

**ATTACHMENT M**  
**DESCRIPTION OF RTO WEST**  
**CONGESTION MANAGEMENT MODEL**

**RTO West Congestion Management Proposal - Overview**

To meet the requirements of Order 2000, RTO West proposes a “flow-based physical rights” congestion management model. RTO West will manage congestion on flowpaths, which are RTO grid facilities that are expected to have commercially significant amounts of congestion. On these flowpaths, RTO West will manage congestion primarily by issuing transmission rights. The filing utilities have identified an initial list of flowpaths. The initial flowpaths will be listed in the documents submitted with the filing utilities’ Stage 2 filing, along with initial transmission rights allocation and procedures for adding or removing flowpaths as changes are warranted.

RTO West will determine the total transfer capability (TTC) for each flowpath and the amount of transmission rights to issue. Customers that wish to schedule across flowpaths will be required to have transmission rights (primarily FTRs or other transmission rights such as RTRs, NTRs, and non-converted rights, set-aside described below) before the schedule is accepted. Congestion is therefore mostly self-limited by the need to acquire such transmission rights.

Most of the congestion costs associated with a flowpath are borne by the path users through the costs to purchase transmission rights and through the curtailment of these rights under certain circumstances, such as extended outages of RTO grid facilities. Any other congestion (“residual congestion”) is managed by the RTO through the RTO’s redispatch of resources, repurchase of rights, and as a final resort, curtailment of schedules.

RTO West proposes a “flow-based” model in which flow distribution factors (FDFs) will be used to determine how schedules are deemed to flow between congestion zone sources and sinks on flowpaths (thereby requiring transmission rights). Many preexisting ownership and contract rights are defined on a contract path basis. Before the tariff filing, these rights will be translated (mapped) from their now existing contract paths onto flowpaths. If the filing utilities find that translation to flowpaths seriously impairs the ability of rights holders to utilize or be compensated for their existing transmission rights, the provisions of the Stage 2 filing will include a transition period to move from the contract path to the flow-based congestion management model.

This congestion management system is intended to align well with those operating or proposed in other ISOs and RTOs in the Western Interconnection. Any residual differences will be addressed through RTO West’s joint activities with other RTOs and control areas.

**Transmission Rights**

A Firm Transmission Right (FTR) is an entitlement to schedule one megawatt of electric power and energy on a flowpath in a particular direction for a particular hour. In order to meet the characteristics described above, FTRs will be clearly identified and tradable. All FTRs provide the same class of service.

Initially, rights to use the RTO West grid will be granted to holders of preexisting contracts and load service obligations as described below (Preexisting Rights section). Remaining FTRs will be auctioned by RTO West on an annual, seasonal, monthly and daily basis as conditions allow. FTRs may be traded bilaterally or via non-affiliated exchanges. Attributes of FTRs on each flowpath will be described on a Term Sheet, including factors such as major planned outages for the upcoming year and historical frequency and duration of reductions to the flowpath capacity.

Recallable Transmission Rights (RTRs) are associated with FTRs that were not scheduled during the day-ahead scheduling process, and are auctioned daily. RTRs may be recalled up to some point (perhaps 120 minutes) before delivery hour. After that point, FTRs and RTRs are identical.

Non-Firm Transmission Rights (NTRs) are created by the release of unused capacity associated with non-converted contracts, capacity scheduled for the delivery of operating reserves, and capacity associated with counterflows during the day-ahead scheduling process. NTRs may be recalled at any time by the RTO should the underlying capacity become unavailable.

For monthly and sub-monthly FTR auctions and all RTR and NTR auctions, a single round, market clearing price auction will be used, with the market clearing price defined as the highest losing bid. For FTR releases longer than a month, several auction methods are still being studied including a multiple round discrete, market clearing price auction and a single round market clearing price auction. The proposed method will be described in the filing utilities' filing that includes a proposed form of RTO West Tariff.

### **Preexisting Rights**

Holders of preexisting ownership and contract rights will be provided comparable rights to use the RTO West transmission facilities as described in the Transmission Operating Agreement (TOA). FTRs will be granted to the participating transmission owners (1) to replace their firm rights under pre-existing transmission agreements it has agreed to suspend, (2) to use its transmission facilities to serve the load service obligations of the participating transmission owners not covered by the pre-existing transmission agreements and (3) to use its transmission facilities to serve its obligations under bundled power sale, exchange, coordination or other obligations not covered by a pre-existing transmission agreement. To satisfy obligations the participating transmission owners have under transmission agreements that the customer decides not to convert to RTO service, RTO West, under rules to be determined, shall either grant FTRs sufficient to meet such obligations or withhold transmission capacity sufficient for RTO West to accept schedules under the noncovered agreements.

Any remaining capacity will be auctioned by the RTO with the proceeds assigned to reduce transfer payments, costs shifts and Company Rates as described in the Company Rates proposal.

Rights for Load Service Obligations and for nonconverted transmission agreements providing for service to loads are determined based on non-coincidental peak and off-peak loads from 1998-2000. During the Company Rate Period (through December 14, 2011), additional FTRs will be made available without charge to each participating transmission owner and each transmission

customer that has converted to RTO West service, as needed to meet the following year's reasonable load growth projections, up to the amount of (1) any unencumbered transmission capability of the transmission facilities of the applicable participating transmission owner plus (2) any unencumbered transmission capability of each of the other participating transmission owners, but only to the extent that pre-existing transmission agreements provided for service to meet such load growth..

In order to achieve reasonable comparability with preexisting rights, FTRs will be based on two feasible dispatches (peak and off-peak) for each month. Additional dispatches will be used where preexisting rights provide for use in both directions on a flowpath.

An initial listing of transmission rights, including FTRs and non-converted rights set-asides, granted on each initial flowpath to holders of pre existing contracts and load service obligations will be included in the stage 2 filing. If during the initial allocation of rights it is determined that rights exceed flowpath capacity thus requiring a reduction of rights, FTRs and set-asides for non-converted rights will be treated comparably.

Transmission customers of the Participating Transmission Owners who choose to suspend their agreements and take service from RTO West will be granted rights on terms comparable to those described above.

### **Scheduling**

The RTO West scheduling process is designed to maximize opportunities for efficient decentralized decision-making on both access and pricing issues by market participants while providing for a secure and reliable grid. RTO scheduling protocols accommodate continuous secondary markets operating as close to real time as possible.

Scheduling Coordinators (SCs) are the single point of contact between RTO West and its eligible customers (wholesale loads, direct access retail loads and generators that use the grid). Every eligible customer who wishes to use the RTO grid must have an SC (one and only one SC per meter). Any eligible customer can become a SC or can designate an SC to represent the eligible customer. SCs must be certified by the RTO and meet technical and financial requirements.

SCs must submit balanced schedules – specifying injections, withdrawals, transmission rights, types and quantities of Ancillary Services to be self-provided, and other information – to the RTO in order to gain access to the RTO Grid. SCs may also submit Proposed Schedules – schedules that do not include all of the transmission rights (FTRs and RTRs) – to the RTO for consideration pursuant to the rules described below.

Several scheduling processes and settlement will take place:

1. One and Two Day ahead Scheduling Process (Pre-Schedules)
2. Post Day Ahead – Schedule Adjustment Period
3. Real Time – Operating Hour
4. Settlement

## 1. Day-Ahead Scheduling Activities

The Day-Ahead Scheduling Process (DASP) is the primary process through which all uses of the grid – including the scheduling of energy, capacity, transmission rights and Ancillary Services – takes place.

SCs holding FTRs initially submit an intent to schedule their FTRs. Any unused FTRs are auctioned by the RTO as RTRs. SCs then submit schedules to the RTO. An SC may, at its option, submit its schedule in two parts: a Balanced Schedule and a Proposed Schedule. A Proposed Schedule is deemed to be a bid for NTRs at a stated price (in the absence of a submitted bid dollar value, the RTO will deem the SC's bid price to be zero dollars). This allows for a schedule to be submitted without transmission rights if the customer believes there will be no congestion on a flowpath.

The RTO will not become involved in the process of allocating or brokering transmission rights to SCs. If the sum of the NTRs that the RTO can make available after Balanced Schedules have been submitted is less than the sum of the NTRs required by SCs who submitted Proposed Schedules, the RTO will reject the Proposed Schedules. The RTO will allow those SCs whose Proposed Schedules were rejected to acquire the necessary rights or alter those schedules and resubmit them as Balanced Schedules.

## 2. Post Day Ahead – Schedule Adjustment Process

The Schedule Adjustment Process (SAP) is an ongoing, continuous process, within which the RTO shall process SCs' requests for schedule changes as they are received by the RTO, on a first-come, first-served basis. This process begins at the close of the Day-Ahead Scheduling Process and continues until a reasonable time prior to the start of the Delivery Hour. During this period the SCs may adjust their portfolios (demands, supply and trades) and submit schedule changes (incremental schedules) with accompanying transmission rights to the RTO.

Throughout the Schedule Adjustment Process, the RTO will do such duties as:

- a. continuously update load forecasts and grid ancillary services requirements,
- b. receive and validate Balanced Schedules from SCs,
- c. calculate loading on flowpaths and other grid facilities,
- d. release unused capacity (as RTRs and NTRs),
- e. determine if any residual congestion exists and eliminate such congestion through the use of redispatch bids and/or buyback of FTRs,
- f. develop the Operating Plan for the upcoming day (including determining the resource stacks for Balancing Energy and Operating Reserves).

An SC's request to change generating unit output levels, to re-designate resources which provide Ancillary Services, or to change import or export schedules will be subject to RTO approval, which shall be granted provided that: (i) there is sufficient time for the RTO to evaluate the impacts of the proposed change; and (ii) the proposed change would neither increase congestion nor otherwise create a grid security problem. The RTO will receive, validate and incorporate continuous adjustments to schedules submitted by SCs as long as no new congestion is created,

update the RTO's operational models and operating plans, respond to contingencies which result in decreases in transfer capability or otherwise create congestion, and procure any additional Ancillary Services.

### 3. Real Time – Operating Hour

SCs that have been selected to provide Ancillary Services will respond to control signals from the RTO. SCs may make arrangements, bilaterally or through market exchanges, for real-time changes to schedules and submit them to the RTO for approval.

The RTO will receive, validate and incorporate continuous adjustments to schedules submitted by SCs as long as no new congestion or operational problems are created, receive real-time metering data and respond to energy needs through dispatch of the Balancing Energy stacks, and clear congestion using redispatch procedures, including the dispatch of resources in the Balancing Energy stacks.

At Operating Hour, all NTRs will be placed in a single stack regardless of when they were acquired. If NTRs need to be recalled by the RTO, the RTO will recall them in the order of lowest bid price to highest bid price. Through this mechanism, the RTO will have established a queue for recall – rather than a requirement to cut all NTRs pro rata – and SCs will have obtained the ability to establish NTRs of higher and lower recall quality.

### 4. Settlement Activities

The RTO will receive validated settlement-quality data, including metered injections and withdrawals, and transmission and generation availability. The RTO will calculate zonal Balancing Energy prices based on the marginal bid for delivery of energy dispatched by the RTO in the zone, determine each SC's energy imbalances for each Congestion Zone, send preliminary imbalance account statements to each SC, and settle with each SC for final net Balancing Energy payments and for ancillary services. The RTO will also accumulate costs for resolving residual congestion for future use in updating flowpaths.

SCs are responsible to provide validated settlement-quality meter data to the RTO. SCs will receive imbalance accounting information from the RTO, trade their imbalances with other Market Participants, pay the RTO for any net energy deficiencies (or receive payment for excess energy provided to the RTO), and pay for ancillary services obligations that were not met through self-provision.