

Draft Description of RTO West Congestion Management Proposal

This draft represents the congestion management proposed developed by the filing utilities for inclusion in their planned March 1, 2002 filing to FERC. It is a work in progress and is subject to change. The filing utilities are releasing this draft to provide an opportunity for stakeholder review and comment. Interested stakeholders may provide comments and input on this draft at the RRG meetings scheduled for February 11 and 12 or in writing. Comments in writing should be sent via email by February 15 at the latest to Bud Krogh at ekrogh@serv.net and Chris Elliott at chrisrtowest@earthlink.net.

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Congestion Management Proposal
February 6, 2002**

A. Introduction

This paper describes the key elements of the RTO West filing utilities' proposal for a congestion management system for RTO West. Section B contains an executive summary of the proposal description. Section C.1 provides some background information to help readers understand the operational framework within which the RTO West congestion management proposal is designed to fit. Section C.2 describes the general market design that will support RTO West operations and settlement related to congestion management. Section C.3 explains the characteristics and use of Financial Transmission Options. Section C.4 describes the process for cataloguing and managing pre-existing transmission contracts and load service obligations that are not converted into Financial Transmission Options. Section D describes some of the additional work needed to develop many of the details related to the proposed congestion management system. Section E describes the expected future role of the RTO West Board of Directors in monitoring, reviewing, and, if necessary, modifying the RTO West congestion management system.

There are also two appendices to this paper. Appendix A contains a glossary of key terms and acronyms. Appendix B contains Draft Supplemental Procedures and Rules for Cataloguing and Conversion.

B. Executive Summary

This proposal for an RTO West congestion management system is based on the calculation of locational, bid-based prices at each bus on the RTO West transmission system. It has been developed to mesh with the operational characteristics of the loads, resources, and transmission system within the RTO West geographical area.

RTO West will accept all schedule requests properly submitted to it. The initial period for submitting schedules to RTO West (which can be done only through recognized "Scheduling Coordinators") will be in the day before operations (the "Day-Ahead"). RTO West will use the scheduling requests to analyze the resulting power flows for congestion problems. Except where operationally infeasible, RTO West will procure necessary generation increases and decreases, as well as dispatchable demand response (collectively referred to in this paper as "incs" and "decs"), to implement the schedule requests it has received. Participation in the RTO West inc and dec bidding process will be entirely voluntary.

RTO West will use the bids it receives in a security constrained, least-cost redispatch to calculate the marginal cost of serving the next increment of load at each bus in the system. Congestion charges will be based on the spread in bus prices between each schedule's withdrawal and injection locations (which are then multiplied by the size of the schedule).

While the specific market design and settlement system will be completed once details of RTO West's ancillary services system are developed, this paper describes the congestion

management system as a two-settlement model. Assuming a two-settlement model, once the Day-Ahead process is completed, those schedules that have been accepted will become financially firm and the Scheduling Coordinators will be responsible for paying for congestion management actions necessary to implement those schedules.

There will be two bases on which Scheduling Coordinators can hedge themselves financially against congestion charges: Financial Transmission Options (or “FTOs”), which are briefly described below and in more detail in section C.3 of this paper; and Catalogued Transmission Rights (or “CTRs”), which are also briefly described below and in more detail in section C.4 of this paper. Scheduling Coordinators that do not have FTOs or CTRs will nevertheless be able to submit schedule requests, either by specifying a limit on maximum congestion charges they are willing to bear to have the schedule implemented, or by submitting schedule requests with a commitment to pay whatever congestion clearing charges apply.

After the Day-Ahead scheduling period, Scheduling Coordinators will be able to modify their Day-Ahead schedules (as permitted by RTO West scheduling rules yet to be developed), but they will be charged for any applicable congestion clearing needed to implement the modifications. There will be special rules to deal with schedule modifications necessitate by forced outages.

In the two-settlement model, following system dispatch in a given operating hour (“Real-Time”), there will be a second settlement. Scheduling Coordinators will be charged for applicable congestion clearing related to the schedule modifications they submitted, as well as for any imbalance between actual and scheduled energy injections and withdrawals.¹

As noted above, FTOs are financial hedging tools that allow Scheduling Coordinators to manage their risk of incurring congestion charges. FTOs confer no physical rights to schedule on the RTO West system, and Scheduling Coordinators do not need to obtain FTOs before they are allowed to submit schedule requests. FTOs can be traded freely in secondary markets (subject to any registration rules RTO West may adopt to track ownership), but only Scheduling Coordinators may “redeem” FTOs (that is, submit them to RTO West to receive credit against schedules they submitted to RTO West).

An FTO is the right to receive a credit against congestion charges incurred during a particular hour (specified in the FTO) as determined by the positive price differential between the withdrawal and injection locations specified in the FTO multiplied by the megawatt quantity specified in the FTO.² Because they are options, FTOs never become obligations for the holder to pay a given price spread to RTO West. While an FTO’s value can be zero (if there is no price

¹ Holders of FTOs will not be able to use their FTOs to receive credit against Real-Time settlement charges. Whether there will be special provisions related to settlement for delivered ancillary services has not yet been decided.

² For example, if an FTO is defined by a megawatt quantity for a specified hour between injection point A and withdrawal point B, the price differential would be determined by the locational price at withdrawal point B (for the specified hour) minus the locational price at injection point A.

spread between its specified withdrawal and injection locations), it cannot be negative. If the price spread between an FTO's withdrawal and injection locations is negative, the holder receives no credit.

FTOs do not confer rights to receive cash independent of whether the Scheduling Coordinator has incurred congestion charges; they have value only to the extent they are redeemed to receive credit against congestion charges a Scheduling Coordinator has incurred during the hour specified in the FTO. If a Scheduling Coordinator has FTOs with credit value for a given hour greater than the congestion charges the Scheduling Coordinator has incurred, the credit applied equals the congestion charges. Any surplus value is lost.

The value of FTOs is not dependent upon whether the Scheduling Coordinator holding the FTO submits a schedule request that precisely corresponds to the injection and withdrawal locations specified in the FTO. The credit value generated by a particular FTO may be used to offset congestion charges resulting from any schedules a Scheduling Coordinator has submitted during the hour specified in the FTO.³

RTO West will auction FTOs of various durations (such as one year, one month, one week, and so on) in accordance with its determinations of: (1) what combinations of FTO releases will generate the greatest total auction revenue; and (2) the maximum amount of FTOs it can make available consistent with its guidelines related to system and revenue adequacy. On the basis of these assessments, RTO West will hold periodic advance auctions (such as six months ahead, one month ahead, and so forth) to release FTOs.

FTOs other than those auctioned by RTO West can be issued through two additional processes: (1) voluntary conversion of pre-existing contracts (or, more precisely, the CTRs that reflect them) into FTOs, and (2) system expansion (in which project sponsors may receive FTOs based on the increase in physical capacity their projects deliver). Whatever their origins, all FTOs will be freely tradable in secondary markets.

As previously noted, FTOs are not the only means by which Scheduling Coordinators can hedge against congestion charges. Schedules that are submitted consistent with the terms of a CTR will receive credits equal to any congestion charges associated with those schedules. A CTR will never generate credits greater than the congestion charges resulting from a schedule submitted on the basis of that CTR.

CTRs are the catalogued rights that will enable RTO West to provide transmission service to carry out each Participating Transmission Owner's ("PTO") pre-existing contract and load service obligations that have not been converted into FTOs. RTO West will manage the aggregate pre-existing obligations using the minimum set of CTRs from the CTR catalogue and the "Congestion Management Assets" (explained in more detail in section C.4 below) each PTO

³ This feature is designed to improve liquidity and make FTOs more tradable in the secondary market and should be feasible because the amount of FTOs and CTRs made available on the system are intended match the capacity of the system..

has provided to support its total set of CTRs. This will enable RTO West to take advantage of flexibility and diversity within and between CTR sets in ways that PTOs could not when managing their individual systems.

CTRs are established through cataloguing, which provides necessary information related to PTO transmission service obligations including: (1) the nature and extent of each PTO's outstanding transmission service obligations related to non-converted, pre-existing transmission contracts and load service obligations (which defines the CTRs that each PTO may use in scheduling transmission service related to those contract and obligations); and (2) the Congestion Management Assets each PTO will make available to RTO West so that RTO West can honor and manage, in the aggregate, all CTRs.

Each PTO's CTRs and Congestion Management Assets must balance. In other words, each PTO must provide RTO West with Congestion Management Assets to support any CTRs included in the PTO's catalogue. RTO West will test the sufficiency of each PTO's catalogued Congestion Management Assets by measuring against all of the PTO's CTRs (in the aggregate, not on an individual contract-by-contract basis). If RTO West's testing reveals that a PTO's Congestion Management Assets are not sufficient, the PTO will be obliged to make up any shortfall. RTO West will perform an additional sufficiency test to make sure that when all PTO CTRs are accounted for in the aggregate, the aggregate set of PTO Congestion Management Assets is sufficient to satisfy them.

CTRs will not be tradable. Those who desire the tradability and flexibility associated with FTOs will have to make the choice to convert their contract rights (subject to appropriate rules and procedures) into FTOs.

Contract Customers⁴ will be able to schedule their transmission service related to CTRs in one of two ways: (1) by continuing to follow the tariff, business, and scheduling practices of their PTOs; or (2) subject to certain preconditions, by shifting their scheduling relationships to one in which they schedule directly with RTO West. In either case, any charges associated with schedules that do not conform to the terms of the corresponding CTRs would be the responsibility of the party that submitted the schedule. RTO West will also develop a process to enable Contract Customers that wish to declare in advance how they will schedule against their CTRs to receive compensation from RTO West based on the extent to which the early declaration enables RTO West to auction additional FTOs.

The settlement process for schedules submitted on the basis of CTRs will be the same as for schedules submitted with or without FTOs (although RTO West will accommodate PTO actions necessary to honor CTRs that permit Contract Customers to modify schedules after Day-

⁴ The transmission customers that receive service under non-converted, pre-existing transmission contract and load service obligations that give rise to CTRs are referred to in this paper as "Contract Customers."

Ahead, consistent with the terms of the underlying contract).⁵ Credits related to CTRs will not be flexible like FTOs, because a CTR credit will apply only where the schedule submitted corresponds precisely to the terms of the CTR.

This paper describes the RTO West filing utilities' congestion management proposal as it has been developed to date. Its fundamental purpose is to enable the Federal Energy Regulatory Commission (the "Commission") to determine its sufficiency as measured against the requirements set forth in Order 2000. There are many details yet to be worked out with respect to numerous elements of the proposal.

In addition, the RTO West filing utilities recognize that once it becomes operational, RTO West will have both the obligation and the power to assure that all aspects of its market design and operations are workable and consistent with Commission orders and policies. They therefore contemplate that the Board of Directors of RTO West (the "Board") will, from the beginning of RTO West's commercial operations, have the authority to modify the congestion management approach described in this document if circumstances warrant (subject to certain principles described in section E of this paper). If the Board sees no need for change, it need not make any.

At the end of three years of commercial operations, the Board will have an obligation to conduct a thorough, formal evaluation of RTO West's congestion management system. The Board will then need to decide whether it believes the best course is to continue with the congestion management system as then in effect or to modify it.

C. Description of Key Congestion Management Proposal Elements

1. Background: the Northwest's Hydroelectric and Thermal Generating Resources; Goal of Seamless West-wide Market
 - a. The Northwest's Hydroelectric and Thermal Generating Resources

The inventory of generation resources within the Northwest Power Pool area (which is largely coincident with the RTO West geographical area) is unique. In the Northwest almost 90% of existing generation capacity (and more than 90% of the energy) is produced by two generation types: hydroelectric projects and baseload thermal plants (such as nuclear and coal-fired generators). Less than 5% of existing capacity consists of intermediate and peaking units. Most of the thermal units are usually loaded at or near capacity unless they are off line for maintenance or forced outages. In contrast the loading levels of hydroelectric units, which generally can reach full output from start-up within minutes, are highly variable.

These characteristics are important to the RTO West congestion management proposal for several reasons. Key among these is the need for a voluntary bid-based system for

⁵ These actions cannot impose costs on RTO West because the PTO's Congestion Management Assets must be sufficient to encompass Contract Customers' full exercise of their contract rights.

congestion clearing and a voluntary unit commitment process that allows for coordinated river operations, which integrate hydro and thermal resources throughout the western system geographically and over the operating season.

The Northwest's coordinated resource system is characterized by interdependency between hydro and thermal resources; dispatch decisions for any given unit can affect the commitment and availability of others. This contrasts with a system in which unit decisions can be independent from one another. To enable the hydro/thermal resource system to operate at greatest efficiency within both energy and non-power constraints (discussed further below), operations must be coordinated to optimize energy production in the system as a whole and over an entire season, rather than individual generators' output within limited trading periods.

Hydroelectric resources tend to be energy-constrained, rather than capacity-constrained. . In addition, there are limitations on what individual hydroelectric projects can produce and limitations from the interaction among hydroelectric projects on a single river system. Individual projects can respond quickly to changing system requirements, but only within certain ranges. These ranges are affected by river flow, reservoir level, the maximum rate at which a generation facility can change its output (ramp rate), and non-power constraints with which the facility must comply.

Taken together, hydroelectric projects operating on the same river system encounter additional constraints. Different projects have different capabilities. Some have significant storage capability in their reservoirs, while others must operate to the "run of the river." The coordinated operation of facilities that are upstream from other projects must take into account the downstream effects of operational decisions at the upstream projects. Coordinated operation must also account for the lag time between upstream water releases and the availability of that water for downstream uses.

The coordination of the combined hydro/thermal resource system involves longer time horizons and a larger set of considerations than is typical for individual (independent) hydroelectric or thermal facilities. Hydro and thermal resource dispatch decisions must reflect not only what may occur over the course of a day, but also over the course of a season, a year, or even a longer time period.

On an annual planning basis, the amount of energy (water) available for generation purposes at hydroelectric projects is uncertain. Energy production can vary substantially as to quantity and timing, depending upon regional precipitation, snowpack, and other factors dictated by nature. Because the quantity and timing of water are uncertain until Real-Time, and because there are long-term and short term non-power hydroelectric system constraints that must be accommodated as an integral part of coordinated hydro/thermal system operations, conventional short-term marginal-cost production concepts are of little use. A realistic after-the-fact assessment of the "economics" can only be made on a relatively long-term (*i.e.*, seasonal or annual) basis, as opposed to a very short-term (*i.e.*, hour-by-hour) basis.

Because projects of the coordinated hydro/thermal resource system interact with each other, elaborate protocols have been developed over the years to manage the operation of these coordinated resources. In the Northwest, these protocols include: (1) the Columbia River Treaty, a treaty between the United States and Canada that governs operations of Canadian storage reservoirs in the Columbia River Basin, and (2) the Pacific Northwest Coordination Agreement (“PNCA”), an agreement for coordination of operations among power systems of the Pacific Northwest. The PNCA’s purpose is to coordinate the operations of a large, geographically dispersed regional hydro/thermal resource system (the “Coordinated System”) within the limits of applicable non-power constraints. A number Pacific Northwest utilities are also parties to the Mid-Columbia Hourly Coordination Agreement (“MCHC”), which enables Mid-Columbia hydroelectric facility operators to coordinate the daily operations of each Mid Columbia Project with both: (1) the other Mid-Columbia Projects, and (2) the overall hydro/thermal resource system in the Northwest. These protocols restrict the ability of many hydroelectric projects to be dispatched independently. They are designed to maximize the use of the entire system’s energy production capability over a long-term planning horizon, rather than the short-term (daily or hourly) economic value of individual independently dispatched resources

Much of the thermal generation in the Northwest (which typically runs at or near full-load capability) is operated in coordination with hydroelectric generation. For example, many hydroelectric units run to satisfy peaking demand during heavy load hours, and then back off for storage (recharge) during light load hours. To both support and enhance thermal-hydroelectric coordination activity, trading hubs (such as the California-Oregon Border (“COB”) and the Mid-Columbia (“Mid-C”)) have developed in the Northwest to facilitate bilateral trading on both forward and Real-Time bases.

As previously noted, coordinated hydro/thermal resource operations must also accommodate multiple hydroelectric system non-power constraints. These include flood control, reservoir refill, navigation, irrigation, recreation, municipal and industrial water supply, endangered species protection, and other environmental regulations. These non-economic considerations must be applied over multiple time horizons (annual, seasonal, monthly, weekly). Their impact cannot be fully accounted for on a short-term (daily, hourly) basis, so they are not captured in a unit commitment economic analysis. The result is that short-term marginal-cost production concepts are not adequate for determining bid prices for hydroelectric generation. Instead, experience, discretion and informed judgment (as opposed to strictly analytical techniques) must be applied over multiple planning horizons to determine pricing for hydroelectric generation.

Because of the operational and economic forces at work, there is also tremendous variability of generation dispatch patterns across the RTO West transmission system (reflecting water conditions, season, non-power constraints, and many other economic and non-economic factors). Constraints on many major transmission paths are stability limited, rather than thermally limited. This means that solving for a least-cost dispatch within a daily or hourly timeframe for a coordinated hydro/thermal resource system is a much more complex and uncertain process than it would be in a thermal-dominated system with relatively consistent and predictable dispatch patterns.

For all of these reasons, RTO West's congestion management system must conform to certain bedrock principles. The pre-scheduling process must allow for voluntary, decentralized unit commitment and dispatch, so that coordinated hydro/thermal system operations can continue to be effectively managed for the entire Northwest. Developing least-cost congestion redispatch solutions must rely on a system of voluntary bidding. New Day-Ahead and Real-Time markets must accommodate and complement the Northwest's active and competitive bilateral forward trading markets. In addition, the instruments for hedging against congestion charges should be financial options (FTOs), rather than obligations.

Relying on FTOs will increase the likelihood that schedule requests correspond more closely to the physical capability of the transmission system. Holders of instruments that are financial obligations (*e.g.*, FTRs) receive payments (or are obligated to pay) without regard to whether they have scheduled any transmission service. There is no connection between physical use of the system and the value of an FTR. FTOs, on the other hand, have no credit value unless the holder has incurred congestion charges through submitting actual schedules. Connecting congestion charge hedges to the physical system provides a better mechanism for constraining proposed dispatch. Only schedules with matching physical energy flows can realize the full value of an FTO. This will encourage market participants to submit schedules that do not require large amounts of redispatch. It will also promote more efficient trading in FTOs, because an FTO holder that does not intend to submit schedules that correspond to the FTO will have a strong incentive to resell the FTO to another market participant that does.

The congestion management proposal described in this paper has been designed to recognize and support all of these principles.

b. Goal of Seamless West-wide Market

The filing utilities are actively engaged with representatives of West Connect and the California ISO to develop a seams proposal. These discussions are taking place primarily through the Seams Steering Group for the Western Interconnection. This policy level group has representatives from all three RTOs in the Western Interconnection who are working to develop a viable congestion management seams proposal. The three RTOs in the Western Interconnection (RTO West, WestConnect, and the California ISO) are committed to realizing the vision for a West-wide market by developing a workable proposal to manage congestion at the seams between RTOs.

The California ISO is in the process of revising its congestion management proposal as part of its market redesign. The California ISO released a draft proposal for public comment in early January 2002. While no final decision has been made, there are many similarities between the California ISO congestion management proposal and the RTO West proposal. For example, both models have financial rights and Day-Ahead markets for managing congestion.

The RTO West congestion management proposal provides for congestion hedges (Financial Transmission Options) that are options; the California ISO is undecided whether to use options or financial obligations. Both models use locational pricing for congestion and

accommodate schedules tied to injection and withdrawal locations. Both models may allow for hubs or zones to develop to facilitate trading.

One difference between the RTO West approach and the California ISO proposal is in the area of balanced schedules. RTO West's model requires that schedules be balanced; the California ISO proposal would allow both balanced and unbalanced schedules.

In contrast to the financial rights approaches proposed by RTO West and the California ISO, WestConnect's proposal may be based on physical rights. Further work is needed to understand how transactions among RTO West, the California ISO and WestConnect can be facilitated.

The filing utilities intend to continue their interregional coordination work with WestConnect and the California ISO, and to provide additional information to the Commission on a workable seams proposal after completing their March 1, 2002 proposal filing.

2. Overview of RTO West Congestion Management Market Design – Operation and Settlement

The primary RTO West scheduling process will take place in the Day-Ahead market. Any entity that wishes to submit schedule requests to RTO West will have to be a Scheduling Coordinator. To qualify as a Scheduling Coordinator, an entity will have to meet certain technical and creditworthiness requirements that will be set out in RTO West's transmission service tariff. Duly qualified Scheduling Coordinators will not need "physical or financial congestion rights to submit schedule requests to RTO West."⁶ The RTO West scheduling process will allow all Scheduling Coordinators that are willing to bear congestion charges resulting from their schedules to submit whatever schedule requests they choose.⁷

RTO West's scheduling rules will require that all schedules be balanced. This means that for each schedule request, the amount of energy scheduled for delivery to the injection locations must equal the amount of energy to be delivered to the withdrawal locations (taking into account whatever rules apply concerning provision of real energy losses and subsequent energy imbalances). Scheduling Coordinators that do not have FTOs or the ability to submit schedules linked to a CTR⁸ will nevertheless be able to submit schedule requests. They can either specify a

⁶ The RTO West pricing model contemplates that all transmission customers will be required to make certain payments that are analogous to access fees before being permitted to schedule deliveries across the RTO West transmission system. These payments do not limit how many users can obtain access to the RTO West transmission system, however. Their intended function is to assure that all users contribute to the embedded costs of the system.

⁷ RTO West's ability to accept all schedule requests does have limitations: RTO West will reject schedule requests if necessary to resolve an aggregate set of scheduling requests that cannot be physically accommodated (despite implementing all available redispatch) within the operational security constraints of the RTO West system.

⁸ FTOs are described in section C.3 of this paper; CTRs are described in section C.4.

limit on maximum congestion charges they are willing to bear to have their schedules implemented, or they can submit schedule requests with a commitment to pay whatever congestion clearing charges apply.

At the close of the period for receiving initial Day-Ahead scheduling requests, RTO West will use the scheduling requests to analyze the resulting power flows for congestion problems. RTO West will then purchase the most economic redispatch available to enable it to implement all schedules as requested. Schedule requests with limit prices less than RTO West's forecast of congestion clearing charges for the hour to which they relate will automatically be withdrawn. Remaining schedules will then become financially firm, and Scheduling Coordinators will become responsible for the congestion clearing charges associated with their schedules. The close of the Day-Ahead scheduling process will be followed by a settlement against those schedules.⁹

The process for clearing congestion that arises during the scheduling process will rest on a system of voluntary bids from generators (and eligible "dispatchable" loads that wish to participate in bidding). Participation in the inc/dec bidding process must be voluntary to avoid disrupting the system of hydroelectric and thermal optimization that is fundamental to the operation of generation resources in the RTO West geographical area. This optimization process relies on operator self-commitment of resources, among other things. To the extent that this voluntary bidding structure raises concerns that markets may not be as deep and liquid as needed for competitive outcomes, the congestion management proposal (together with other elements of the RTO West proposal) provides several tools to address these concerns.

First, RTO West will require that all Scheduling Coordinators submit balanced schedules, which should relieve pressure on Day-Ahead and Real-Time energy markets. Second, the ancillary services provisions are expected to include appropriate penalties for improper reliance on imbalance energy in Real-Time (for example, use resulting from intentionally understating load forecasts). Third, RTO West will make its own independent load forecasts and have a unit commitment process to make sure there are sufficient resources available to meet load in Real-Time. Finally, any problems related to possession or exercise of market power will be dealt with through the market monitoring process.

Through the voluntary bidding process, RTO West will identify the generators (and dispatchable loads) that are willing and able, at a specified price, to comply with RTO West instructions to inc and dec as necessary to clear congestion. RTO West will use these bids in a security constrained, least-cost redispatch to calculate the marginal cost of serving the next increment of load at each bus in the system. Congestion charges (for Day-Ahead and Real-Time

⁹ Once Day-Ahead schedules are accepted, the congestion clearing charges associated with them will become financial obligations. At this stage in the development of the congestion management proposal, the filing utilities believe that this may be best achieved by having a Day-Ahead and Real-Time settlement process. Final market and settlement design will be developed to coordinate with and will be completed when ancillary services procedures are finalized.

markets) will be based on the spread in bus prices between each schedule's withdrawal and injection locations (which are then multiplied by the size of the schedule).

The spreads between each bus price will reflect whatever transmission constraints exist between the corresponding busses. Where there are no constraints in the system between two busses, the marginal prices will be equal because the same resource will be available to deliver an incremental amount of energy at either location.

Although the fundamental basis for congestion clearing charges will be prices calculated at every bus on the system, RTO West may develop approaches for scheduling and settlement based on larger nodes or hubs so as to simplify the market and make trading more efficient and convenient, (so long as any differences between the bus prices and those at nodes or hubs are borne by those who schedule or settle on the basis of nodes or hubs). It is one of the fundamental objectives of this proposal to achieve consistent congestion management market rules and design across all timeframes (forward, Day-Ahead, and Real-Time), and thereby reduce opportunities for gaming.

In the settlement process, all Scheduling Coordinators will be charged for whatever applicable congestion clearing is necessary to implement their schedules. Congestion charges will be based on the positive differences between the applicable locational prices (*i.e.*, there will be no "negative" congestion charges for schedules that either don't affect or run counter to congestion). Scheduling Coordinators may be able to receive credits to offset some or all of their congestion charges if they either redeem FTOs they hold or have scheduled on the basis of CTRs. The market participants whose inc and dec bids have been accepted to clear congestion resulting from Day-Ahead schedules will be compensated according to RTO West rules for settlement on accepted inc and dec bids.

RTO West will develop policies governing Scheduling Coordinators' ability to modify schedules. These rules will take into account what is feasible from an operational standpoint (including the effect of schedule adjustment rights under CTRs), as well as the need to protect against gaming and other unintended consequences (for example, opportunities to submit schedules that create "phantom" congestion in the Day-Ahead market so that an entity can profit from being paid for redispatch to clear congestion). Schedule modifications submitted after the close of the Day-Ahead scheduling process will be subject to congestion charges for any applicable congestion clearing needed to implement them. There will be special rules to deal with schedule modifications that are involuntary (such as those necessitated by forced outages).

After the Day-Ahead and schedule modification processes are complete, RTO West will implement the aggregate sets of schedules it has accepted, using the most economic inc and dec bids available to it to clear congestion (consistent with whatever security constraints are then in effect on the system). RTO West will also operate a Real-Time market to allow Scheduling Coordinators to deal with Real-Time energy imbalances.¹⁰

¹⁰ Energy imbalances will occur in Real-Time to the extent there are mismatches between Scheduling Coordinators' actual and scheduled energy injections and withdrawals.

In the two-settlement model, following Real-Time operation, there will be a second settlement. This second settlement will include congestion charges associated with schedule modifications. Scheduling Coordinators will not be able to use FTOs to offset congestion charges incurred after the Day-Ahead settlement. Rules concerning Scheduling Coordinators' ability to use FTOs to receive credit against congestion charges resulting from delivery of ancillary services have not yet been worked out.

One goal of RTO West's congestion management practices is to maintain revenue neutrality (and not generate costs that must be recovered through Grid Management Fees or elsewhere).¹¹ To achieve this goal, the filing utilities propose that each of the three sources of congestion clearing costs would be balanced by offsetting assets or revenues.

First, schedules submitted against CTRs should be covered by the Congestion Management Assets that support them. Second, schedules that are hedged by FTOs (to the extent they require redispatch) should be covered by the revenues created through the FTO auction process. Third, schedule requests that are not covered by FTOs will be required to pay any congestion clearing costs needed to implement those schedules. Maintaining each element in revenue balance should produce overall revenue neutrality.¹²

As explained in the foregoing description of the Day-Ahead and Real-Time scheduling and settlement process, RTO West is responsible for managing the acquisition of (and payment and charging for) incs and decs necessary to implement the Day-Ahead and schedule modifications it receives. It may be, however, that some market participants wish to make arrangements on a forward basis that will provide greater financial certainty for schedule requests they expect to submit to RTO West in the future. For this reason, RTO West may facilitate a forward inc/dec market. RTO West should not participate in this forward market except for the purpose of minimizing its costs for all types of congestion clearing and as needed to sell additional FTOs consistent with its risk management policies.

The forward inc/dec market could serve as a means through which those who are willing to commit ahead of time to inc or dec transactions at a specified price could be matched up with those whose schedules are likely to rely on the incs and decs from those resources. A forward inc and dec market could provide greater certainty for some transactions that might otherwise be discouraged by too much uncertainty. Those who wish to manage risk in this way will be able to

¹¹ This is not intended to preclude RTO West from generating positive net revenues. To the extent that buyers that choose to purchase FTOs are willing to pay more than the expected cost of congestion, positive net revenues can be created from the FTO auction. In addition, depending on the settlement process, the Day-Ahead payments for congestion by transmission customers could be greater than the payments made to generators and loads for redispatch. This could create a second source of positive net revenues.

¹² RTO West will, of course, need to address uncertainties related to cash flow and contingencies (such as facilities outages that reduce system capacity). RTO West could manage these through the establishment of an appropriate congestion management reserve account.

do so without requiring RTO West to do it for them. They would likewise bear the costs and risks of these arrangements themselves, rather than through RTO West.

3. Description of Financial Transmission Options

FTOs are the principal tools Scheduling Coordinators will use to manage their risk of incurring congestion charges associated with their schedule requests. The key characteristics of FTOs are that they:

- are financial options, not physical rights;
- are defined with respect to particular injection and withdrawal locations on the RTO West transmission system;
- can be redeemed to receive credits against congestion charges but cannot result in an obligation to pay RTO West a “negative” value;
- are flexible because their credit value can be applied against any congestion charges a Scheduling Coordinator incurs during the operating hour to which the FTO relates, not just charges resulting from a schedule to inject and withdraw energy at the locations defined in the FTO; and
- are freely tradable in secondary markets.

The following discussion elaborates on each of these characteristics.

a. FTOs Are Financial Options, Not Physical Rights.

An FTO gives the holder the right to receive a credit from RTO West equal to: (a) the congestion price differential (within a specified hour) between its defined withdrawal and injection locations, multiplied by (b) the megawatt quantity specified in the FTO. The congestion price differential is determined by subtracting the congestion price at the withdrawal locations from the congestion price at the injection location. For example, an FTO might give the holder the right to receive a credit equal to the difference between the price at withdrawal point B minus the price at injection point A in a specified hour, times 100 megawatts.

Because FTOs are not physical rights, those that hold them cannot use them to impede other parties’ opportunities to submit schedule requests to RTO West, and Scheduling Coordinators without FTOs may nevertheless submit whatever schedule requests they choose to RTO West (so long as they are willing to bear resulting congestion charges).

- b. FTOs Are Defined with Respect to Particular Injection and Withdrawal Locations on the RTO West Transmission System.

As illustrated by the description above of FTO's character as financial options, FTOs are tied to specified injection and withdrawal locations on the RTO West transmission system. This means that a Scheduling Coordinator that wishes to schedule a transaction on the RTO West system does not have to acquire physical rights over individual paths or links across which power flows as a result of the transaction. For Scheduling Coordinators, the ability to hedge with an FTO requires only that the Scheduling Coordinator identify its desired schedule quantities and injection and withdrawal locations. These terms are the basis on which the credit value of the FTO is calculated.

- c. FTOs Can Be Redeemed to Receive Credits Against Congestion Charges But Cannot Result in an Obligation to Pay RTO West a Negative Value

Building on the example provided in section C.3.a above, suppose a Scheduling Coordinator wishes to hedge a future schedule for 100 megawatts between injection point A and withdrawal point B in a particular operating hour. The Scheduling Coordinator could obtain an FTO for 100 megawatts between A and B during that hour. Assuming for the sake of this example that the locational price at B is \$1.00 higher than the locational price at A (resulting in a positive price spread of \$1.00), then the credit available from the FTO will be \$100.

It is important to note that an FTO is not a right to receive cash independent of whether the Scheduling Coordinator that holds the FTO has incurred congestion charges. Only Scheduling Coordinators that have scheduled with RTO West can redeem FTOs. In this sense, FTOs are somewhat like "scrip": they have value only to the extent they are redeemed to receive credit against congestion charges a Scheduling Coordinator has incurred during the hour specified in the FTO. Thus, if a Scheduling Coordinator has FTOs with credit value for a given hour greater than the congestion charges the Scheduling Coordinator has incurred, the credit applied will equal, but not exceed, the congestion charges. Any surplus value is lost.

Because they are options, FTOs will never become obligations for the holder to pay RTO West for the congestion price differential between the specified injection and withdrawal locations.¹³ If the price differential is negative, the holder receives no credit. The holder is not required to make a payment to RTO West. To again use the example provided above, suppose that rather than having a value of \$1.00, the congestion price spread between B and A is -\$1.00 (resulting in a theoretical credit value of -\$100). In this case, the amount of credit the Scheduling Coordinator would receive against congestion charges by redeeming the FTO would be zero. The Scheduling Coordinator would not have to pay RTO West an additional \$100. (Note that these examples do not take into account whatever price a Scheduling Coordinator may have paid if it purchased the FTO through the RTO West auction or bought it from another party).

¹³ An FTO's value will be zero if there is no price differential between its specified withdrawal and injection points.

d. FTOs Are Flexible.

Although the credit value of an FTO is determined by reference to the price differential between its specified withdrawal and injection locations, the usefulness of an FTO as a financial hedge is not limited to schedules that precisely correspond to those injection and withdrawal locations.¹⁴ So long as the Scheduling Coordinator that holds an FTO submits any schedules that result in congestion charges during the operating hour defined in the FTO, the Scheduling Coordinator will have some opportunity to receive credit value for that FTO.

To further build on the example in section C.3.c, (in which the FTO between A and B has a positive credit value of \$100), suppose the Scheduling Coordinator submits no schedule requests between A and B. Instead, the Scheduling Coordinator submits a schedule for 100 megawatts between injection point X and withdrawal point Y. Suppose further that the congestion charge for the X-to-Y schedule is \$150 and the Scheduling Coordinator has no FTOs tied to X and Y for that hour. Because the Scheduling Coordinator has the A-to-B FTO with a credit value of \$100 and congestion charges in that hour of more than \$100, the Scheduling Coordinator receives a full credit of \$100 against the charges for the X-to-Y schedule. The A-to-B FTO functions as a partial hedge against the schedule the Scheduling Coordinator actually submitted, so the Scheduling Coordinator will have to pay RTO West only the \$50 net congestion charge for the X-to-Y schedule.

e. FTOs Are Freely Tradable in Secondary Markets.

Although only Scheduling Coordinators may redeem FTOs (as explained above), FTOs may be freely traded in secondary markets. RTO West may adopt rules that enable it to verify the validity of FTOs and track their ownership as appropriate, but these will not constrain holders' ability to buy and sell them among whatever counter-parties they choose.

The filing utilities envision that while the basic terms that define a particular FTO may not be altered by Scheduling Coordinators or any other holder, FTOs could be broken down and resold in temporal and quantity subparts. For example, if a Scheduling Coordinator has an FTO for 100 megawatts between A and B for a specified operating hour every day for a period of six months, the Scheduling Coordinator could resell less than all of that FTO in two ways. First, the FTO could sell, for example, three months of the FTO to a third party and keep the remaining three months. Second, the Scheduling Coordinator could sell a fraction of the megawatt amount, say, 50 megawatts, and keep the remaining 50 megawatts for its own use.

¹⁴ RTO West may re-examine this policy if it determines that: (1) flexible use of FTOs is having an unacceptable adverse impact on liquidity or providing opportunities for gaming; or (2) there is another acceptable method to accommodate flexible use of FTOs.

f. How FTOs Will Become Available

RTO West will release additional FTOs through an auction process. The auctions, which will be held at periodic intervals (such as six months ahead, one month ahead, and so forth), will release FTOs of various durations (such as one year, one month, one week, etc.). RTO West will determine what sets of FTOs it will auction based on two key considerations: (1) what combinations of FTO releases will generate the greatest total revenue; and (2) the maximum amount of FTOs it can release consistent with its feasibility and risk management criteria, which will include at least the following four elements:

First, RTO West will analyze its ability to issue FTOs based on the unencumbered physical capacity on the transmission system. RTO West will assess how many rights it will need to honor outstanding claims (taking into account both expected use of CTRs and any FTOs currently available for redemption) without needing to purchase additional redispatch to clear congestion. As further explained in section C.3.h below, RTO West will provide pre-scheduling opportunities to CTR holders to voluntarily “lock down” their schedules, which will help increase the certainty with which RTO West can assess the expected use of CTRs.

Second, RTO West will identify opportunities to release FTOs by filling small “gaps” in available capacity through redispatch options. For example, suppose RTO West believes that the capacity to honor a 100-megawatt schedule between injection points A and B is available for 8,720 hours during the year. RTO West would therefore conclude that it is likely to require redispatch for 40 hours to create a full one-year strip of 8,760 hours. RTO West could sell the one-year strip despite the gap if it determines doing so is within its risk management policies.

Third, as described in section C.2 above, RTO West will facilitate a forward market for redispatch (including both generator incs and decs and demand response) to allow market participants to create additional hedging capacity among themselves on a bilateral basis.

Fourth, RTO West will have a process to respond to demand for FTOs that cannot be supported without significant redispatch based upon market participants’ willingness to assume the costs and risks. Say, for example, RTO West determines that there are market participants willing to pay \$300 for a 100-megawatt FTO from A to B, but that additional schedules from A to B beyond those RTO West already anticipates will likely require purchase of redispatch. If RTO West were to determine that its expected cost of redispatch necessary to honor an additional 100-megawatt schedule were less than \$300, it could elect to sell the additional 100-megawatt FTO to the market participant willing to pay at least that much.

Implementation of this fourth element is dependent, however, on RTO West’s ability to: (1) manage resulting cashflow variations through its congestion management reserve account; and (2) fully allocate (on a going forward basis) the costs and risks associated with issuing FTOs supported by redispatch to the purchasers of those FTOs. RTO West cannot be certain of actual redispatch costs until the scheduling process that determines a particular FTO’s credit value (based on locational inc and dec bids) is completed. This means that someone (either RTO West or FTO purchasers) must either: (1) stand ready to make up the difference if RTO West’s

advance estimate of redispatch cost is wrong; or (2) bear these costs of obtaining a hedge through a forward redispatch purchase or option. Whenever RTO West must use its reserve account to make up for underestimated redispatch costs, it will recover the shortfall from the auction revenues it receives from future FTO purchasers.

Besides the RTO West release of FTOs through its auction process, RTO West will be able to issue FTOs through two other processes: (1) voluntary conversion of pre-existing contracts (or, more precisely, the CTRs that reflect them) into FTOs; and (2) system expansion (in which project sponsors receive FTOs based on the increase in physical capacity their projects deliver). Whatever their origins, any FTO will be freely tradable in secondary markets as described in section C.3.e above.

g. Voluntary Conversion of CTRs to FTOs

This congestion management proposal provides that conversion of pre-existing contracts is voluntary for all Contract Customers (whether the Contract Customers are PTOs or non-participating third parties). The RTO West filing utilities believe that there will be incentives for voluntary contract conversion with respect to at least certain types of pre-existing contracts (such as those providing for simple point-to-point service in a specified quantity). With a simple contract, conversion to an FTO will be a straight-forward process (as further described in Appendix B).

For example, suppose there is a contract for 100 megawatts from a point of injection A to a point of withdrawal B, which the Contract Customer may exercise during all hours of the year. If the Contract Customer elects to convert this contract, the Contract Customer would receive an FTO from A to B for 100 megawatts for 8,760 hours a year. This FTO will provide the same hedging against congestion costs from A to B as the underlying contract provided. With an FTO, the Contract Customer now has an instrument that can be readily traded in secondary markets (for all or only a portion of the specified hours and quantity), and that can be used to receive credit against congestion costs incurred between any injection and withdrawal locations on the RTO West system. If not converted, the contract rights are limited to credits against congestion costs for schedules only between A and B and cannot be traded or “subdivided.”

The RTO West pricing model has also taken into account that there should not be disincentives, from a pricing perspective, that would discourage voluntary conversion of pre-existing contracts. For example, the RTO West pricing model’s “Transmission Reservation Fee” or “TRF” does not operate to expose a party to new charges resulting from conversion it could have avoided by choosing not to convert.

Conversion of pre-existing contracts will increase the number of FTOs available for trading in the secondary market. If, after an initial period of operating experience, RTO West determines that the incentives for voluntary contract conversion are not working as expected, it may need to further evaluate conversion incentives.

h. Voluntary Pre-Schedule “Lock-Down” for CTR Contract Customers

Contract Customers that do not wish to convert the CTRs to FTOs will have an alternative path for making capacity they do not need available for others’ use: a voluntary pre-schedule process in which the Contract Customer “locks down” its intended CTR schedule. The pre-scheduling process will take place in the period before the Day-Ahead (the “Pre-Day-Ahead”). A Contract Customer may elect to offer (either for a limit sell price or as a price-taker if it so chooses) to pre-schedule against its CTRs. In doing so, the Contract Customer will relinquish flexibility it would otherwise have had under the terms of the CTR.

Through the Pre-Day-Ahead scheduling process, RTO West will gain greater certainty with respect to its Real-Time operations. When CTRs that provide for scheduling flexibility are pre-scheduled, RTO West will learn how those CTRs will actually be used. RTO West will no longer have to leave “room” to accommodate all expected uses. This will allow RTO West to assess how much capacity will become available on its system because of the Pre-Day-Ahead lock-down, and release FTOs supported by that capacity.¹⁵

RTO West will auction the FTOs it is able to release because of the Pre-Day-Ahead lock-down and compensate participating Contract Customers according to the additional value (through increased sales of FTOs) their decision to lock down has provided.

Once a Contract Customer has committed to a Pre-Day-Ahead schedule, that Contract Customer will receive both the benefit and risk associated with that decision. The benefit is that the Contract Customer receives compensation from RTO West based on resulting FTO sales. The risk is that if the Contract Customer subsequently modifies a schedule submitted in the Pre-Day-Ahead, the Contract Customer will bear whatever charges result from the schedule modification.

RTO West’s decision to auction additional FTOs on the basis of CTR flexibility that is released through the Pre-Day-Ahead scheduling process will not adversely affect any PTO’s Congestion Management Assets. For example, the PTO whose Congestion Management Assets support a CTR that is locked down in the pre-schedule process will not incur an obligation to provide increased redispatch services beyond what it originally committed to in the cataloguing process.

By the same token, the PTO whose Congestion Management Assets support a CTR will not be able to “block” the Contract Customer’s ability to voluntarily participate in the Pre-Day-Ahead scheduling process (such as by claiming that the Contract Customer has breached a

¹⁵ The filing utilities envision that the Pre-Day-Ahead lock-down would be available, at a minimum, on the day before Day-Ahead. To the extent RTO West determines that it is advantageous to offer opportunities for earlier voluntary lock-down, RTO West could offer this opportunity in connection with other forward FTO auctions. RTO West would provide compensation to willing Contract Customers according to a formula it develops to assess the additional value provided by those Contract Customers’ election to lock down their CTR schedules early.

contract prohibition against reselling transmission capacity). This is analogous to provisions governing conversion of CTRs to FTOs, under which PTOs must allow Contract Customers that wish to convert to do so (subject to requirements that conversion must not increase the burden on the PTO's Congestion Management Assets).

i. Long-Term FTOs.

From time to time, RTO West may be able to offer FTOs for durations of more than one year on the basis of unencumbered system capacity. The buyer would receive FTOs associated with the unencumbered capacity for whatever term is defined in the auction process for those FTOs.

[Unencumbered capacity means the capacity that is expected to be unused by all existing users including expected load growth on the PTO's own system. For example, RTO West could issue long-term FTOs for a period extending up to the year in which it anticipated that load growth would encumber the capacity needed to meet the long-term right. Expected load growth will be defined in the cataloguing process (for forecast period of 10 years) for all pre-existing transmission agreements that provide for load growth. Projected load growth with respect to pre-existing load service obligations would also be catalogued.] ***Placeholder language – needs to be confirmed***

RTO West may, subject to its risk management guidelines, sell long-term FTOs supported through purchase of redispatch. In these cases, the buyer would be required to pay all redispatch costs necessary to create additional system capacity to support the FTOs. The buyer would receive FTOs associated with the increased capacity for the term specified in its contract with RTO West.

RTO West may also issue FTOs as compensation for investments in system expansion. This could happen in one of two ways. First, a PTO might be required to expand its system to maintain the sufficiency of its Congestion Management Assets. If the expansion were greater than required to achieve sufficiency, RTO West could issue long-term FTOs in exchange for the additional capacity. Second, RTO West may issue long-term FTOs to parties willing to finance the construction of facilities that increase transmission capacity on the system.

4. Description of Approach to Service Under Non-Converted Contracts and Load Service Obligations

As explained above in section C.3, FTOs are the primary tools Scheduling Coordinators use to hedge against congestion charges. CTRs are the means through which RTO West and its PTOs will address transmission service related to non-converted, pre-existing transmission contracts and load service obligations. CTRs are fundamental to the RTO West congestion management proposal for two reasons: because conversion of pre-existing contract rights is voluntary and because CTRs allow RTO West to manage rights related to non-converted, pre-

existing transmission contracts and load service obligations on a “netted” basis in a way it could not if all parties were compelled to convert their pre-existing rights and obligations to FTOs.¹⁶

Even after PTOs transfer operational control and management of their transmission facilities to RTO West, they must continue to honor the pre-existing transmission agreements with their Contract Customers. Similarly, those PTOs with load service obligations must continue to fulfill those obligations using the transmission facilities they have built or contracted for. It is crucial that they be able to do so reliably without facing involuntary price shocks.

Because RTO West will be the sole provider of transmission services across the transmission facilities that become part of the RTO West system (though continuing to be owned by the PTOs), RTO West will take on the responsibility of fulfilling transmission service obligations under non-converted, pre-existing transmission contracts and load service obligations. To fulfill these obligations, RTO West will need: (1) relevant contractual information; and (2) the use of PTO facilities and operational mechanisms necessary to support these transmission services. These needs are addressed through a process known as “cataloguing.”

Cataloguing is the process through which two sets of information related to PTO transmission service obligations are compiled: (1) the nature and extent of each PTO’s outstanding transmission service obligations related to non-converted, pre-existing transmission contracts and load service obligations (which define the CTRs that each PTO may use to schedule transmission service related to those contract and obligations); and (2) the Congestion Management Assets each PTO will make available to RTO West so that RTO West can honor and manage, in the aggregate, all CTRs. A proposed set of procedures and rules related to cataloguing CTRs for each PTO, as well as for converting CTRs into FTOs, is included with this paper as Appendix B.

The concept of Congestion Management Assets begins with the physical facilities each PTO agrees to allow RTO West to operate and provide transmission service across. These include such facilities as transmission lines, substations, phase shifters, and other hardware. To the extent these physical facilities alone are not adequate to support all of the CTRs a PTO identifies in its catalogue, the PTO will have two options: (1) to expand its physical system; or (2) to make available to RTO West an adequate range of contractual and operational

¹⁶ The critical issue here is that all the potential rights the parties might elect to exercise under the pre-existing contracts and load service obligations are greater than the set they can exercise in practice at any one time. To avoid diminishing Contract Customers’ rights, full conversion would require issuing more FTOs than could be simultaneously honored (because options within each set of contract rights would have to be included in the FTOs issued). Contract Customers would re-sell the options they did not need for a particular schedule to others, rather than simply foregoing the other options under the contracts, as they would be required to do under the original contract’s terms. Using the CTR mechanism solves this problem because it allows RTO West to honor the rights that are actually exercised through submitted schedules without having to issue credits to others for rights that previously could not have been exercised simultaneously.

mechanisms. Contractual and operational mechanism may include items such as remedial action schemes (RAS), redispatch services, and rights to restrict service under pre-existing contracts. The catalogue entries for each PTO's Congestion Management Assets will list both physical facilities and any necessary contractual and operational mechanisms.

Each PTO's CTRs and Congestion Management Assets must balance. In other words, each PTO has an obligation to provide to RTO West (and reflect in the cataloguing process), Congestion Management Assets that are at a minimum sufficient to satisfy its outstanding non-converted, pre-existing transmission contracts and load service obligations (and the resulting CTRs). This obligation encompasses whatever is necessary support a Contract Customer's full exercise of its contract rights (including the ability, if a contract so provides, to modify schedules after the close of Day-Ahead scheduling).

RTO West will test the sufficiency of each PTO's catalogued Congestion Management Assets, measured against all of the PTO's CTRs in the aggregate (not on an individual contract-by-contract basis). If RTO West's testing reveals that a PTO's Congestion Management Assets are not sufficient to cover all of the PTO's CTRs, the PTO will be obliged to make up any shortfall. RTO West will also perform an additional sufficiency test to make sure that when expected simultaneous use of all PTOs' CTRs are considered, there are sufficient Congestion Management Assets, on an aggregate PTO basis, to make good on them. For purposes of the sufficiency test, RTO West will be limited to relying on PTO-supplied Congestion Management Assets other than physical transmission facilities only as necessary to honor the CTRs of the PTO that supplied those Congestion Management Assets.

Where a PTO's Congestion Management Assets include redispatch services, the PTO will have the option to fulfill its obligations by either: (1) agreeing with RTO West to pay an allocated share of RTO West's congestion clearing costs incurred to honor that PTO's CTRs; or (2) agreeing to terms under which the PTO will adjust its schedules at RTO West's instruction to contribute to congestion clearing.

CTRs are unlike FTOs in two important ways: tradability and flexibility. A PTO may not sell to another party its rights to schedule on the basis of CTRs.¹⁷ Reselling is not the same, however, as allowing the Contract Customer to establish a direct scheduling relationship with RTO West, subject to certain conditions, as described further below. Also, where a Contract Customer has the right under a pre-existing contract to re-assign its contract rights to a third party, the Contract Customer will retain that right. If the Contract Customer re-assigns its contract rights, the PTO will have to continue to use the associated CTRs to fulfill transmission service obligations subsequently owed to the recipient of the Contract Customer's assignment. (A PTO in its capacity as transmission provider may not elect to assign the contract rights underlying a CTR. Contract Customers will be permitted to assign their rights reflected in CTRs only when the underlying contract gives the Contract Customer the right to do so.)

¹⁷ As described in section C.3.h above, Contract Customers will be have the option to participate in, and receive compensation for, a pre-scheduling process in which they lock down scheduling flexibility they would otherwise have with respect to a CTR.

Furthermore, a CTR may be exercised only by submitting schedules consistent with the specific injection and withdrawal locations, quantities, and other limitations for that CTR. Accordingly, a party scheduling on the basis of a CTR will be required to identify the catalogue entry or entries describing the contract that permits the schedule. The restrictions governing the use of CTRs are designed to assure that those who submit schedules based on CTRs receive neither greater nor lesser rights than they would have had if they had continued to schedule solely on the basis of their underlying contracts.

Any Contract Customers with rights reflected in CTRs that wish to have the tradability and flexibility associated with FTOs will have to make the choice to convert their contract rights (subject to appropriate rules and procedures) into FTOs.

In other respects, however, CTRs are quite similar to FTOs. When a PTO (or, more exactly, the Scheduling Coordinator acting for the PTO) submits a schedule request consistent with one of its CTRs, the CTR will entitle the PTO to receive a credit that will offset any congestion charges associated with that schedule (so long as the underlying contract did not require payments for congestion clearing). A CTR will never generate credits greater than the congestion charges resulting from a schedule submitted on the basis of that CTR.

RTO West will be responsible for managing the aggregate set of CTRs it must honor, and must do so within the bounds of the Congestion Management Assets each PTO has provided to support its identified set of CTRs. The filing utilities anticipate that RTO West will be in a unique position to understand and manage the combined transmission systems and Congestion Management Assets of all PTOs at once. RTO West may therefore be able to take advantage of flexibility and diversity within and between CTR sets in ways that PTOs could not when managing their individual systems in isolation from one another. This will facilitate more efficient use of whatever physical capacity is available across the PTOs' combined systems.

As mentioned above, Contract Customers will be able to schedule their transmission service related to CTRs in one of two ways: (1) by continuing to follow the tariff, business, and scheduling practices with their PTOs; or (2) subject to certain preconditions, by shifting their scheduling relationship to one in which they schedule directly with RTO West. In either case, any congestion charges associated with schedules that do not conform to the terms of the corresponding CTRs would be the responsibility of the party that submitted the schedule.

Under the first option, the Contract Customer sees essentially no difference in the exercise of its contract rights when comparing pre- and post-RTO West circumstances. From the Contract Customer's point of view, the PTO continues to be the party that provides the contract services. From the PTO's point of view, it relies on RTO West to honor the CTRs that enable the PTO to implement the schedules it receives from its Contract Customers.

Under the second option, the Contract Customer participates in the process of cataloguing the CTRs related to its transmission contract rights. The Contract Customer and the PTO must agree on both the process and the outcome of the cataloguing process. In effect, the Contract

Customer makes a trade-off: in exchange for the ability to deal directly with RTO West in scheduling transmission service on the basis of CTRs, the Contract Customer agrees that the CTRs are accurate and that it will look only to RTO West (not the PTO) to resolve problems with RTO West's delivery of CTR service.

After the initial cataloguing process for CTRs and Congestion Management Assets is completed (and RTO West has satisfied itself of the individual and aggregate sufficiency of the PTOs' Congestion Management Assets), each PTO's catalogue will need to be periodically updated.¹⁸ The timing of catalogue updates will need to be coordinated with RTO West's FTO auction process. In particular, RTO West will need current catalogue provisions before it determines what FTOs it should release through its auctions (because RTO West must take into account anticipated use of its transmission system to honor CTRs as part of that determination).

There are a number of events that might trigger the need to update a PTO's catalogue entries (adhering always to the principle that each PTO's CTRs and Congestion Management Assets must balance). One of the most important of these is load growth. Where a PTO has an obligation under a pre-existing contract or based on load service to provide transmission capacity to accommodate load growth, the PTO will be allowed to revise its catalogue whenever these obligations are triggered. Any changes to a PTO's Congestion Management Assets would also need to be recorded. Moreover, a pre-existing contract might expire or its terms may permit periodic modifications or elections among different terms and conditions. The related catalogue entries will need to accurately reflect these. Each time the terms of a particular PTO's catalogue entries change, RTO West will need to repeat its individual and aggregate adequacy testing to make sure that each PTO continues to meet its obligations.

D. Further Work to Develop Details

This paper is intended to be a high-level description of the key elements of the congestion management proposal for RTO West. The filing utilities propose to do further detailed work in the following areas:

- ancillary services;
- the scheduling and settlement processes (including such matters as how losses should be factored into scheduling; dynamic scheduling; equitable means for accommodating intermittent resources; and the rules and procedures for dealing with planned and forced facilities outages);
- recommendations concerning use of nodes and hubs that subsume more than one bus;

¹⁸ In addition, any cataloguing errors discovered after the initial cataloguing process is completed will be corrected by reference to the underlying transmission contract or load service obligation. Billing errors discovered before settlement that have resulted from cataloguing errors will also be corrected, subject to whatever rules RTO West implements concerning correction of erroneous bills.

- the FTO auction process;
- coordinated operation of phase shifters and DC ties; and
- testing and validation of the congestion management proposal.

In particular, the filing utilities recognize that congestion management and the provision of ancillary services are tightly related. It is therefore expected that the pricing of the ancillary services (and Interconnection Operations Services) markets will be compatible with bidding for and pricing of services to manage congestion on RTO West system. This may include the need to merge the market for balancing energy with the congestion management redispatch market.

The filing utilities also recognize the importance of congestion management and ancillary services as they relate to the larger goal of seamless western markets. The filing utilities intend that further work related to the RTO West congestion management proposal will mesh with the interregional coordination activities currently underway among representatives of RTO West, the California ISO, and WestConnect.

E. Comprehensive Review After Three Years

The filing utilities intend that RTO West Board will use its best judgment to balance two important goals for the congestion management system described in this paper: (1) providing adequate opportunity for the congestion management system and the markets that support it to mature and to work out initial minor “kinks”; and (2) protecting PTOs, market participants, end use consumers, and transmission system reliability from unreasonable exposure to harm if there are aspects of the congestion management system that prove unworkable.

The filing utilities therefore contemplate that the Board will have, from the beginning of RTO West’s commercial operations, the authority to modify the congestion management approach set out in this document if circumstances warrant (subject to certain principles described below). If the Board sees no need for change, it need not make any. At the end of three years of commercial operations, however, the Board will have an obligation to conduct a thorough, formal evaluation of RTO West’s congestion management system. The Board will then need to decide whether it believes the best course is to continue with the congestion management system as then in effect or to modify it.

If the Board elects to modify the congestion management system (either during the initial three years of commercial operation or because of its formal evaluation at the end of three years), it must do so in a way that neither expands nor diminishes whatever transmission- or congestion-related rights are then outstanding (whether based on pre-existing contracts or load service obligations or on FTOs purchases directly from RTO West or in the secondary market). In addition, any modified approach to congestion management the Board adopts must conform to the following principles:

- a. accommodates broad participation;

- b. sends efficient price signals to all users about the consequences of their transmission usage decisions;
- c. provides least-cost redispatch of generation (from the voluntary redispatch bid stack) to relieve the expected congestion;
- d. encourage use of transmission rights by those that value them most highly;
- e. sends signals for appropriate investment (generation, including generator location; transmission; demand-response; etc.);
- f. facilitates development of hedging tools;
- g. provides for liquidity and tradability;
- h. provides incentives that enhance RTO West's ability to determine available capacity in advance of Day-Ahead scheduling;
- i. does not impede reliability;
- j. promotes the ability to detect and respond to gaming and market power abuse;
- k. supports a broad, seamless market; and
- l. supports a Board determination that there is reasonable proportionality between costs incurred and benefits to customers.

F. Appendices

Appendix A – Glossary of Key Terms and Acronyms

Appendix B – Draft Supplemental Procedures and Rules for Cataloguing and Conversion

APPENDIX A

GLOSSARY OF ACRONYMS AND KEY TERMS

Board – the Board of Directors of RTO West.

California Oregon Border – an energy trading hub in the Northwest.

Catalogued Transmission Right – a right based on an entry in a Participating Transmission Owner’s catalogue (which identifies its obligations under pre-existing transmission agreements and load service obligations) that specifies the Participating Transmission Owner’s right to schedule RTO West transmission service as necessary to fulfill those obligations.

Cataloguing – the process through which RTO West and a Participating Transmission Owner work together to compile necessary information related to (1) the nature and extent of the Participating Transmission Owner’s outstanding transmission service obligations related to non-converted, pre-existing transmission contracts and load service obligations (which defines the Catalogued Transmission Rights that the Participating Transmission Owner may use to schedule RTO West transmission service related to those contract and obligations); and (2) the Congestion Management Assets the Participating Transmission Owner will make available to RTO West so that RTO West can honor and manage all Participating Transmission Owners’ Catalogued Transmission Rights.

COB – California Oregon Border.

Commission – the Federal Energy Regulatory Commission.

Congestion Management Assets – the physical facilities and contractual and operational mechanisms that each Participating Transmission Owner makes available to RTO West so that RTO West has the means to honor and manage all Participating Transmission Owners’ Catalogued Transmission Rights. Physical facilities may include transmission lines, substations, phase shifters, and other hardware. Contractual and operational mechanism may include items such as remedial action schemes (RAS), redispatch services, and rights to restrict service under pre-existing contracts.

Contract Customer – the transmission customer that receives transmission service from a Participating Transmission Owner under non-converted, pre-existing transmission contract or load service obligation. A Contract Customer may be a merchant or affiliate of a Participating Transmission Owner or a third party.

Conversion – the voluntary process through which a Contract Customer translates rights under pre-existing transmission agreements into Financial Transmission Options.

CTR – Catalogued Transmission Right.

Day-Ahead – the day before a given operating day.

Dec – a decrease in generation output (or an increase in dispatchable load) in response to an RTO West instruction

Financial Transmission Option – a financial instrument that the gives the holder the right to receive a credit from RTO West equal to: (a) the congestion price differential (within a specified hour) between its defined withdrawal and injection locations, multiplied by (b) the megawatt quantity specified in the instrument.

FTO – Financial Transmission Option.

Inc – an increase in generation output (or a decrease in dispatchable load) in response to an RTO West instruction

MCHC – Mid-Columbia Hourly Coordination Agreement.

Mid-Columbia Hourly Coordination Agreement - the agreement under which hydroelectric project operators coordinate Real-Time operation of the hydroelectric generation projects in the Mid-Columbia area.

Pacific Northwest Coordination Agreement – the agreement under which resources in the Pacific Northwest are coordinated to maximize the firm load carrying capability of those resources (within the limits of applicable non-power constraints).

Participating Transmission Owner – an owner of transmission facilities that has entered into an agreement with RTO West providing for RTO West to exercise operational control and management of the Participating Transmission Owner’s transmission facilities

PNCA – Pacific Northwest Coordination Agreement.

Pre-existing transmission agreements (or contracts) – any agreement (or load service obligation) under which a Participating Transmission Owner is obligated to provide transmission service at the time it joins RTO West.

PTO – Participating Transmission Owner.

Real-Time – in the timeframe during a given operating hour.

Scheduling Coordinator – an entity that has met the technical and financial requirements necessary to qualify for eligibility to submit transmission service schedule requests to RTO West.

APPENDIX B

DRAFT SUPPLEMENTAL PROCEDURES AND RULES FOR CATALOGUING AND CONVERSION

1. Cataloguing Procedures

As explained in the accompanying discussion paper, the procedures for identifying and recording CTRs will allow for a joint determination process for a PTO and any party that receives service under PTO contract or load service obligation (the “Contract Customer”) in those cases where the Contract Customer has elected to take service directly¹ from RTO West.

At a minimum, the CTR cataloguing process will need to record the following information:

- Term – the start and end date during which the obligation is to be honored.
- Injections – the catalogue will include specified injections, which will be defined in terms of injection locations and maximum amounts to be honored at each location
- Withdrawals – the catalogue will include specified withdrawals, which will be defined in terms of withdrawal locations and maximum amounts to be honored at each location.
- Relationship between injections and withdrawals – The sum of the maximum amounts at the injection locations do not necessarily have to equal the sum of the maximum amounts at the withdrawal locations.
- Special rules –to the extent that there are special limitations or exceptions that cannot be captured by the set of injections and withdrawals, special rules would govern the use of the CTR. This may be, for example, a description of the limits of permitted schedule changes or a description of the interdependency between maximums allowed at particular injection and withdrawal locations (*e.g.*, the injection limit at location A is 100 megawatts and the injection limit at location B is 75 megawatts, however the sum of injections at A and B must not exceed 125 megawatts).

¹ Taking service from RTO West does not imply that the CTR has been converted to FTOs, but does imply that the Contract Customers has or will establish a scheduling relationship with RTO West by either becoming or arranging for the services of a Scheduling Coordinator.

2. Conversion Procedures and Principles

The conversion of a CTR to an FTO provides a mechanism for Contract Customers to convert their existing transmission rights into tradable rights. Conversion is available only to Contract Customers that are willing to establish a relationship with RTO West through a Scheduling Coordinator.

There are several steps in the process of converting a CTR into and FTO. Each of the steps is grounded in the parties' ability to rely on the integrity of both the cataloguing process and the steps related to conversion.

With respect to the cataloguing process, Contract Customers will need assurance that there will be no opportunity for the PTO to diminish the obligations it has to honor all its pre-existing contract and load-service obligations. This principle means that a PTO may not, through the cataloguing process, overstate its rights to curtail or limit its transmission service obligations to its Contact Customers.

For purposes of this Appendix B, the terms "curtail" and "curtailment" are intended in the sense they are used under the FERC Order 888 Open Access Transmission Service Tariff. They relate to a system operator's right to physically interrupt transmission service, on a pro-rata basis, as necessary to preserve system reliability in Real-Time.

Other terms that excuse the transmission provider's performance under a transmission service contract are referred to in this paper as "contract restrictions." These may include the ability to refuse, interrupt, or decrease service to preserve system reliability in Real-Time or for other reasons.

The cataloguing process will assume that all CTRs are subject to RTO West's curtailment as necessary to preserve system reliability in Real-Time. The cataloguing process may not incorporate any contract restrictions that are not specified in the terms of the pre-existing transmission agreement (including any tariff provisions that apply to the agreement). RTO West's testing to assure the sufficiency of a PTO's Congestion Management Assets will require that the assets be sufficient to fully meet all contract obligations in accordance with their terms.

The workability of the conversion process depends not only on the accuracy of the cataloguing process, but also on the ability of PTOs that provide Congestion Management Assets to be assured that the conversion process will not cause the Contract Customer's rights to expand beyond what the Contract Customer is entitled to under the pre-existing agreement and will not increase the burden on the PTO's Congestion Management Assets.²

² This is not intended to disregard that there may be collateral effects due to disaggregation of some CTRs.

A Contract Customer that wishes to convert its CTR to FTOs must complete the steps described below with reasonable lead-time before any significant FTO auction (such as an annual or six-month auction). (Note: A fundamental premise is that conversions are done for a specified term. Upon expiration of the FTO conversion term, the rights revert back to the original CTRs, if still in effect.)

2.1 Select Complete or Partial Conversion

The Contract Customer may specify full conversion of a CTR for the six-month block or may specify a partial conversion.

Partial conversion may be temporal (selecting specific months within the six month block to do a full conversion) or may be in terms of a percentage of rights (or both). In the percentage of rights model, the Contract Customer will specify what portion of its CTR will be converted to an FTO with the remaining CTR adjusted so that the sum of the FTO and the adjusted CTR does not expand the rights under the original CTR. It may be necessary for RTO West to limit the rules for partial conversions to the extent needed to keep them workable.

2.2 Steps for Completing Conversion

With the principle set forth above in section 2 as the foundation, the steps for converting CTRs to FTOs will be as follows:

1. The Contract Customer voluntarily initiates the conversion process.
2. If the Contract Customer has previously agreed upon the CTR to be converted, the next step in the process is step 4.
3. If the Contract Customer has not previously agreed upon the CTR to be converted, then the PTO and the Contract Customer must reach agreement concerning the CTR.
4. Based on the agreed-upon CTR, the Contract Customer selects a single feasible dispatch for each month (for both on-peak and off-peak) covered by the CTR, which must take into account any contract restrictions.
5. RTO West will test the Contract Customer's selected feasible dispatch set to make sure it: (1) is consistent with CTR; (2) provides FTOs with equivalent (but not greater) value; and (3) doesn't increase the burden on the PTO's Congestion Management Assets.
6. The PTO will have the right to receive notice of the conversion and review RTO West's determinations concerning the feasible dispatch and FTOs to be issued.

7. Both the Contract Customer and the PTO will have rights to invoke RTO West's dispute resolution process if they do not agree with RTO West's determinations made under step 5.
8. Once the conversion process is completed, RTO West and the PTO must adjust the PTO's catalogue of CTRs and Congestion Management Assets to reflect the conversion.

There are numerous addition details with respect to the conversion process that would need to be worked out, but the foregoing are key steps that should be followed, consistent with the principles set forth above in section 2 of this Appendix B.

3. Cataloguing and Conversion Rules

The congestion management proposal contemplates that rules for cataloguing and converting PTOs' pre-existing contracts and load service obligations would be consistent for all PTOs (and other parties who wish to convert pre-existing contracts to RTO West service), but would be structured into a variety of categories tailored to fit different types of contracts. Thus, while a given type of contract (say, "Category A"), would be subject to identical rules for all parties who have "Category A" contracts, the rules for "Category A" contracts as a group might not be identical to the rules for "Category B" contracts as a group.

With that background, presented below are suggested sets of cataloguing and conversion rules for a range of contract and load service obligation types. The rules for cataloguing describe how the PTO with the obligation to provide transmission service to fulfill a contract or a load service obligation will identify those obligations within its catalogue with RTO West. The rules for conversion describe how the party that receives service under PTO contract or load service obligation (the "Contract Customer") can convert those contract rights in to FTOs.

These categories set out below may not be exhaustive, but they are intended to encompass most types of contracts and load service obligations we have identified so far.

Each PTO's catalogue entries will be periodically updated as necessary to reflect such items as load growth (where provided for in the underlying contract or load service obligation), changes in PTO Congestion Management Assets, changes to or the exercise of elective rights under pre-existing contracts included in the catalogue, etc. Any errors in cataloguing will be corrected promptly upon discovery by reference to the underlying contract that governs the right.

RTO West will correct any billing error resulting from a cataloguing error that is discovered before the bills become final. Any billing disputes that arise as a result of a catalogue error will be resolved through RTO West's dispute resolution process.

3.1 Rules for Cataloguing and Conversion Related to Load-Based Obligations

(a) Cataloguing

The load-based obligation category covers obligations that are tied to following firm load (a load service obligation and network contracts are examples). The location of the load defines the set of withdrawals with maximums based on the actual load served. Because the load is not known ahead of time, the catalogue will state an estimate of the maximum based on a load forecast. Each Scheduling Coordinator exercising catalogued rights (CTRs) based on these types of obligations will give RTO West a revised maximum load forecast at during the Day-Ahead scheduling process.

When cataloguing load-based obligations, the PTO will specify a set of injections based on the physical and contract resources the PTO uses to serve the particular load. While the maximum injection at each injection point is equal to the physical capacity of the system, the sum of the injections should not exceed the corresponding contract (or load service) obligation at the time of injection. If a load-based contract is tied to physical facilities or specifies contract resources, the generation limit specified in the contract is the maximum permitted injection.

Some load-based obligations (such as General Transfer Agreement (GTA) service) represent network and point-to-point service across more than one PTO's system. The transferring PTOs will catalogue³ the rights from the Points of Replacement to the Points of Delivery much as the other load-based obligations above. In addition, they will be required to coordinate their catalogue entries to ensure consistency.

If a contract or load service obligation is subject to service restrictions or addresses ancillary services, the catalogue entry for that contract or load service obligation will include a "special rules" section that describes those restrictions or ancillary service provisions.

(b) Conversion

The filing utilities believe that if RTO West is able to identify workable rules with respect to full or partial conversion of network contracts or load service obligations, there are potential benefits from these conversions. These rules will be designed to protect against unintended consequences. They must also ensure that conversion does not enable the Contract Customers to obtain greater rights than granted by the contract and that neither the PTO nor other market participants are harmed by the conversion.

³ For example a GTA between PTOs would show up in the catalogue of both PTOs. The PTO receiving GTA service would show it as a contractual asset and the PTO providing GTA service would show the contractual obligation.

3.2 Rules for Cataloguing and Conversion Related to Demand-Based Contracts

(a) Cataloguing

The demand-based obligation category covers obligations that are tied to contracts that specify demand limits. For most contracts the demand is fixed and the procedure is fairly straightforward. The contract's points of delivery define the set of withdrawal points. The maximum withdrawal quantity will be as specified in the contract. The set of injections will be based on the points of receipt or points of integration with maximums based on the demand specified in the contract.

In some cases, demand-based contracts act like ownership-based contracts and would need to be catalogued in a similar fashion (see the description under Ownership for the appropriate catalogue rules). An example of this type of contract would be a contract that gives a right to transmit between points A and B in both directions so long as the net usage is within the demand limit for that direction. In that case the catalogue rules for a bi-directional, simultaneous "ownership-based" contract would be appropriate.

(b) Conversion

The Contract Customer with rights under a demand-based contract may fully or partially convert its demand-based contract rights using standard conversion procedures – that is, the Contract Customer would specify a single feasible dispatch, and the FTOs into which the contract rights convert would correspond to the injection and withdrawal points and demand maximums specified in the contract. Point-to-point contracts with a single point of delivery and a single point of receipt have no "optionality" to lock down, so the resulting FTOs correspond exactly to the terms specified in the underlying CTR (for a full conversion). With contract with multiple points of receipt and points of delivery, the Contract Customer may fully or partially convert its demand-based contract using the standard conversion procedures.

In cases of demand-based contracts that have properties similar to a bi-directional, simultaneous "ownership-based" contract (described below under section 3.3(a)(1)), the conversion rules for a bi-directional, simultaneous "ownership-based" contract would apply.

3.3 Rules for Cataloguing and Conversion Related to Ownership and Ownership-Like Rights

(a) Cataloguing

The ownership obligation category covers obligations that are tied to ownership (either direct or by lease) of a transmission facility. The point of injection and point of withdrawal are defined as either end of the transmission line segment (denominated in the examples below as A and B, with assumed line ratings of 100 MWs from A to B and 75 MWs from B to A). Ownership

rights may take the form of bi-directional and simultaneous use, bi-directional and non-simultaneous use, or uni-directional use (the rules for each of which are described separately below). Because each form has slightly different implications they will need to be treated differently.

1. Bi-directional and simultaneous use

The bi-directional and simultaneous use category is for contracts under which the Contract Customer has the ability to use the path in either direction and at the same time. The net of the two schedules must be within the line rating for the net flow. For example assume schedule 1 is 200 MWs injected at A and withdrawn at B, schedule 2 is 125 MWs injected at B and withdrawn at A. This nets to 75 MWs injected at A and withdrawn at B. Note that each schedule individually exceeds the path rating (noted above) but that the net use is within the rating. This implies that the two schedules must be linked and that if one schedule is altered then the other schedule must be adjusted so that the net use is within the applicable path rating. The catalogue for this type of obligation would show both points as injections and both points as withdrawals. The maximums would be governed by special rules that would represent the interdependency (injection (A) - withdrawal (A) must be between +100 and -75 and injection (B) - withdrawal (B) is between +75 and -100).

2. Bi-directional and non-simultaneous use

The bi-directional and non-simultaneous use category is for contracts under which the rights holder has the ability to use the path in either direction but not at the same time (up to 100 MWs from A to B OR up to 75 MW from B to A). The catalogue for this type of obligation would show both points as injections and both points as withdrawals with the associated directional line limits as the maximum (in this example Injection set = [100 @ A, 75 @ B] and Withdrawal set = [75 @ A, 100 @ B]).

3. Uni-directional use

The uni-directional use category is for contracts under which the rights holder has the ability to use the path in only one pre-defined direction (up to 100 MWs from A to B). The catalogue for this type of obligation would be similar to a uni-directional demand based contract (e.g. PTP) in that there is a single point of injection and a single point of withdrawal specified with the associated directional line limit as the maximum (in this example Injection set = [100 @ A] and Withdrawal set = [100 @ B]).

(b) Conversion

The Contract Customer may fully or partially convert its ownership/leased-based contract using the standard conversion procedures with the following exception:

In the case of bi-directional rights with simultaneous use, the rights-holder may fully or partially convert its contract using the standard rules except that the CTR should be first translated into two separate CTR with the path rating for each direction establishing the maximum injection and withdrawal amounts (in the earlier example one CTR would be 100 MWs injection at A and

withdrawal at B, and the other would be a 75 MW injection at B and withdrawal at A). The full or partial conversion would then be applied to either or both CTRs, but the conversion process outcome is limited by the interdependence of simultaneous use so that it does not create more FTOs than the rights underlying the contract. (Thus, in the earlier example positing a maximum simultaneous use of 125 MW, the resulting FTOs could not be greater than the simultaneous maximum.)

3.4 Rules for Cataloguing and Conversion Related to Regional Coordination Agreements (PNCA and MCHC)

(a) Cataloguing

The regional coordination agreement category is for obligations that are tied to multi-party resource operating agreements. Because these agreements are resource based (rather than load-based), transfer of power can be viewed to be between resources. These agreements do not guarantee service to load, so the Contract Customer would be responsible for getting power from its resource to its load via a separate transmission agreement. This means that both the points of injections and points of withdrawals are defined at the resources identified (and coordinated) in the agreements. Because each agreement has slightly different implications, they will need to be treated separately.

The catalogue should capture the range of possibilities of Pacific Northwest Coordination Agreement (“PNCA”) transactions (In Lieu Energy, Provisional Energy Return, Interchange Energy, etc.). The points of injections and points of withdrawals would be each of the Coordinated System resources (as submitted annually in PNCA planning). This sets up a resource-to-resource exchange where each party’s normal load serving transmission agreements would be used to take the energy from its resource to its load). The maximum amounts of injections and withdrawals would be based on the most recently completed annual operating plan and the interchange estimates derived from the range of maximum and minimum Interchange Energy amounts out of the annual PNCA Headwater Benefits study. The catalogue for PNCA transactions should be updated annually after the PNCA Final Regulation is complete (to capture resource additions and operating plan changes).

Given the real-time nature of Mid-Columbia Hourly Coordination Agreement (“MCHC”) operations and the close proximity of the resources included in MCHC, the MCHC projects should be grouped into a single node for cataloguing purposes. (It may be preferable to handle this as a matter of regulation or dynamic scheduling, rather than schedule adjustments.)

(b) Conversion

Given the special nature of these agreements, they will not be eligible for conversion into FTOs.