch or Real-Time Balancing Market must be technically and commercially qualified.</p>   | <ol style="list-style-type: none"> <li>1) Conformance to same standards of technical performance and commercial accountability for all suppliers</li> <li>2) Non-contracted parties are not qualified suppliers in RTO West markets.</li> </ol>  |

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| 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 <a href="#">White Paper</a> .  |
| 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 <a href="#">White Paper</a> .  |
| MOT-17    | Imbalance Penalties             | <ul style="list-style-type: none"> <li>• 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.</li> <li>• RTO West will design penalty structure to address potential behavior problems</li> </ul> | <ol style="list-style-type: none"> <li>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) <a href="#">See White Paper</a></li> <li>2) Frequency and scale of errors will be considered in RTO West's penalties.</li> </ol> |
| MOT-18    | Costs of Failure to Supply IOS  | Cost of replacing unsupplied IOS ( <a href="#">and financial penalty</a> ) 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   |
|           |                                 |  |   |