



FERC Order 890: What Does It Mean For the West?

In 1996, the Federal Energy Regulatory Commission (FERC) issued Order 888 requiring transmission providers to offer open-access transmission service on a nondiscriminatory basis to wholesale transmission customers. Order 888 also allowed for recovery of stranded costs, i.e. costs incurred by a transmission provider to offer transmission service that could go unrecovered if customers use another power supplier.

Order 888 allowed transmission providers to impose hourly imbalance charges for energy imbalances of +/- 1.5 percent, with a minimum of 2 MW. Outside of the deviation band, energy imbalance charges varied by individual transmission provider but typically charged a percentage of the transmission provider's system cost, such as 110 percent of incremental costs for underscheduling or 90 percent of decremental costs for overscheduling, or the higher of a percentage of system costs or a fixed charge, such as \$100 per MWh. These charges of \$100 per MWh essentially made wind development untenable, absent exemptions or an alternative means of determining energy imbalance charges.

Over time, FERC established that certain parts of Order 888 needed revisiting, such as the widespread differences in how available transmission capacity was determined. By taking another look at Order 888, FERC wanted to:

- Address various ambiguities in the open access transmission tariffs that every transmission provider had to file as part of Order 888
- Provide greater transparency and certainty to transmission customers and providers
- Give greater impetus and standardization to regional transmission planning; and
- Institute conditional firm and planning redispatch provisions.

FERC issued Order 890 on February 16, 2007, although most of the reforms adopted do not take effect until July 13, 2007, or later. The National Association of Regulatory Utility Commissioners (NARUC), the National Wind Coordinating Collaborative (NWCC), and the Western Governors' Association co-hosted this March 27, 2007 webcast on FERC Order 890 and its implications for the Western U.S. Because of the size of the rule (over 1,200 pages), the webinar focused on the issues of most importance for wind power, i.e., conditional firm, energy imbalances and redispatch, and transmission planning. Remarks from feature speakers are summarized below.

Dan Hedberg and Mason Emmett, Federal Energy Regulatory Commission

Transmission Planning: Order 890 requires public utility transmission providers to participate in open transmission planning processes at the local and regional level. Each transmission provider must file a new Attachment K as part of its open access transmission tariff that describes its transmission planning process and how its process meets the following nine transmission planning principles:

- 1) Coordination
- 2) Openness

- 3) Transparency
- 4) Information Exchange
- 5) Comparability
- 6) Dispute Resolution
- 7) Regional Participation
- 8) Congestion Studies
- 9) Cost allocation

Through these principles, FERC hopes to see greater coordination between neighboring transmission providers and interconnected systems, state authorities, and other stakeholders, as well as ensuring greater accessibility to affected parties, and greater availability of the data and assumptions that were used for the transmission plans. The cost allocation principles refer to the requirement that providers propose cost allocation mechanisms when they do not exist under current structures.

To help transmission providers comply with the transmission planning requirements of Order 890, FERC will hold staff technical conferences in several regions across the country during June 2007. For dates and locations of these staff technical conferences, visit <http://www.ferc.gov/industries/electric/indus-act/oatt-reform.asp>. FERC encouraged transmission providers to post a draft proposal for complying with the nine transmission planning principles by May 29, 2007.

Energy and Generator Imbalances: Order 888 defined energy imbalance service as when the transmission provider makes up the difference between scheduled and actual energy delivery to a load located within a transmission provider's control area. FERC implemented an hourly deviation band of +/- 1.5% (with a minimum of 2 MW) for energy imbalance service. Transmission customers may make up scheduling differences within that deviation band in 30 days. FERC required transmission providers to propose charges for energy imbalance service, which typically consist of an adder to the transmission provider's system costs for energy imbalance service, such as 110% of incremental costs for underscheduling or 90% of decremental costs for overscheduling, or the greater of a percentage of system costs or a fixed charge, such as \$100 per MWh.

Generator imbalance service corrects for differences between a generator's energy schedule and the amount of energy generated in an hour. While FERC did not require generator imbalance service to be provided as part of the pro forma OATT in Order 888, FERC did allow some transmission providers to modify their OATT to provide generator imbalance service. In Order 2003-B (FERC's order for generator interconnection) FERC also allowed transmission providers to include generator imbalance provisions in individual interconnection agreements. For generation underdeliveries, pricing for generator imbalances varied from the greater of \$100/MWh or 110% of system incremental cost to the greater of \$150/MWh or 200% of the incremental cost. For more generation overdeliveries, pricing ranged from 50% to 90% of the transmission provider's decremental cost.

In changing how imbalances are treated in Order 890, FERC adopted three principles:

- 1) The charges must be based on incremental costs or some multiple thereof;
- 2) The charges must provide an incentive for accurate scheduling, such as increasing the percentage of the adder above incremental cost if deviations become larger (and conversely, decreasing the adder if deviations are smaller); and
- 3) Provision must account for the inability of intermittent resources such as wind to schedule precisely in advance, such as waiving the more punitive adders for higher deviations.

Consistent with these principles, Order 890 adopts the Bonneville Power Administration's tiered set of energy imbalances that increase as the amount of the deviation increases, and apply this tiered formula for both energy imbalances and generator imbalances. Tier One imbalances of less than or equal to 1.5% of

scheduled energy, or up to 2 MW (whichever is greater), would be netted monthly and settled at the incremental or decremental cost. Tier Two imbalances of between 1.5% and 7.5% of scheduled energy, or between 2 and 10 MW (whichever is larger), would be settled at 90% of decremental costs and 110% of incremental costs. Tier Three imbalances of over 7.5%, or greater than 10 MW (whichever is greater), would be settled at 75% of decremental costs or 125% of incremental costs. Intermittent resources are exempt from the Tier Three imbalance charges. Transmission providers can file with FERC to depart from these imbalance provisions but must demonstrate that their proposal meets the three imbalance principles and is consistent with or superior to the imbalance provisions in Order 890. This includes ISOs and RTOs that use LMP-based markets for settling imbalances.

FERC defined incremental costs for imbalance provisions in Order 890, relying on a 1999 Consumers Energy case, that defined incremental costs as the transmission provider's actual average hourly cost of the last 10 MW dispatched to meet demand, based on fuel replacement costs, unit heat rates, start-up costs, incremental operation and maintenance costs and purchased and interchange power costs and taxes. FERC will also allow transmission providers to recover unit commitment and redispatch costs due to imbalances, but concluded that transmission providers seeking cost recovery for additional reserves will need to make a separate filing to FERC.

Finally, on two other matters, FERC chose not to abrogate existing generator imbalance agreements between transmission customers and transmission providers, and to relieve generators from imbalance penalties if generators respond to instructions from reliability authorities to correct frequency deviations.

Redispatch and Conditional Firm: Order 888 required transmission providers to supply two types of redispatch service: planning and reliability redispatch. For planning redispatch, Order 888 requires the transmission provider to expand or upgrade its transmission service or, if it is more cost-effective, to redispatch its resources to meet a request for firm point-to-point transmission service if sufficient ATC is unavailable. Reliability redispatch is required to ease system constraints that would otherwise result in the curtailment of network service or transmission provider loads. When considering whether to reform Order 888, FERC determined that transmission provider's evaluation of long-term point-to-point transmission service requests may not be comparable to how planning is conducted for retail native load customers and therefore may not be just, reasonable and not unduly discriminatory.

In Order 890, FERC reconsidered its earlier position in its proposed rule that planning redispatch is a preferable option to conditional firm, and instead opted to include both in the Final Rule. Order 890 emphasized, however, that transmission providers are not required to offer planning redispatch or conditional firm service if it would negatively impact reliability, including service to native load and network customers.

The following is how FERC intends to implement planning redispatch and conditional firm transmission service. If a request for long-term point-to-point firm transmission service cannot be satisfied using existing available transmission capacity, the transmission provider, if requested by the transmission customer, will perform a system impact study and shall determine the necessary transmission upgrades to provide the service and the options for providing service prior to the completion of upgrades - including planning redispatch and the conditional firm option. If the transmission provider determines planning redispatch is available, it will provide the transmission customer with non-binding estimates of the incremental costs of planning redispatch and identify the relevant constrained flowgates where planning redispatch will be provided. For conditional firm, the transmission provider shall identify the specific system condition(s) and the annual number of hours where curtailment may be imposed. Conditional firm customers will then choose between either curtailment based on the system condition(s) or the number of annual hours. If the customer elects curtailment based on annual hours, the transmission provider may also add a risk factor in their calculation of annual curtailment hours to account for

forecasting risks. Conditional firm service will receive secondary network curtailment priority during the hours or specific system condition(s) when conditional firm service is conditional. During non-conditional periods, conditional firm service is subject to pro rata curtailment for reliability reasons with other long-term firm service.

Order No. 890 adopted limitations on the nature of planning redispatch and conditional firm options to reflect the two different types of customers requesting the service: customers who support the construction of upgrades and those who do not. For transmission customers that will financially support the building of new transmission facilities, conditional firm service and planning redispatch are offered as a “bridge” product until the new transmission facilities are placed into service. For transmission customers that do not support the building of new transmission facilities, the planning redispatch and conditional firm options will be subject to certain limitations, specifically on the term of the service. Every two years, the transmission provider shall reassess the planning redispatch and conditional firm option by evaluating the planning redispatch criteria and annual hours/specified system condition(s) for the conditional firm option to determine if it can still provide the services reliably. FERC noted that some providers such as Bonneville Power Administration and Nevada Power may be able to offer conditional firm service for longer than two years without reassessment and FERC encouraged longer periods of conditional firm service when practical. Planning redispatch and conditional firm service longer than five years in length can be rolled over into new service although, as noted, transmission providers can reassess the conditions for offering these services.

Pricing for planning redispatch service is either the “higher of” the actual incremental costs of redispatch or the embedded transmission cost rate on file at FERC. Alternatively, a transmission provider and a transmission customer may negotiate a fixed rate for planning redispatch, capped at the total fixed and variable costs of the generating resources providing the planning redispatch service. If a customer does not elect to negotiate a fixed rate, the transmission provider shall calculate the costs of redispatch monthly and charge the higher of redispatch or the embedded cost rate (i.e., the long term firm point-to-point transmission rate on file at FERC). All agreements for planning redispatch or conditional firm service, including any amendments that result from reassessments, must be filed with FERC.

Grace Soderberg, National Association of Regulatory Utility Commissioners

Ms. Soderberg’s presentation focused on what Order 890 means for states. She noted that Order 890 retains the core elements of Order 888 in terms of federal and state jurisdiction, with states continuing to have jurisdiction over bundled generation and transmission at the retail level and FERC having jurisdiction over unbundled generation and transmission in interstate commerce. Protection of native load customers also continues as outlined in Order 888. Similarly, FERC chose to continue requiring functional unbundling in Order 890 instead of structural unbundling (such as asset divestiture).

Revisiting the nine planning provisions covered by Mr. Emmett, Ms. Soderberg highlighted the following:

- Coordination suggests formation of a permanent planning committee is a good tool, with substance valued over form.
- Openness implies meetings should be open to interested stakeholders.
- Transparency means outside parties should be able to replicate the results.
- Information exchange means transmission providers must provide their schedules.
- Comparability says that similarly situated customers should be treated the same.
- Dispute resolution should be available for substantive and procedural planning disputes.
- Regional participation, while required by Order 890, does not define an appropriate geographic scope.

- Congestion studies contribute to economic planning.
- Cost allocation does not have to be done by any particular method because of Order 890; transmission providers can determine their own criteria, although proposals should provide appropriate incentives and have regional support.

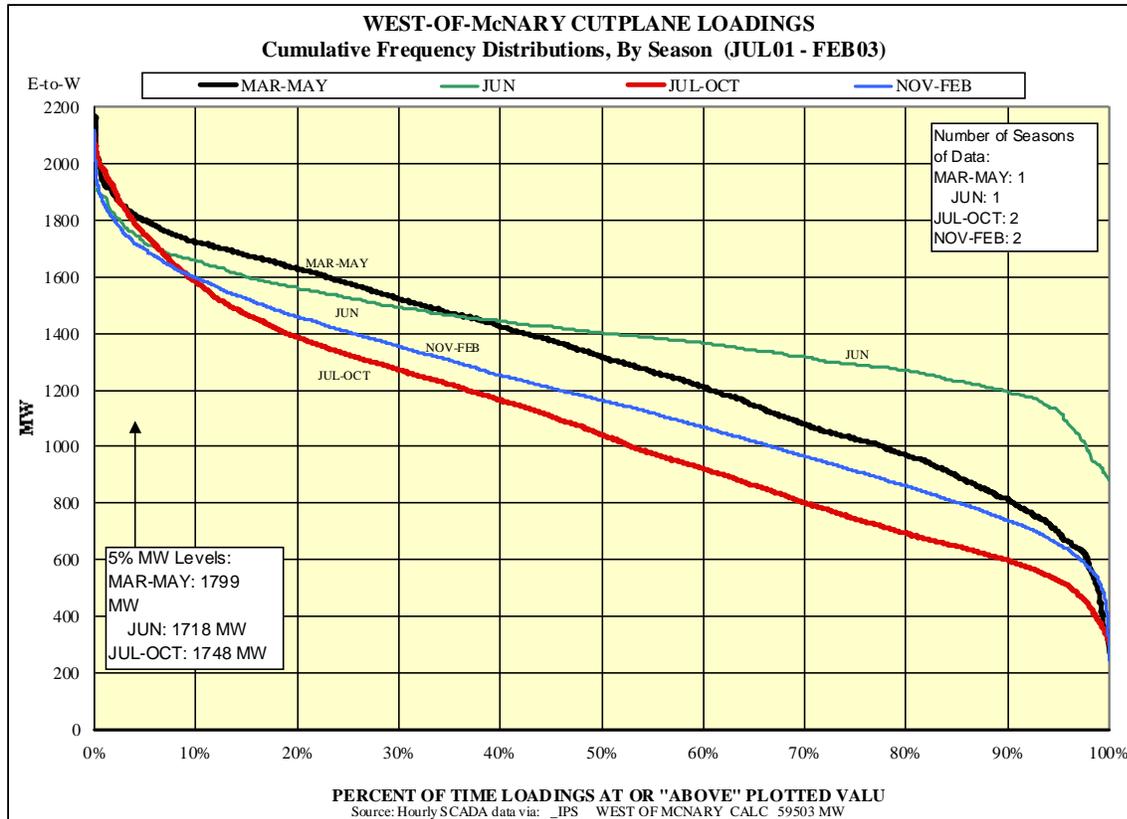
For planning, an independent coordinator is not required, but FERC strongly encouraged state participation in transmission planning. No specific method for recovery of transmission planning costs is provided by Order 890, and the use of open season is not mandated for joint transmission ownership.

Natalie McIntire, Renewable Northwest Project

Ms. McIntire described how conditional firm and redispatch can help enable incremental amounts of new long-term transmission service. With little transmission built over the last several years, there are very few long-term firm transmission contracts available. However, previous studies from the Seams Steering Group-Western Interconnection and the Rocky Mountain Area Transmission Study have provided evidence of significant unused capacity on several transmission paths, even if these paths are fully booked on a contractual basis. Conditional firm and redispatch are methods for tapping into the unused capacity on transmission paths.

Conditional firm is a form of firm point-to-point service that includes less-than-firm service either in a defined number of hours or under specifically defined system conditions. Redispatch involves transmission customers paying other generators to ramp up or down their facilities to relieve congestion. Conditional firm and redispatch allow more transmission service to be provided without building new lines and/or providing additional time for new line construction. State regulators will want to see evidence of the existing grid being used before supporting capital investments for new transmission, and conditional firm and redispatch can help show full use of lines and the need for upgrades. Finally, conditional firm and redispatch can bring more revenue to utilities and their ratepayers.

Ms. McIntire showed a figure of Bonneville Power Administration's West-of-McNary line. That particular path is fully booked on a contractual basis, but actual usage is usually well below what the path can accommodate. Even during peak times like the spring runoff in the Pacific Northwest's hydropower-focused system, the West-of-McNary line still has some available transmission capacity.



Order 890 requires conditional firm to be offered when long-term firm transmission service is unavailable. Customers can choose either a number of hours or specific system conditions during which conditional firm service would be curtailed prior to firm customers. The biggest limitation of the conditional firm provisions in Order 890 for wind and other intermittent generators is the limited certainty that the order provides, as a reassessment of conditions is required every two years. This potential change in curtailment risk could make financing difficult. Order 890 encourages longer terms for redispatch or conditional firm whenever possible.

Rob Gramlich, American Wind Energy Association

Redispatch and other elements of Order 890 under discussion during this webcast are, as Mr. Gramlich noted, included in the Western Governors' Association report [Clean Energy, a Strong Economy, and a Healthy Environment](#) on how to achieve 30,000 MW of clean energy in the West by 2015. Utilities already use redispatch to avoid their own transmission constraints. Using redispatch opens up more firm capacity and increases grid efficiency.

Under Order 888, delivering more energy than scheduled could be quite expensive—imbalance penalties averaged \$100/MWh, far exceeding the typical cost. Order 890 takes a cost-based approach, looking at cost for load and generation imbalances. Mr. Gramlich suggested the West is moving in a positive direction for integrating clean energy but ultimately will need more transmission. Regional planning to address lumpy transmission and encouraging regional coordination are two ways of continuing to improve integration of clean generation. In addition, consolidating control areas will also aid the integration of wind energy.

Rob Kondziolka, Salt River Project & Southwest Area Transmission

Western transmission planners are coming together to develop strawman transmission planning proposals, with the goal of developing consistent principles except for cost allocation, which differs by region. The strawman proposals must be posted by May 29, 2007. Mr. Kondziolka outlined the key actions that need to occur to meet that target:

1. Conduct outreach and education, as stakeholder involvement in making proposals is encouraged (but not required) by FERC.
2. Identify what is missing and what issues need to be resolved in the transmission planning proposals.
3. Develop draft transmission planning protocols for the strawman and make decisions about cost allocation.
4. Review transmission planning proposals and documents for conformance with the transmission planning principles in Order 890.

To this end, the Western Electricity Coordinating Council (WECC) Transmission Expansion Planning Policy Committee held a workshop on April 10th in Salt Lake City. The workshop's purpose was to focus on regional planning across the Western Interconnection and then drill down to the subregions. Education and outreach are another focus area, with presentations from the subregional groups and the development of Western planning process strawman components planned. The subregional planning groups like Northern Tier, WestConnect, CAISO, and Columbia Grid are also holding stakeholder meetings to assemble their strawman proposals. The Committee on Regional Electric Power Cooperation (CREPC) also had transmission planning proposals as an agenda topic for its April 4th meeting. Mr. Kondziolka encouraged stakeholder participation in these meetings so that when the FERC regional workshops are held, people have provided their input and ensured that the Western transmission planning proposals meet regional needs.

Questions and Answers

Based on webcast participant questions, speakers made the following comments:

- Most wind integration studies focus on operational issues like ancillary service costs, but some also look at the cost break-even points of building new transmission. Some cost considerations cannot be studied regionally, like wind's capacity value which varies region to region. The Utility Wind Integration Group (UWIG) is a good resource for [wind integration studies](#), as are utilities, subregional planning groups, and Regional Transmission Organizations (RTOs).
- The Transmission Expansion Planning Policy Committee (TEPPC) is trying to serve as a central clearing house for the subregional planning groups. The TEPPC website is at <http://www.wecc.biz/index.php?module=pagesetter&func=viewpub&tid=4&pid=14>.
- Since wind is not a baseload resource, curtailment is not a major concern even when transmission demand is high.
- Transmission providers must post average, high, and low redispatch costs incurred on OASIS to calculate incremental costs.
- Individual redispatch costs would be projected up front as a means of forecasting the ability to provide long term service using redispatch.
- Conditional firm is priced the same as long term firm, point-to-point service because conditional firm is seen as a way of getting firm service. Firm customers do not get a price break if curtailed, so it is difficult to give a break to conditional firm transmission customers.

Implications and Summary

Order 890 relieves intermittent generators of the onerous energy imbalance provisions of Order 888 and introduces the long-desired conditional firm service, albeit it with a two-year reassessment condition that raises some concerns on whether energy projects can be financed with that condition. The transmission planning provisions of Order 890 could prove to be a real advance if greater regional transmission planning and coordination take place, resulting in more transmission infrastructure.

This webcast is the first in a series sponsored by NARUC and WGA on issues surrounding the implementation initiatives to bring clean and diverse energy supplies to the Western United States. Upcoming topics include:

- Biomass Energy and the Clean & Diversified Energy Initiative;
- Opportunities and Obstacles for Clean Coal;
- Energy efficiency recommendations from the WGA's Clean and Diversified Energy Advisory Committee's report; and
- The implementation of the National Action Plan on Energy Efficiency.

For information on how to participate in these webcasts, contact Miles Keogh at mkeogh@naruc.org.

For More Information

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A summary of Order 890 and the full document can be found at <http://www.ferc.gov/industries/electric/indus-act/oatt-reform.asp>.

FERC will be holding technical conferences in June 2007 on the strawman transmission planning proposals that are required in Order 890. For more details, see <http://www.ferc.gov/EventCalendar/EventDetails.aspx?ID=3315&CalType=%20&Date=6%2f4%2f2007&CalendarID=116>.