**FEDERAL ENERGY REGULATORY COMMISSION**

# White Paper
# Wholesale Power Market Platform

(Issued April 28, 2003)

The Federal Energy Regulatory Commission's core mission under the Federal Power Act is to achieve wholesale electricity markets that produce just and reasonable prices and work for customers. The Commission's July 2002 proposal to harmonize wholesale power markets sought to advance this core mission in the context of the new realities of regional electricity markets.[1]

The industry has been evolving toward a market-based approach for well over a decade and active long-term wholesale bilateral markets exist in all regions of the country. However, short-term wholesale markets with transparent prices and market structures that will reliably produce just and reasonable prices are not likely to develop without strong Commission action. Wholesale electricity markets do not automatically structure themselves with fair behavioral rules, provide a level playing field for market participants, effectively monitor themselves, check the influence of market power, mitigate prices that are unlawful, or fix themselves when broken. These are the responsibilities of the Commission under current law, and our proposal was made with these responsibilities in mind.

Our proposal was informed by the experiences of this country and other countries in electric market design, including the effects of supply shortages, demand that does not respond to high prices, lack of price transparency in the marketplace, and the importance of market monitoring and market power mitigation. Based on the extensive comments we have received during the past nine months, we are issuing this White Paper to set forth our assessment of how best to move forward in the electric industry for the long-term benefit of electricity customers, and how we intend to change our proposed rule to meet the concerns that have been raised.

Our goals continue to be reliable, reasonably priced electric service for all customers; sufficient electric infrastructure; transparent markets with fair rules for all market participants; stability and regulatory certainty for customers, the electric power industry, and investors; technological innovation; and efficient use of the nation's resources. Further, providing regulatory certainty for the industry and investors in order to build needed infrastructure is a critical need facing the energy industry and requires Commission action.

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[1] Notice of Proposed Rulemaking, Docket No. RM01-12-000, issued July 31, 2002.

Under the Final Rule, we intend to focus on the formation of regional transmission organizations (RTOs) and on ensuring that all RTOs and independent system operators (ISOs) have good wholesale market rules in place.[2] We will eliminate the proposed requirement that public utilities create or join an Independent Transmission Provider. Instead, in light of the fact that almost all public utilities already have joined, or committed to join, an RTO or ISO, the Final Rule will require public utilities to join an RTO or ISO.[3] Further, we intend to adopt a Final Rule that allows for phased-in implementation and sequencing tailored to each region and that allows modifications to benefit customers within each region. In addition, if for a specific RTO or ISO it can be demonstrated to the Commission that the costs of implementing any feature of the market platform outweigh its benefits, the Commission will not require implementation of the feature for that particular RTO or ISO.[4]

For the basic wholesale market platform, we intend to build upon the existing rules adopted in Order No. 2000 for RTOs by adding features that we have learned are necessary for effective wholesale power markets.[5] For example, Order No. 2000 did not include market power mitigation measures and does not prevent flawed market designs. Wholesale electric markets will not be able to deliver full customer benefits in the future without the oversight and transparency that regional independent transmission organizations can provide. Healthy and well-functioning wholesale power markets are central to the national economy, and we believe that regional, independent operation of the transmission system, with proven market rules in place, is the critical platform for the future success of electric markets. Divestiture is not required to achieve independent operation of the transmission system. Companies may remain vertically integrated under an RTO or ISO.

In the years since Congress enacted the Energy Policy Act of 1992, competition among power plants for wholesale customers' business has largely replaced traditional cost-of-service regulation of wholesale power sales. The Department of Energy found that

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[2] For the purposes of the Final Rule, all of the characteristics and functions for RTOs would apply to Independent System Operators (ISOs), except for scope and regional configuration.

[3]The requirements of the Final Rule will not apply to Commission-jurisdictional electric power cooperatives that serve only retail load.

[4]We intend to commence technical conferences in each region and to work with states and market participants to develop reasonable timetables for moving forward.

[5]Details of the wholesale power market platform and a comparison of them to the requirements of Order No. 2000 are included in Appendix A.

relying more on markets has saved customers $13 billion per year over traditional regulation. It has stimulated innovation in generation and transmission technologies. It has freed customers from being forced to pay for the "stranded costs" of unwise investments. This competitive market framework came about as a result of national legislation and a series of Commission initiatives in both the wholesale gas and electric industries. In particular, these actions were intended to provide all wholesale power sellers with equal access to the transmission grid. Equal, nondiscriminatory access is a necessary prerequisite for fair competition among sellers, and, together with regional operation of the grid, gives wholesale buyers access to a much wider range of supply choices.

The transition to restructured markets has not been smooth or uniform. In regions with an effective wholesale market platform, an ISO or RTO provides effective market monitoring and has clear market rules designed to protect customers. Some markets, however, clearly have not been immune from market design flaws. Experiences in California have shown the consequences of poorly designed markets and inadequate generation, transmission and demand response. Moreover, they demonstrate the need for before-the-fact market power mitigation and ongoing market monitoring. Some areas also have experienced "seams" problems where differences in design between regions create artificial barriers to trade which raise costs, limit customer supply choices, and create opportunities for exploitation.

In other areas of the country, where markets do not have independent or regional grid operation, the lack of price transparency in the marketplace can mask problems and transmission operators can use their ability to control the transmission system to favor their own power sales. New competitors may be blocked or delayed because the transmission operator can favor its affiliated suppliers both in interconnecting to the grid and in allocating the costs of interconnection. The result of these problems is higher customer costs, making independence a critical element for protecting native load. Dealing with these issues and concerns on a case-by-case basis takes significant time and effort for both the Commission and market participants to resolve.

In the proposed rule, the Commission identified the building blocks for a healthy wholesale market to address the problems we have experienced in both competitive and non-competitive markets. In moving forward on a Final Rule, we believe it is critical to retain certain fundamental building blocks for healthy electric markets, and we agree with commenters that regional economic differences and regional timing constraints must be recognized. Below we identify market issues that lend themselves to regional solutions without compromising the integrity of a solid market platform.

The Commission is aware that the success of our RTO-based initiative is more likely in a region where the bulk of the transmission grid is in the hands of jurisdictional

public utilities. But in the Pacific Northwest, roughly 80 percent of the grid assets are controlled by the Bonneville Power Administration, which is not a public utility under the Federal Power Act. Bonneville's participation in RTO West is essential for RTO West to succeed. Thus, we encourage Bonneville's continued voluntary participation in RTO West. We are also aware that Bonneville will continue to participate only if RTO West has the flexibility to meet the unique needs of the Pacific Northwest. We clarify what may be obvious. Any decision of Bonneville to meet its obligations and operational responsibilities with respect to such matters as irrigation, flood control, treaties, environmental rules and the like is solely Bonneville's to make and is not jurisdictional to the Commission. While the Commission has limited jurisdiction over Bonneville's rates under the Pacific Northwest Electric Power Planning and Conservation Act, the contracts between Bonneville and its customers do not require Commission review or approval. We have heard the concerns expressed about the merits of locational pricing and a day ahead market in a region dominated by interdependent hydroelectric resources. With respect to these concerns, our commitment is to work with interested parties, including state commissions, to find solutions that are appropriate to the unique needs of the Pacific Northwest.

The Commission will consider all comments received on this White Paper, as well as any pending electricity legislation being considered in the U.S. Congress, prior to issuing a Final Rule.

**Comments on the Proposed Rule**

A number of concerns have been raised about various aspects of the proposed rule. We have received approximately 1,000 sets of formal comments on our proposed rule. The most extensive concerns involved the following issues. We state these concerns and our responses below:

- The Commission proposed to assert jurisdiction over transmission used to provide retail service to native load customers.

Pursuant to Order No. 888, the Commission currently asserts jurisdiction over wholesale transmission service and unbundled retail transmission service by public utilities. In the Final Rule, with respect to bundled retail service, we will continue our existing practice for RTOs and ISOs of distinguishing between the non-price terms and conditions of transmission service and the rates for transmission service. As discussed in Appendix A, the non-price terms and conditions of the RTO or ISO tariff will apply equally to all users, including those taking service to meet their obligation to serve bundled retail customers. However, the Commission will not assert jurisdiction over the transmission

rate component of bundled retail service, thereby avoiding unintended issues raised by a new assertion of jurisdiction.

- Specific features of the proposed rule, particularly the resource adequacy requirement and the regional transmission planning requirement, infringe on state jurisdiction.

The Commission clarifies that nothing in the Final Rule will change state authority over these matters. We will not include a minimum level of resource adequacy. The RTO or ISO may implement a resource adequacy program only where a state (or states) asks it to do so, or where a state does not act. The Final Rule will direct RTOs and ISOs to develop a periodic regional transmission plan for submission to relevant state and local siting authorities and to assist the states in whatever manner they desire, including evaluating the impact of new generation, transmission, energy efficiency, and demand response on regional reliability and resource adequacy.

- The transition process to the new proposed transmission service would not provide sufficient protection for existing customers.

As with our earlier restructuring efforts in the natural gas and electric power industries, we want to ensure that existing customers retain their existing transmission rights and retain rights for future load growth. While all customers that pay a basic access charge can schedule transmission service, it is important that customers be able to protect themselves from congestion costs through Firm Transmission Rights (FTRs). The Final Rule will eliminate any requirement that FTRs be auctioned. We will, instead, look to regional state committees to determine how such rights should be allocated to current customers based on current uses of the grid. Varying approaches to FTR allocation need not create "seams" with neighboring regions.

- The proposed rule was too prescriptive in substance and in implementation timetable, and did not sufficiently accommodate regional differences.

As discussed above, we intend to adopt a Final Rule that allows for phased-in implementation and sequencing tailored to each region and that allows modifications to benefit customers within each region. To the extent that it can be demonstrated to the Commission that the costs of implementing any feature of the Final Rule outweigh its benefits, the Commission will not require the RTO or ISO to implement that feature. Before issuing a Final Rule, we intend to convene technical conferences with state commissioners and market participants in each region to discuss which aspects of the platform (if any) have not already been addressed and the timeline, sequence and budget for

moving forward.[6] Also, as discussed in Appendix A, each RTO or ISO would provide a forum for state representatives to participate in the RTO's or ISO's decisionmaking process. That forum is referred to as the regional state committee.

- The proposed rule did not provide sufficient clarity on cost recovery for investment in new transmission facilities.

Each RTO or ISO will be required to have a clear transmission cost recovery policy outlined in its tariff. We will look to the RTO or ISO and the regional state committee to determine the appropriate regional approach for allocating the costs of new transmission. Regions may differ on the extent to which they want to rely on participant funded expansions; this difference need not create "seams" with neighboring regions. Because this issue is such an important one in stimulating appropriate investment by both existing and new transmission companies, we will allow an RTO or ISO to implement such policies once there is a regional planning process through which an independent entity performs all necessary facilities studies and determines cost responsibility for the required transmission upgrades.[7]

**Wholesale Market Platform**

The Commission believes that certain elements need to be in place for well-functioning wholesale markets.

**Regional Independent Grid Operation**

Order No. 2000 required that all RTOs meet four minimum characteristics: independence, scope and regional configuration, operational authority, and short-term reliability. The Final Rule will reaffirm the need for these characteristics. In particular, the lack of independence continues to plague electricity markets because it provides an incentive for those who own generation and operate transmission facilities to operate the transmission system in ways that exclude competing generation suppliers and can allow the

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[6]To avoid the reliability and operational problems that result when some parts of the grid do not participate in RTO or ISO functions, we strongly encourage regional decision-making on RTO or ISO implementation through regional state committees, stakeholder committees, and other authorities in the region.

[7]In Appendix A, we explain that allowing participant funding on the basis of having an independent entity perform transmission planning and related cost allocation is a transitional approach that could be used in anticipation of the RTO or ISO assuming operational control of the regional transmission grid within one year.

exercise of market power. This conflict of interest cannot be remedied through oversight and enforcement. Rather, structural separation of transmission operation from other wholesale market activities is required to eliminate the ability for such manipulation.

Regional operation is critical for both reliability and efficiency because power flows freely throughout regional grids. Order No. 2000 said "the scope and configuration of the regions in which the RTOs are to operate will significantly affect how well they will be able to achieve the necessary regulatory, reliability, operational and competitive benefits." However, in the Final Rule we will allow flexibility on scope and configuration for ISOs. RTOs and ISOs are developing methods of interregional coordination that allow separate control, but a single market from the customer's perspective. Therefore, in the Final Rule we will not require ISOs to meet the scope and regional configuration requirement. However, all must actively pursue interregional coordination between RTOs and ISOs, including the elimination of the payment of multiple access fees for transactions that cross ISO and RTO borders.

Order No. 2000 required that the RTO be the sole provider of transmission service and sole administrator of its own open access tariff. Included in this is the requirement that the RTO have the sole authority for the evaluation and approval of all requests for transmission service including requests for new interconnections. The Final Rule will reaffirm these requirements.

**Regional Transmission Planning Process**

Regional planning of the transmission grid is essential to ensure the most effective use of the interconnected grid facilities. The RTO or ISO is in a unique position to discern regional needs and address factors inhibiting investment in transmission and generation through conducting a region-wide planning process. As required in Order No. 2000, the Final Rule will require the RTO or ISO to produce technical assessments of the regional grid and support the state siting authorities or multi-state entities by performing necessary studies. The purpose is to assist the states and market participants by giving an independent assessment of the transmission facilities needed by the region to reliably and economically serve load located within the region. How the RTO or ISO, state commissions, transmission owners, and other market participants participate in the process will be decided regionally. By administering the regional tariff, RTOs and ISOs also provide the critical link to a cost recovery mechanism for regional transmission expansions. The Final Rule would require RTOs and ISOs to have a regional planning process in place as soon as practicable.

**Fair Cost Allocation for Existing and New Transmission**

The costs associated with the existing grid, other than those directly assigned, will continue to be recovered through rates paid by customers. To avoid having customers pay multiple, cumulative charges for transmission service across multiple utility grids in a region, the rate paid by a customer should permit that customer to have access to the entire region at a single rate. As discussed in Appendix A, regional state committees may agree on the form of access charge that will be filed by the RTO or ISO under section 205 of the Federal Power Act. That means the committee will decide whether to propose to move to a uniform rate for transmission service throughout the region (known as postage stamp rates), or whether to propose to maintain single, but different access charges depending on where power is taken off the grid (known as license plate rates).[8]

To gain access to a wider range of supply choices, RTOs and ISOs should eliminate the payment of multiple access fees across RTO and ISO borders. Rate mechanisms to minimize cost shifts should be used. If there is a notable imbalance between imports to and exports from an RTO or ISO, the net exporting RTO or ISO may seek to recover some of its transmission costs through an export rate.

As discussed above, costs of new transmission expansions will be recovered in accordance with the regional pricing policy, which may be informed by the appropriate regional state committee. As discussed in Appendix A, the regional pricing policy will be filed with the Commission by the RTO or ISO.

**Market Monitoring and Market Power Mitigation**

These are relatively undeveloped features of Order No. 2000, which did not have a market power mitigation component. For customers to benefit from wholesale power markets, it is critical that market prices fairly reflect the conditions of supply and demand rather than the exercise of market power. Each RTO or ISO would have an independent market monitor either for the individual RTO or ISO or for a larger region.

The market power mitigation measures must protect against the exercise of market power without suppressing prices below the level necessary to attract needed investment in new infrastructure in the region. At a minimum, the RTO's or ISO's tariff should include rules limiting bidding flexibility where there is localized market power. The RTO's or ISO's tariff must also include clear market rules designed to prevent market manipulation strategies, including the types of anti-gaming tariff provisions in the proposed rule.

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[8]Under license plate rates, the single access charge is usually based on each transmission owners' service area.

The types of mitigation tools and the triggers and consequences of mitigation should be tailored to the needs of each region. For example, energy-limited resources, such as hydroelectric generators, may need to have bidding mitigation protocols and thresholds that are different from thermal generators. However, mitigation tools which vary by region across market seams have the potential to create enforcement problems and undesirable behavioral incentives. For this reason, the Commission will look closely at mitigation proposals, not only for their suitability for the RTO's or ISO's regional markets, but for their compatibility with neighboring RTOs and ISOs.

**Spot Markets to Meet Customers' Real-Time Energy Needs**

While we expect that the vast majority of energy bought and sold will continue to be under negotiated long-term contracts between customers and suppliers, the nature of electricity requires the availability of a spot market for the last-minute sales or purchases needed to ensure system reliability. This balancing function is currently performed by the transmission provider. Under the Final Rule, the RTO or ISO must use a real-time market for energy to resolve imbalances. A transparent spot market not only helps keep the system reliable and lowers costs but also provides important price and other information to all market participants on an equal and open basis. It also gives the public a timely way to assess the functioning of the market. These markets will also facilitate customer response to prices as well as ease the introduction of some renewable and other innovative supply technologies.[9] The RTO or ISO in each region will develop the detailed market rules that will be included in its Commission-filed tariff. An RTO or ISO must also introduce a day-ahead market and a market for various ancillary services when the market is ready for those steps. Unlike Order No. 2000, which allowed power exchanges without a check for security constraints, any RTO or ISO day-ahead market must be designed to work reliably with the congestion management system.[10]

**Transparency and Efficiency in Congestion Management**

Regions should develop an approach to manage congestion that protects against manipulation, uses the grid efficiently, and promotes use of the lowest cost generation.

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[9]State action is required for retail customers to have demand response options. Where states permit end users to participate directly in wholesale markets, demand response programs could be administered through the RTO or ISO tariff. The Commission strongly advocates demand response to limit supplier market power, enhance reliability and resource adequacy, and limit price volatility.

[10]The failure to check for security constraints created perverse incentives for participants in California to create congestion.

Efficient market behavior depends heavily on assigning cost responsibility to those who cause the costs and the benefits to those who reduce costs. Today, transmission providers resolve congestion through a system that causes unnecessarily expensive generation redispatch. These added costs are hidden but are real and are paid by customers today. Order No. 2000 required RTOs to have transparent market mechanisms with efficient price signals in place to manage transmission congestion within one year of initial operation. We would continue that general approach for both RTOs and ISOs. We clarify that this rule will not override decisions we have already made in individual RTO or ISO cases regarding congestion management.[11]

**Firm Transmission Rights**

RTOs and ISOs that use locational pricing to manage congestion would be required to make Firm Transmission Rights (FTRs) available to customers.[12] FTRs protect customers from the costs of congestion. Under the Wholesale Power Market Platform, customers in RTOs that use locational pricing along with network transmission service would have firm physical transmission service, and customers with FTRs would be protected from congestion costs.

We will not require auctions of these rights. FTRs allow customers to schedule service according to the paths specified in their rights, with no risk of congestion charges. There also would be no risk of curtailment, absent a force majeure event such as the loss of a transmission line. By providing protection from congestion costs, FTRs also allow market participants to enter into contracts with a locked-in price if desired. Thus, FTRs allow for maximum utilization of valuable scarce grid capacity and therefore lower costs to customers.

In the Final Rule, for RTOs or ISOs that have not already addressed this issue, these rights would be allocated according to existing contracts and existing service arrangements in order to hold customers harmless. To the extent transmission rights have already been approved by the Commission in RTO or ISO orders we would not override these decisions in the Final Rule.

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[11] As discussed in Appendix A, we are also including options that will minimize cost shifts.

[12] The discussion applies to RTOs and ISOs that have embraced locational pricing. As noted in Appendix A, there are ongoing discussions in the Western Interconnection regarding common elements of market design. We will not prejudge the results of those ongoing discussions.

**Resource Adequacy Approaches**

Order No. 2000 did not include a regional view of resource adequacy. We have learned that if one state has inadequate resources, it can create severe problems for the larger region. It is difficult for the Commission to assure just and reasonable wholesale market prices if there are insufficient resources to meet demand. Each region with an RTO or ISO will determine how it will ensure that the region has sufficient resources to meet customers' needs. The approach to and level of resource adequacy will be decided by the states in the region drawing from a mix of generation, transmission, energy efficiency, and demand response. It is important to have a consistent approach throughout the region, which should be developed by the regional state committee. States may decide to ensure resource adequacy through state imposed requirements on utilities serving load within the region. Other states may choose to have RTOs or ISOs operate capacity markets. In any case, the choice on the approach is made by the states within the region.

**Other Issues on Which Commenters Seek Clarification**

- **RTO and ISO Governance** – We will include overarching principles of independent governance in the Final Rule, but will decide governance issues on a case-by-case basis. The Final Rule will not override governance already approved in earlier RTO orders.

- **RTO Decisions** – We confirm that the decisions made in prior RTO orders in which we noted an overlap with the Standard Market Design rulemaking will not be overturned in the Final Rule.

- **Liability** – A standard tariff provision limiting liability for transmission providers will be included in the Final Rule.

- **Cyber Security** – We will adopt the North American Electric Reliability Council (NERC) standards for cyber security.

- **Reciprocity** – We propose no change to the Order No. 888 reciprocity requirements and Order No. 2000 provisions affecting non-jurisdictional entities in the U.S., Canada, and Mexico. We believe non-jurisdictional entities will benefit from RTO formation and the development of standardized wholesale market rules. We encourage such non-jurisdictional entities to voluntarily participate in RTOs and ISOs as full and equal members.

- **Independent Transmission Company** – We propose no change in our prior decisions on the functions that should be performed by an RTO and those that may

be performed by an independent transmission company that operates within the RTO's territory.[13]

- **Standards** – We are encouraged that NERC, the North American Energy Standards Board, and RTOs and ISOs have reached agreements on a process through which they will work together in the development of reliability and market standards. Market standards developed through this process could be included in RTO and ISO tariffs to facilitate compatible and seamless rules across the interconnected power grid.

[13] See TRANSLink Transmission Company, LLC, et al., 99 FERC ¶ 61,106 (2002).