

**Electricity Market Design and Structure:  
Working Paper on Rate and Transition Issues in  
Standardized Transmission Service and  
Wholesale Electric Market Design**

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**I. OVERVIEW**

These comments are submitted on our own behalf in connection with the Commission's deliberations on "Options for Resolving Rate and Transition Issues in Standardized Service and Wholesale Electric Market Design" (Options Paper) distributed April 10, 2002. The intent of the Options Paper and these comments is to further define the direction and framework for subsequent development of transmission revenue recovery mechanisms and related subjects of a future rule. The Options Paper provides a clear description of most of the significant policy issues and choices in the recovery of transmission revenue requirements and the allocation of financial transmission rights under the Standard Market Design (SMD). These comments refine some of the questions for which the subsequent process would seek the answers.

The comments below highlight a few considerations not addressed in the Options Paper that have a potentially significant impact on market efficiency and cost shifting. The comments focus in particular on some interrelationships among the choices described in the Options Paper; several combinations of the choices should provide workable rate structures to support open access transmission service, while other

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combinations would not be consistent and could lead to serious market problems.<sup>2</sup> It therefore may not be possible to consider the issues raised by the FERC staff as a series of independent choices. Instead, it appears that there is a more limited set of internally consistent approaches to cost and transmission rights allocation among which the Commission, market participants and regulators will need to choose.

## **II. CURRENT SERVICES AND RECOVERY OF TRANSMISSION REVENUE REQUIREMENTS**

The Options Paper discusses proposed changes in network and point-to-point transmission service and the conversion to a single form of transmission service, called Network Access Service. A number of choices remain with regard to the design of the access charge for the Network Access Service; these will determine the relative responsibilities of different customers for paying the transmission embedded costs.

We agree that an important objective in the design of the access charge should be to recover the sunk costs of the transmission grid in an equitable manner, while minimizing impacts on the efficiency of short-term markets. One might ask why the recovery of transmission embedded costs should matter, since these costs are sunk, and the allocation of sunk costs should not in general affect economic efficiency or future investment decisions. First, equity per se is a consideration in many regulatory decisions. Second, fully efficient rules for sunk cost recovery are neither unique nor easily implemented. There are principles that can be applied, but these require both tradeoffs and careful consideration of the interactions.<sup>3</sup>

In the present circumstances, cost recovery also has further potential efficiency impacts because the willingness of states, transmission owners, and LSEs to participate in Regional Transmission Organizations (RTO) will depend on the assurance of equitable treatment and the consistency of the treatment between and among RTOs. A reasonably efficient and consistent allocation of the sunk costs associated with historic investments in the transmission grid is needed to initiate, speed and foster the development of RTOs.

The method of allocating transmission sunk costs through the design of the access charge also may affect the ongoing economic efficiency of RTO coordinated markets to the extent that it affects the allocation of costs and benefits associated with future investments. Thus, it is important to ensure that the method of allocating the sunk transmission costs associated with past transmission investments does not distort or eliminate the incentives for merchant transmission investments on a going-forward basis.

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<sup>2</sup> For instance, the Options Paper recognizes that the method for calculating the access charge, and the determination of who pays the charge would likely depend on the method for allocating Transmission Rights.

<sup>3</sup> For a further discussion of principles for pricing to recover sunk costs and an elaboration of the tradeoffs, see Transpower, "Confirmed Pricing Methodology: Final Design Principles," Transpower, New Zealand, March 29, 2002. (available at [www.transpower.co.nz](http://www.transpower.co.nz)).

The specific questions raised by the Options Paper are which transmission customers should pay the access charge, and whether the charge should be paid for exports and wheels through. The final question concerns the method for allocating embedded costs across customers in the calculation of the access charge; specifically, whether the assignment should be based on monthly or annual peak load or on total MWh usage. Comments are offered below concerning these three questions. The response to the second question, about whether the access charge should apply to exports and wheels through, initiates a broader discussion of whether point-to-point service should be eliminated in the Standard Market Design in favor of a single form of transmission service.

**A. Who Pays the Access Charge for Deliveries within the Transmission Provider's System?**

At present, both PJM and New York assign responsibility for the purchase of network service to the ultimate LSEs that withdraw power from the transmission system. This is option two described in the Options Paper, "Access charge is paid only by customers that take power off the grid." The Options Paper also considers two other alternatives, neither of which would appear to be workable or efficient.

First, the Options Paper considers whether responsibility for payment of access charges might be assigned to all transmission customers that schedule transmission service, including intermediate transactions. This is labeled option one. Under this approach, if transmission service were scheduled from generation to the PJM Western hub, the title were transferred at the Western hub, and another entity scheduled transmission service from the Western hub to load, two access charges would be payable. This option for assigning access charges would burden intermediate transactions, deterring market participants from scheduling such transactions through the ISO.

This impact would likely be short-lived, however, because if option one were chosen, intermediate transactions would quickly become financial, in the form of contracts for differences, rather than being physically scheduled (or financially in the case of PJM eschedules) with the RTO. That is, market participants could continue to structure their hedging transactions at the Western hub, by structuring them as CFDs rather than submitting actual transmission schedules that would subject them to pancaked access charges. The assignment of access charges would simply inconvenience market participants.<sup>4</sup> Therefore, option one, even if chosen, would likely transform quickly into option two, as all intermediate transactions would become private, bilateral financial deals.

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<sup>4</sup> The system of access charges under option one would also need to be applied to energy market transactions by which a generator sold energy at one location and a load bought energy at another location. It would be unworkable and inefficient from an LMP and least cost dispatch perspective, however, to impose multiple access charges on such transactions.

The option one approach to assigning access fees would likely cause further distortions when applied to a two-settlement system. Would the access charge be applied to all day-ahead schedules, even if the power did not flow in real-time? Such a rule might discourage hedging by load in the day-ahead market, which would be a bad idea. Would the access fee be refunded if a transaction were scheduled day-ahead but the power did not flow in real-time? There is no need to introduce these kinds of complications into the collection of access fees or to potentially discourage participation in day-ahead markets, since these problems can be readily avoided by assigning access fees based on actual withdrawals of power.

Second, the Options Paper questions whether it might be appropriate to link the obligation to pay the access charge to the receipt of financial transmission rights or auction revenue rights. This approach, called option three, would in general not be workable because, practically speaking, transmission system congestion rents are materially less than the annual revenue requirements of the transmission owners. If market participants could choose to either pay no access fee, receive no transmission rights and pay congestion charges, or to pay the access fee, be awarded transmission rights, and pay no congestion charges, the rational choice would be to forgo receipt of financial transmission rights in order to avoid paying the access fee. This reality would preclude the transmission owners from recovering their transmission revenue requirement and would be inconsistent with Order 888 principles.

#### **B. Should the Access Charge Apply to Exports and Wheel-Throughs?**

The Options Paper raises the question of whether transmission access charges ought to be assigned to wheel-through and export transactions. The discussion appears to be based on the premise that all load will be paying a Network Access Service charge based on its membership in an established RTO. From this perspective, the access charge for an export or wheel through would be in addition to the access charge paid by the load for deliveries within its own RTO. It is important to recognize, however, that the sink for power exported from an RTO might not be a load within another RTO, paying an access charge within its own RTO. Instead, the sink might be an entity on the border of an existing RTO, or even islanded within an existing RTO, that participates in no RTO, perhaps because it is seeking to free-ride on the transmission system paid for by others.

The observation that not all loads may belong to an RTO, at least initially, raises a fundamental question about whether point-to-point service should be eliminated from the Standard Market Design, in favor of a single form of transmission service. The point-to-point service available under the PJM and NYISO tariffs is intended among other things to govern the terms under which load serving entities that do not belong to any RTO may use the transmission systems that are under the control of the ISOs. These terms include rates and other tariff terms that provide open access for exports and wheel throughs, while discouraging free riding. An important and common principle of the PJM and New York LMP market designs is that all market participants must pay an appropriate share of the embedded costs of the transmission system.

In PJM and New York, open access for exports and wheel throughs is provided by basing charges to point-to-point customers<sup>5</sup> on MWh schedules or reservations, rather than on total transmission customer load. A fundamental difference between network service and point-to-point service is that network service customers pay access charges based on all of their load, and point-to-point customers pay access charges based on MWh schedules or reservations. Thus, transmission customers in New York seeking to export power from PJM to meet load in New York pay access charges to PJM based on the power exported, not based on their total load. It is not clear whether the Options Paper intends for the Network Access Service charge for exports and wheel throughs to be paid as a demand charge for all network load. If it were, it would have a dramatic impact on inter-RTO transactions. A single network service that applied to inter-RTO transactions as well as intra-RTO transactions and required payment of an access charge based on the total load of the recipient would appear to greatly discourage inter-RTO transactions.

While providing a point-to-point rate that is consistent with open access for exports and wheel throughs, PJM and the NYISO also place some restrictions on the use of point-to-point service. For instance, in both regions, parties that elect point-to-point service may have restricted access to market-based balancing services, since these service could be provided from generating resources that RTO members have placed under dispatch in order to meet other RTO requirements.<sup>6</sup> Eliminating all restrictions on the use of point-to-point service under the PJM and NYISO tariffs and allowing all entities to receive the benefits of network service without placing their load under the RTO tariff would be desirable if all loads were members of some RTO, but would potentially be problematic if applied to LSEs that do not participate in any RTO.

Similarly, the elimination of access charges on wheeling through or export transactions might be efficient if applied to exports from one RTO to another, but would discourage RTO participation if applied to LSEs not participating in any RTO. In the latter circumstance, an ability to reduce costs by not participating in any RTO could potentially motivate LSEs to withdraw from the existing ISOs, in order to reduce access fee payments. This would shift-costs, reduce market efficiency and potentially create new barriers to use of the transmission system. The FERC should be cautious about disturbing the approach taken to network and point-to-point service by PJM and NYISO. Changes in the terms and pricing of transmission service for export and wheel-through transactions should be limited to inter-RTO transactions and should not apply to the service provided to LSEs that do not participate in any RTO.

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<sup>5</sup> In both New York and PJM, point-to-point service is used for exports and wheels-through.

<sup>6</sup> In New York, access to market-based balancing services is provided if an entity signs the Control Area Services Tariff, in which case it is subject to installed capacity requirements.

### **C. Is the Access Charge Billed Based on Peak Load or Total Usage?**

The Options Paper also discusses the allocation of access charges across the transmission customers of a given transmission owner, focusing on differences in customer load factors and questioning whether the access charge should be based on peak load or total energy usage. The discussion overlooks the inter-relationship between the allocation of financial transmission rights and the assignment of embedded costs. In New York, financial transmission rights are auctioned, the auction revenues deducted from the transmission revenue requirement, and the residual revenue requirement recovered through the access charge. The access charge is therefore effectively a charge for uncongested transmission service and it is paid by all loads on a per MWh basis. Collection of a variable MWh charge to recover sunk costs involves some loss of efficiency, but limiting it to the total load and not to the source of the power makes the charge neutral with respect to use of the transmission system. Transmission customers that wish to be hedged against congestion at the system peak must purchase financial transmission rights in the auction and must pay more than transmission customers that pay only the access charge to use the system when it is unconstrained.<sup>7</sup>

Conversely, in PJM financial transmission rights are allocated to the LSE/transmission customer based on their transmission reservations and access charges are recovered on a peak MW basis. Under this system, it is not appropriate to describe the LSE/transmission customer as paying for unconstrained transmission service, since it is awarded FTRs that hedge congestion, and a different type of access charge is appropriate.

Our point is that neither the New York nor PJM approach to the billing units for the access charge is necessarily preferable, but that both approaches are internally consistent and an approach that mixes the approaches would probably be inferior to either.

A final point is that it may be easier to run a settlements system for an access charge based on actual MWh use (or schedules in the case of exports and wheel throughs) in regions expecting active retail access markets, where customers might switch suppliers during the year and month. (This problem might be avoided by billing a demand-based access charge through the LDC rather than through the retail supplier.)

### **D. Firm and Non-Firm Service**

The commenters agree that there is a diminished distinction between firm and non-firm service under an LMP system, except to the extent that firm transmission service is accompanied by an assignment of financial transmission rights. The discussion of this issue in the Options Paper may have in mind a system in which non-firm service

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<sup>7</sup> In practice it is possible that the transmission system may not be constrained at the system peak, because high cost generation close to load is in use at the system peak. If this were the case, it is not evident that it would be appropriate to allocate transmission costs based on load responsibility for the system peak.

would have lower priority than firm service in instances in which the RTO was not able to economically redispatch the transmission system to manage congestion and might be interpreted as suggesting that at times of peak demand, “non-firm” transactions (transactions that do not match financial rights?) might be curtailed in favor of “firm” (transactions that match the underlying financial rights?). Such an approach would unnecessarily maintain vestiges of the old pro-forma service within the LMP market design. Under LMP, priority for scheduling and use of the system should be based, whenever possible, on the level of congestion charges that the party is willing to pay. In particular, the Commission needs to avoid inadvertently creating incentives for transmission customers to act inflexibly during shortage conditions. Thus, if a generator that responded to dispatch instructions in a manner that caused its injections and withdrawals to not match its financial rights risked having its transmission usage classified as non-firm and being required to shed load, that generator would rationally choose to operate inflexibly in shortage conditions, yet that inflexibility might itself prevent the RTO from redispatching generation to best utilize the transmission system and ultimately lead to load shedding.

### **III. TRANSITION OF CUSTOMERS UNDER EXISTING WHOLESALE CONTRACTS AND BUNDLED RETAIL CUSTOMERS LOAD TO TRANSMISSION SERVICE UNDER THE REVISED PRO FORMA TARIFF**

In transitioning to the Standard Market Design, it will be important for the Commission to retain flexibility to accommodate regional differences in the treatment of pre-SMD transmission contracts during a transition period. Substantial cost shifting could be created by the cancellation of existing agreements and the parties affected by this cost-shifting have the ability to forestall the development of RTOs and implementation of the Standard Market Design. Hence, it will be important for the Commission to accommodate regional differences in terms of which contracts are grandfathered, which are cancelled, and which are converted to service under the Standard Market Design.

As a general matter the Commission should provide flexibility with respect to transition issues that impact the allocation of costs, but do not affect the efficiency of the SMD. It does not appear to be necessary to force the abrogation of contracts, so long as the contracts do not adversely affect the operation of the SMD system. Conversely, the Commission should not permit the treatment of pre-SMD transmission agreements to interfere with the operation of the SMD markets. An important issue that is not explicitly addressed in the Options Paper, which should be addressed in the NOPR, is the need for most (if not all) non-rate terms of non-converted transmission contracts (i.e., pre-SMD transmission contracts that are not converted to service under the standard market design) to conform to the SMD. These terms include scheduling deadlines, charges for losses, charges for ancillary services, and settlements for the withdrawal of schedules submitted day-ahead. It also may be necessary to obtain clearer specification of the injection and withdrawal location(s) for the rights remaining under non-converted contracts (even if the transmission rights remain physical) to permit the auction of financial rights for the remaining system. Parties could be permitted to grandfather the rate terms of pre-SMD

contracts, while at the same time converting their pre-SMD physical rights to financial rights. The non-rate terms of these contracts should be consistent with SMD whether or not the physical rights are converted into financial rights.

#### **IV. ALLOCATION OF TRANSMISSION RIGHTS**

A number of issues must be addressed in allocating the financial transmission rights under an LMP system. These include (but are not limited to):

- Who should receive an initial allocation of rights and, in particular, who should receive the initial allocation related to the service of native load – the transmission owner acting as a transmission owner, or the transmission owner acting as an LSE?
- Will the initial allocation be in terms of financial transmission rights, or in terms of auction revenue rights?
- How can equity be achieved between the allocation of the rights and the payment of transmission embedded costs?
- How should the initial allocation be related to historical usage of the system?
- How often should the allocation be repeated, if at all?
- How should infeasibilities be corrected, if encountered in the initial allocation of rights?

The two questions posed in the Options Paper touch upon many of these issues. Our view is that multiple workable approaches are possible with respect to these two questions, and that different regional approaches will arise, especially due to differences in the degree of generation divestiture and retail access. This does not mean that the approach to allocating transmission rights can be arbitrary. There are some basic objectives that need to be addressed by any workable approach: limiting the potential for cost-shifting that may threaten to undermine the RTO process, promoting liquid markets for financial transmission rights, creating a level playing field for retail access and minimizing transactions costs.

In this section, we offer some views on the relationship between the calculation of the transmission revenue requirement and access charge, and the allocation of the cash flow stemming from the financial transmission rights, or the auction revenue from the rights. While not the focus of the questions in the Options Paper, we believe that this nexus of issues is one of the most overlooked and difficult with regard to the allocation of the rights for an LMP system. Failure to account correctly for the cash flow associated with the transmission rights, or the auction revenue from the rights, creates the potential for over- or under-recovery of the transmission revenue requirement. If the treatment of the cash flows creates a financial disincentive for parties to sell their initial allocation of transmission rights (or an incentive to bid high to purchase the rights corresponding to

their allocation of auction revenue rights), this may impede the development of liquid markets for the rights and limit retail access. Getting the accounting for the cash flow right ultimately may be more important to the development of liquid markets for the financial rights than whether the initial allocation is done in terms of transmission rights or auction revenue rights.

#### **A. Allocation to Transmission Owners or LSEs**

The Options Paper notes that existing transmission customers having a continuing obligation to pay the embedded costs of the transmission system could be allocated either transmission rights or auction revenue rights based on their historic entitlement to usage of the transmission system, thereby preserving their current benefits and avoiding cost shifting among transmission customers. Such an effort to avoid cost shifting is an important goal of the PJM and New York transmission pricing systems and helps ensure that all market participants benefit from increased competition and market efficiency.

An important issue that is not emphasized in the FERC Options Paper is that financial transmission rights could be allocated to the transmission owners as transmission owners or as LSE/transmission customers. If either financial transmission rights or auction revenue rights are allocated to the transmission owners as transmission owners, perhaps reflecting their historical use of the transmission system to serve their native load, then under the Commission's "and pricing" rules, the value of these rights must be reflected in the determination of transmission access charges. In New York, for example, auction revenue rights are allocated to the transmission owners that earn revenue from the financial rights auction. These auction revenues are then credited against the embedded cost charges recovered through the access fees paid by LSE/transmission customers. Through this process, the transmission owner recovers its transmission revenue requirements less auction revenues from the access charges paid by transmission customers and recovers the remaining portion of its transmission revenue requirement through the auction revenues received based on the auction revenue rights.

Exactly the same methodology could be applied to in the calculation of the access charge if financial transmission rights were allocated to transmission owners; even if these rights were not sold in an auction. As long as there is a reconfiguration auction coordinated by the RTO, market prices will be available for valuing each financial transmission right assigned to a transmission owner. This value can be imputed from the market-clearing prices in the auction, whether or not a transmission right is offered for sale by the transmission owner in the auction. As in the case of auction revenue rights, the imputed value of the transmission right can be deducted from the transmission revenue requirement in determining the access charge paid by all transmission customers. If the auction value of the financial transmission right were deducted only if the right were sold in the auction but were ignored if retained, this would provide an inefficient incentive for transmission owners to retain financial transmission rights, rather than selling them and such an incentive would reduce auction liquidity. A disincentive would also occur if the deduction from the transmission revenue requirement were

administratively set at a higher level (e.g., as a shopping credit) than the revenue that the transmission provider could earn from selling the right in the auction.<sup>8</sup>

This method for assigning the value of the financial transmission rights (or auction revenue rights) in the calculation of the access charge effectively supports retail open access programs. If the transmission owner chooses to retain financial transmission rights that it has been allocated on behalf of native load (or to enter the auction to purchase rights corresponding to its allocation of auction revenue rights) the auction value of these rights would be deducted from its transmission revenue requirements, reducing the access fee paid by all native load customers, including those opting for retail access. Thus, if the transmission owner paid more than the market value for transmission rights acquired in the auction or withheld allocated transmission rights from the auction despite above-market auction prices, this would reduce the access charges paid by unregulated competitors in the retail access market by more than the value of the financial rights retained by the transmission owner.

Under retail access, the method for assigning the cash flow from the financial rights in calculating the access charge effectively insures that all of the native load of the transmission owner pays the same access charge and receives an equal share of the value of the transmission rights or auction revenue rights originally allocated to the transmission owner, without regard to whether the load has opted for retail access. All customers can then enter the auction to obtain the transmission rights that they need or to reconfigure the rights that they hold.

Allocation of auction revenue rights to transmission customers other than the transmission owner under the method described above would allow customers to retain their existing entitlements to use of the transmission system, regardless of the level of market clearing prices in the auction. Some transmission customers, such as TDUs, may wish to avoid changes in their congestion hedge position until they better understand the operation of the LMP markets coordinated by the RTO. This can be accomplished if they bid very high prices for financial transmission rights corresponding to the auction revenue rights they are allocated since, as noted in the Options Paper, they are hedged against paying high prices for the rights by the revenue received for their auction revenue rights. Similarly, if these parties were allocated financial transmission rights, they could decline to offer the rights in the auction despite very high auction prices. Transmission owners that retain their past obligation to serve but do not operate under retail access programs can also bid to retain their current transmission rights at any price without adverse financial consequences.

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<sup>8</sup> Under either the ARR or FTR method, the deduction of the market value of the initial ARR or FTR allocation from the transmission revenue requirement collected from the transmission access charge would still be recovered. If a transmission right were sold in the auction, the auction revenue would compensate the transmission owner. If the right were held by the transmission owner on behalf of bundled load, rather than being sold, the value of the right would be recovered through charges to the transmission owner's bundled retail customers.

The previous paragraphs describe the accounting that would be used under the approach in which transmission rights or auction revenue rights are allocated to the transmission owner, acting as a transmission owner. Alternatively, financial transmission rights could be allocated to LSEs or transmission customers serving the native load of the transmission owner rather than to the transmission owner as a transmission owner. In this situation, it is not clear that the Commission's "and pricing" rules would be applicable, even if the LSE/transmission customer to whom the rights were allocated were also the transmission owner. If financial transmission rights were allocated to such transmission customers on a grandfathered basis, i.e., financial rights initially allocated to an LSE/transmission customer were not subject to reallocation, there would be a potential for LSE/transmission customers that were initially allocated rights to receive much more valuable transmission rights than LSE/transmission customers that were subsequently allocated rights, although all transmission customers would pay the same access charge.

One method to address this potential inequity that is noted in the Options Paper would be to continuously reallocate transmission rights across LSE/transmission customers. Hence,  $n$  MW LSE/transmission customer loads would each be assigned  $1/n^{\text{th}}$  of each transmission right allocated to the transmission customers of a given transmission owner. This approach would provide equity across transmission customers and would support competitive retail access, but it would potentially result in an inefficiently high level of transaction costs. LSE/transmission customers would be continuously allocated fractional shares of transmission rights, which would then need to be aggregated even for sale in the auction, and would need to be tracked for the hourly settlements. If financial transmission rights were to be allocated to LSE/transmission customers, rather than to the transmission owner, it would be more workable to allocate them in the form of auction revenue rights, i.e., money, to avoid either inequity or excessive transaction costs. If fractional shares of transmission rights were allocated, many would likely be monetized, in any event, since individual LSEs would probably want to sell their fractional shares in the auction to obtain the rights that they really need to hedge their transactions.

## **B. Transmission-Dependent Utilities**

The existence of transmission-dependent utilities, as well as retail access LSEs, as transmission customers, raises another set of issues that need to be considered in allocating transmission rights during the transition.<sup>9</sup> It would be helpful in providing

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<sup>9</sup> By transmission dependent utility is meant an entity with a continuing obligation to serve load that is not the native load of the transmission owner and whose ability to serve that load requires use of the transmission owner's transmission system. The application of the second element of this criteria is not simple, as the existence of behind the meter generation and different amounts of TDU owned transmission can give rise to situations in which it might or might not be appropriate for the TDU to pay an access charge on all of its network load. A financial transmission right system supporting merchant expansions offers a resolution for these complexities in the future, as LSEs investing in a particular expansion would bear the revenue requirements attributable to that expansion and would be assigned the financial transmission rights attributable to that expansion. On a prospective basis, therefore, TDUs would be able to participate in those expansions they found advantageous but need not bear the costs of expansions benefiting LSEs serving the native load of the transmission owner.

guidance for transmission right allocation in the RTO process if these issues were addressed in any Commission rulemaking (either resolving these issues or identifying the alternatives that could be employed within RTO discretion).

A TDU may currently have contracted to pay the embedded cost-based transmission charge of a transmission owner and in return receive point-to-point or network transmission rights. This entitlement to use the transmission system without paying congestion can be preserved under an LMP-based RTO structure by awarding the TDU financial transmission rights reflecting its current entitlement to use of the system, thus enabling the TDU transmission customer to continue to use the transmission system without paying congestion in the same manner as prior to RTO formation, while paying the same embedded cost-based transmission charges as prior to RTO formation.

At the expiration of the TDU's current contract, the TDU would be obligated under the RTO tariff to continue paying the embedded costs of the transmission grid.<sup>10</sup> It would be inequitable if the TDU's entitlement to point-to-point financial rights were to expire with the contract, while its obligation to pay embedded costs were to continue. One resolution of this potential inequity would be for the point-to-point rights awarded to a TDU to continue following expiration of its current contract as long as the obligation to pay the embedded cost of the transmission grid continues. This approach, however, complicates the determination of access charges, as the value of the financial rights (or auction revenue rights) assigned to the TDU would likely differ from the value of the financial rights (or the value of the auction revenue rights) assigned to other transmission customers. If the TDU/transmission customer were assigned financial transmission rights in return for paying an access fee, while other transmission customers were required to purchase financial rights in the auction, there would be a potential inequity. One way to avoid such a potentially inequitable allocation of costs and benefits would be to calculate the TDUs access charge based on the transmission owner's revenue requirement prior to deduction of the value of auction revenue rights (or transmission rights that the transmission owner has been allocated on behalf of its native load). The value of auction revenue rights would, however, be deducted from the transmission owner's revenue requirements in determining the access charge paid by transmission customers that are not assigned financial transmission rights but instead must purchase them in the auction.

Thus, suppose that the transmission owner had a transmission revenue requirement of \$50,000,000 with total billing units of 10,000,000 MW, of which 1,000,000 MW was assigned to the TDU. The TDU might therefore initially be assigned \$5,000,000 in

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<sup>10</sup> This differs, of course, from the case of a marketer with a long-term contract for firm point-to-point transmission service that expires, as under the open access system the marketer would have no need to continue to purchase this firm service or to pay the revenue requirements of the transmission owner. Similarly, there are instances of long-term contracts supporting past investments made by the transmission owner to provide point-to-point transmission service to the transmission customer (such as to deliver power to the transmission customer from a generating unit built within the service territory of the transmission owner). While the transmission customer would be required to continue to pay these revenue requirements over the term of the contract, the obligation of the transmission customer to pay the revenue requirements of the transmission owner would end with the term of the contract.

access charges, while the other \$45,000,000 would be assigned to the retail customers of the transmission owner. Further suppose that following the transition to an RTO, the financial transmission rights assigned to the TDU were valued at \$2,500,000 in the auction but were retained by the TDU, while the financial transmission rights assigned to the transmission owner and sold in the auction were valued in the auction at \$22,500,000. In these circumstances, the TDU would continue to pay an access fee of \$5 per billing unit (and receive \$2.5 per billing unit in financial transmission rights), while the retail access customers of the transmission owner would pay an access fee that netted out the value in the auction of the rights assigned to the transmission owner, or \$2.5 per billing unit.

Under this approach, the transmission owner would exactly recover its revenue requirements (\$5 million in access charges from the TDU, \$22,500,000 in access charges paid by retail access customers, and \$22,500,000 in auction revenues). In the example, all of the transmission customers would pay equal embedded cost charges, net of the value of the transmission rights assigned to them, but it needs to be recognized that this may not necessarily be the case. Thus, it is possible under this approach that the value of the transmission rights assigned to the TDU might be proportionately greater or less than those sold in the auction and credited against the access charge paid by retail access customers. This approach has the complication that it would inevitably involve the determination of more than one access charge for a given transmission owner.

Another potential approach to rights allocation and access pricing would be to provide that as TDU transmission contracts expire, the point-to-point transmission rights originally assigned to the TDU transmission customer would revert to the transmission owner in the form of auction revenue rights. A uniform embedded cost charge paid by all transmission customers could then be calculated reflecting the transmission owner's overall revenue requirement less the auction value of the auction revenue rights. This end state would have the advantage of simplicity in the determination of embedded cost charges.

This alternative approach can also be seen as equitable, in that all transmission customers would share evenly in the value of the transmission rights assigned to the transmission owner. Thus, all transmission customers would make the same payment and receive the same benefits. This approach may be seen as inequitable, however, if some of the transmission rights assigned to the transmission owner, and whose value would be shared across all transmission customers, are disproportionately valuable because of generation investments made by the TDU transmission customer that was previously entitled to those rights, and was entitled under the contract to rollover its transmission contract. Suppose, for example, that after acquiring firm transmission service a TDU made a generation investment that increased transmission usage on that portion of the transmission system, eventually giving rise to transmission congestion as other transmission customers sought to use the transmission system for spot transactions. If the TDU does not have the ability to in effect "roll-over" the financial transmission rights reflecting its historical usage of the system to meet its load, it would be worse off under this alternative approach to transmission right assignment and determination of access charges.

Another complication in assessing whether these alternative approaches to assigning the value of financial transmission rights to transmission customers is the possibility that the transmission customers of a given transmission owner may be located on different portions of the transmission grid and facing different congestion costs.

Finally, a related question on which it would be helpful to know whether FERC intends to resolve in a single manner or leave to RTO discretion is the question of whether the transmission rights assigned to TDUs should always be in the form of options, or whether if the transmission usage by the TDU historically provided counterflow that supported transmission usage by others, the TDU could be assigned transmission rights in the form of obligations.