UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Assessing the State of Wind Energy In Wholesale Electricity Markets **Docket No. AD04-13-000**

STATEMENT OF THE WESTERN INTERSTATE ENERGY BOARD TO THE FEDERAL ENERGY REGULATORY COMMISSION'S TECHNICAL WORKSHOP ON ASSESSING THE STATE OF WIND ENERGY IN WHOLESALE MARKETS

December 1, 2004

The Western Interstate Energy Board requests that the Commission:

- **Examine unused transmission capacity available in the Western Interconnection and evaluate the effectiveness of current policy under Orders 888/889. The examination should begin with an analysis of actual flows on major Western transmission paths, compare Available Transmission Capacity (ATC) postings with actual flows, and perform audits where there are recurrent large disparities between actual flows and ATC. This will provide the Commission with an understanding how Orders 888/889 are being implemented and thereby enable it to make informed decisions about whether and what types of changes are needed.**

- **Pursue the development of new transmission products to enable greater utilization of existing wires. Such products may be particularly helpful in enabling development of remote, high-quality wind resources in the West.**

Western Interstate Energy Board[1] appreciates the Commission's interest in assessing the state of wind energy in wholesale electricity markets. The Commission's actions will significantly affect the ability of Western states to tap the region's large wind resource and meet state energy policy goals.

This statement addresses three items identified in notice of the technical conference:

1. Reform of Transmission Service Options Under Open Access Order

[1] The Western Interstate Energy Board is an organization of twelve Western states and three Western Canadian provinces. It serves as the energy arm of the Western Governors' Association. WIEB's Committee on Regional Electric Power Cooperation (CREPC) includes the regulatory commissions and energy agencies in the states and provinces in the Western Interconnection. WIEB also has a Western Interconnection Wind Evaluation Team comprised of interested Western state agencies.

2. Role of Regional Transmission Planning Processes
3. Inclusion of Wind in State Resource Adequacy Plans

1. Reform of Transmission Service Options Under Open Access Tariffs

With the exception of California ISO region, transmission access in the rest of the Western Interconnection is likely to be guided by the provisions of Orders 888/889 for the foreseeable future. Understanding how these orders are being implemented and where improvements can be made is important for wind development and greater utilization of existing Western transmission system.

The Commission should examine the degree to which Orders 888/889 are making unused transmission capacity available in the Western Interconnection. This information would be useful in determining actions the Commission needs to take to make existing transmission capacity available for wind development. This examination would also help answer a request that the Committee on Regional Electricity Power Cooperation (CREPC) made of the Commission staff in December 2002. Pursuant to a generous offer of assistance by Commissioner Brownell, CREPC requested FERC undertake audits of the implementation of Order 888 for the purpose of understanding how it is being implemented and providing factual evidence upon which the Commission could make informed decisions on potential improvements. (See Attachment A, item 3.)

The Commission should use the information from the recommended study of the implementation of Orders 888/889 to inform its consideration of changes to transmission access rules and control area operating practices to accommodate wind generation. The study of the implementation of Orders 888/889 should be done in parallel with the Commission's consideration of recommendations for the development of new transmission products, such as conditional firm, and other reforms. Given the rapid pace of wind development, we cannot afford a time-consuming sequential process where all elements of the necessary study of implementation of Orders 888/889 must be completed before the Commission begins work on new transmission products and control area practices.

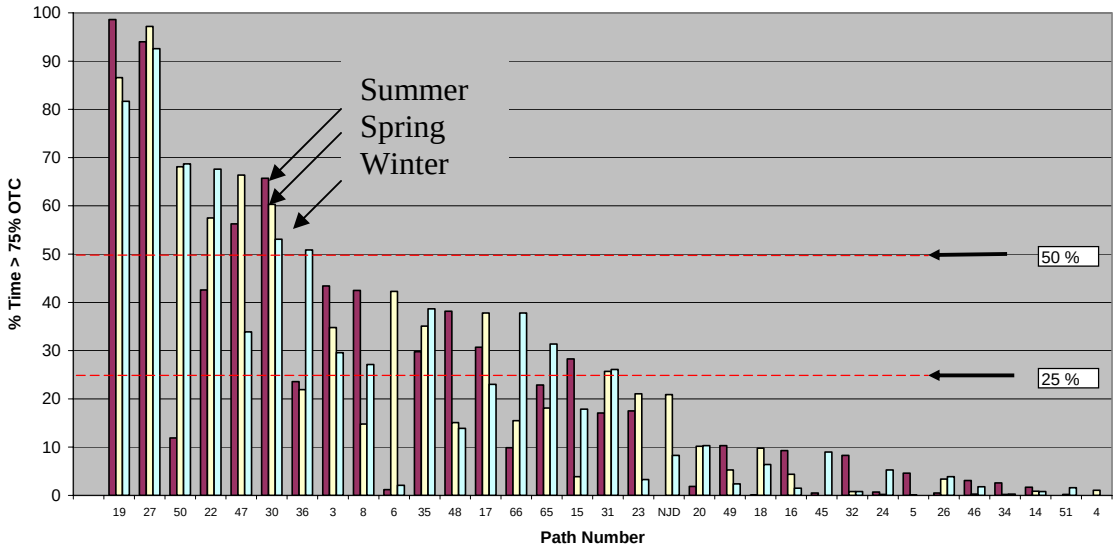
We offer the following suggestions on how the Commission might proceed:

- The Commission should compare historic flows on major transmission paths in the Western Interconnection with posting of Available Transmission Capacity. The Seams Steering Group-Western Interconnection (SSG-WI) has conducted an analysis of actual flows for the years 1998-2002 using data from the Western Electricity Coordinating Council's Extra High Voltage data base. This would be a good starting point for the Commission's study. The graph below shows summary data from SSG-WI's 2003 report on actual flows. The complete report can be found at http://www.ssgwi.com/documents/320-2002_Report___final_pdf.pdf .

The graph shows the percentage of time major transmission paths reached at least 75 percent of the Operating Transfer Capacity (OTC) limit during the highest summer, spring, and winter season from 1998-2002. Many paths have significant unused capacity.

Figure 1

Path Loading - % of Time > 75% of Path OTC during a Seasonal Period
Maximum Seasonal Loadings for each Path
Winter 98-99 thru Spring 2002



Source: *Western Interconnection Transmission Path Flow Study*, SSG-WI, February 2003

- The Commission should then compare archived data on Available Transmission Capacity (ATC) from Western OASIS sites with actual flows.

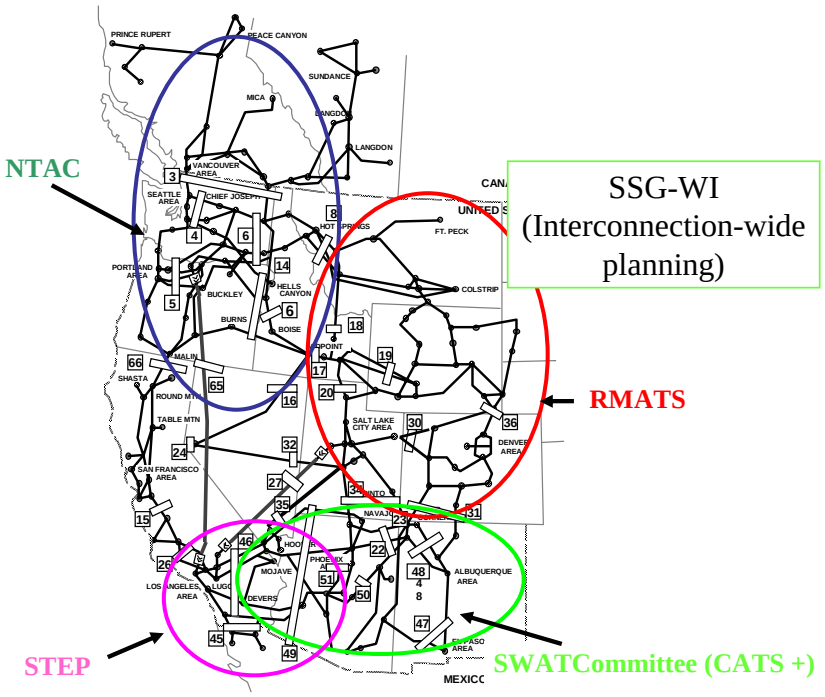
- From a comparison of actual flow and ATC information, the Commission could target paths for audits to better understand how the implementation of Orders 888/889 and control area practices affect the availability of transmission capacity to move intermittent wind resources. In the selection of control area audits, we suggest that the Commission give priority to transmission paths between high quality wind resource areas and major Western markets.

Our understanding is that assistance may be available from the Department of Energy's National Renewable Energy Laboratory to help the Commission compare actual flows and ATC.

2. Role of Regional Transmission Planning Processes

Transmission is the most significant limiting factor to wind development in the West. Progress is being made in the Western Interconnection in evaluating the need for new transmission to accommodate major wind development. Figure 2 shows ongoing regional transmission planning efforts in the Western Interconnection. In addition, state-specific transmission planning efforts are underway in California, Nevada and New Mexico.

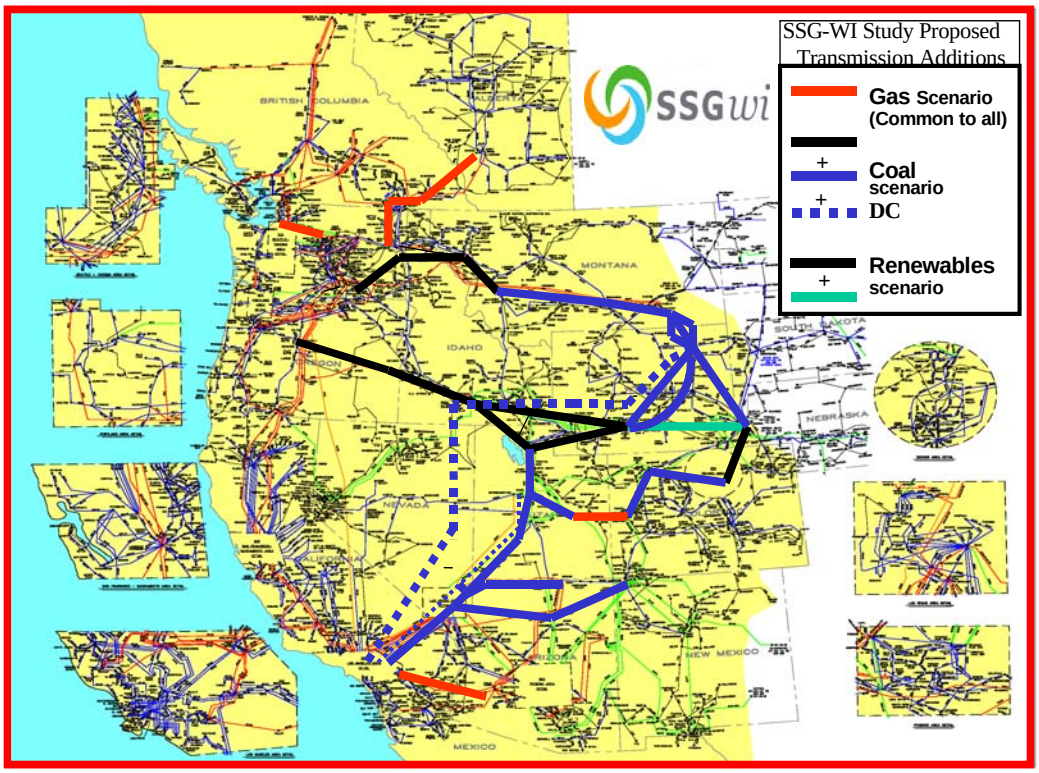
Figure 2
Interconnection-wide and Sub-Regional Transmission Planning in the Western Interconnection



In preparing its October 2003 report on interconnection-wide transmission needs, SSG-WI evaluated transmission needs to accommodate three "bookend" generation scenarios that rely primarily on natural gas, coal or renewables. The necessary reliance on generation scenarios in transmission planning is the result of the disconnect between generation and transmission planning that followed the issuance of Orders 888/889. Figure 3 shows transmission additions under the three bookend scenarios. The SSG-WI renewables scenario included 21,400 MW of wind.

Figure 3

Transmission Expansion in SSG-WI Generation Scenarios



SSG-WI is beginning a new analysis to model transmission needs under a "realistic" generation scenario that would fall somewhere within the bookend analysis done last year.

Sub-regional transmission planning efforts are looking at transmission needs in greater depth than the SSG-WI work. The September 2004 Phase I report of the Rocky Mountain Area Transmission Study (RMATS) included 2,205 MW of wind to meet load growth within the five-state region and 4,955 MW of wind in the export scenario. The following maps show economical transmission additions under the assumptions used in the modeling to meet load growth in the RMATS region and for exports.

Figure 4
RMATS Recommendation 1

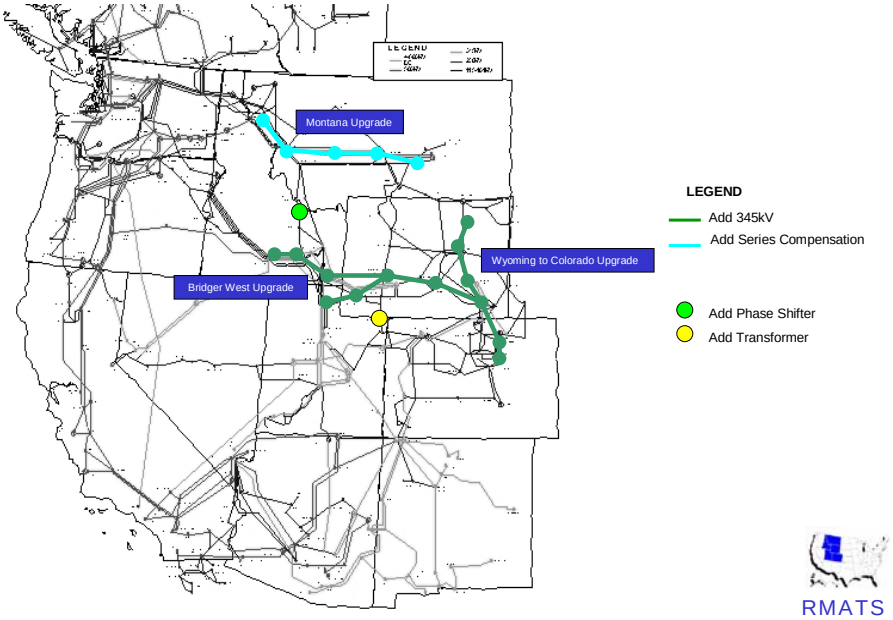
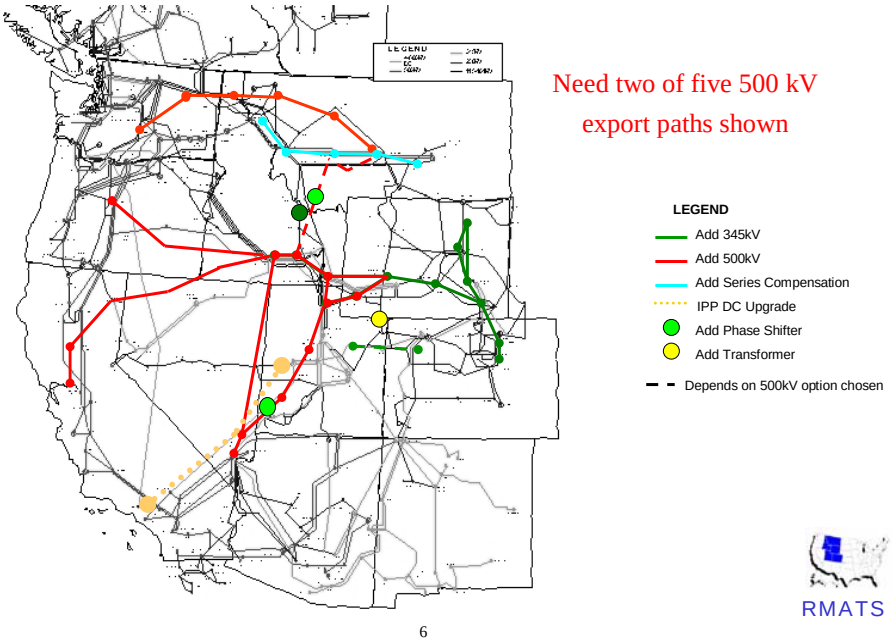


Figure 5
RMATS Recommendation 2 – Export Scenario



The RMATS Recommendation 1 examined the benefits of three transmission projects in the Rocky Mountain region: (1) the Montana system upgrade that would expand transmission capacity to the Northwest; (2) the Bridger west upgrades from Wyoming to Utah and Idaho; and (3) a Wyoming to Colorado upgrade. The Recommendation 2 proposal includes significant upgrades within the Rocky Mountain region and at least two 500 Kv paths to markets on the West Coast and Southwest. Phase

II of RMATS will focus on encouraging beneficiaries of the recommendations to develop specific project proposals and conduct technical studies.

The Southwest Transmission Area Transmission study is presently examining transmission needed to move New Mexico wind generation west and expects a report in January.

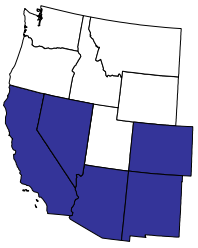
The State of Nevada is completing an analysis of transmission needed to move wind and other renewable energy generation located in the northern part of the state to the Las Vegas area and export markets.

California is examining transmission needs to meet its RPS and has directed major transmission expansion in the Tehachapi region to enable the developing of wind resources.

3. Inclusion of Wind in State Resource Adequacy Plans

Wind will be playing a major role in the future generation resource mix in the Western Interconnection. Much of the nation's highest quality wind resources are found in the West. Most of the recent integrated resource plans developed by Western utilities include significant reliance on wind generation. Five states in the Western Interconnection have Renewable Portfolio Standards. (See Figure 6.)

Figure 6
Renewable Energy Standards
in the Western Interconnection



AZ: 1.1% by 2007, 60% solar
CA: 20% by 2017
CO: 10% by 2015
NV: 15% by 2013, solar 5% of total annually
NM: 10% by 2011

As of November 2004, there are 3,274 MWs of installed wind generating capacity in the U.S. portion of the Western Interconnection. Another 1,781 MWs are planned and more will be developed given the declining cost of wind generation, implementation of state Renewable Portfolio Standards, utility resource acquisition plans, extension of the Production Tax Credit, and high natural gas prices. The wind generation potential in the Interconnection is enormous, more than 300,000 MW according to the American Wind Energy Association.

Western Governors have adopted policies to expand the use of renewables and are launching an effort to develop recommendations that can lead to the deployment of 30,000 MW of new "clean" energy generating capacity in the 18-state WGA region by 2015.

Commission action to enable the transmission system to accommodate significant additional wind generation will be needed to meet state energy policy goals. The

Commission should also examine where its policies are thwarting the construction of new transmission required by the state to meet renewable energy objectives. Later today, I believe you will hear more about this issue in the discussion of transmission development to move 4,000 MW of potential new wind generation out of the Tehachapi areas in California.

In addition to state policies enabling wind development, there are a number of innovative approaches evolving in the Western Interconnection that will help the region tap cost-effective wind resources, such as the California ISO's wind forecasting program and policies on imbalance penalties, the Bonneville Power Administration's hydro-based wind-firming product, and proposals for a conditional-firm transmission product. The Commission should encourage such efforts.

In conclusion, wind energy can be a major generating resource in the Western Interconnection. Technical innovation, high natural gas prices, and government policies have made wind energy an economic generation option. Transmission constraints, both physical and institutional, present the most important impediments to greater wind development in the West. We urge the Commission to evaluate the impact of its existing policies and make necessary changes that reduce transmission barriers to wind development.

November 24, 2004

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Attachment A

Excerpt from December 15, 2002 Memo from Marsha Smith, Chair, Committee on Regional Electric Power Cooperation to Shelton Cannon and Mike Coleman (FERC)

Request 3: Perform an audit to compare OASIS postings and actual flows on paths in the Western Interconnection

Task 1: Compare ATC postings with actual flows on the paths listed in Attachment A.

Task 2: Select for more detailed analysis: (1) time periods when there were extraordinary prices (e.g., above $250/Mwh); and (2) paths and time periods during which there were significant price differentials between the ends of the path.

Task 3: Report findings from Tasks 1 and 2 and include an examination of the causes of differences between ATC and actual flows, such as:

- Overstatement of committed transmission capacity by transmission owners;
- Manipulation of ATC calculations to block use of paths by competitors;
- The limited types of transmission products offered under Order 888 (e.g., firm, non-firm);
- Reservation of ATC to preserve dispatch flexibility or reliability for native load service;
- Other causes?

Determine if there are any differences in ATC practices between transmission owners that are FERC-jurisdictional and transmission owners that are not FERC jurisdictional. *This information will provide an improved understanding of present flows on Western transmission paths and the institutional constraints on such flows. It will also provide a better understanding of the calculation of ATC in the Western Interconnection and will improve Westwide OASIS operations in any RTO regime.*