

## INTERTRIBAL COUNCIL ON UTILITY POLICY

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Mike Radecki  
Western Area Power Administration  
Wind Hydro Integration Study

I have reviewed the information on the agenda for today's call on the Wind Hydro Study (WHS) and wanted to be sure that the scope is adequate to meet the integration needs for significant Tribal wind development along the Missouri River. Our overall goal is to get Tribal GigaWatts on the Grid, and this study must be of proper scope to adequately address actual integration issues rather than simply interconnection requirements.

***To clarify – While the goal of COUP is to “...get Tribal GigaWatts on the Grid” the objective of the Section 2606 study is to determine the feasibility of providing Tribal wind energy to support Westerns firm power obligation.***

I have reviewed some previous comments made by Matt Schuerger that I am including here to be sure that these concerns are being properly addressed in the scope of work:

### Key Recommendations – WHFS Draft Work Plan

#### 1) Analyze Sufficient Levels of Total Wind Generation to Yield Meaningful Results

The Section 2606 legislative language articulates a clear intent to analytically explore the potential technical and economic benefits of blending wind generation and Missouri River hydropower. These benefits arise from mitigation of potential system operating cost impacts due to the variability and uncertainty of wind generation. A number of recent studies have demonstrated that such operating and cost impacts are unlikely to be significant at wind penetrations up to 20% of system peak demand. For the Western Area Power Administration's Upper Great Plains region (approximately 3,500 MW control area load including approximately 2,000 MW of Western peak load), this threshold requires study of at least 400 MW of total wind generation.

I recommend study of wind generation penetration levels of 20%, 30%, and 40% of Western system peak demand, corresponding to approximately 400 MW, 600 MW, and 800 MW of total wind generation (tribal and non-tribal wind within the control area).

***This comment was addressed in the response to comments in the WHFS Work Plan (comment #13).***

2) Analyze Sub-Hourly Operating Impacts Using the Current Best Practices

It's important to use the current best practices for the study of operating impacts of wind generation. Generally, these best practices include:

- Capture system characteristics and response through operational simulations and modeling – this should include high quality modeling of the hydro system and it's capabilities in the relevant time frames.
- Develop and use multiple years of synthetic wind plant output time series data (based on large-scale meteorological modeling) , synchronized with load data for the same time period
- Capture wind deployment scenario geographic diversity through the synchronized weather simulation
- Couple with actual historic utility load and load forecasts
- Use actual large wind farm power statistical data for short-term regulation and ramping
- Examine wind variation in combination with load variations and hydro system capabilities
- Utilize wind forecasting best practice and combine wind forecast errors with load forecast errors
- Examine actual costs independent of tariff design structure

***This comment was addressed in the response to comments in the WHFS Work Plan (comment #24).***

Matt Schuerger

First, while Intertribal COUP has often spoken of a our "80 MW" intertribal wind project (10 MWs on each of 8 reservations in the Dakotas), that has been our initially planned installation proposed prior to this study which was meant to serve as a convenient place holder for significant Tribal wind development. The WHS includes Tribes beyond our original COUP Dakotas project in MT and WY and our present COUP membership is up from 8 to 13, including

one Tribe in WY. Project costs have also increased since our original estimates for the initial phase and now any single project would require at least 20 to 30 MWs per site to gain appropriate economies of scale. So we are looking at something closer to the 400 MWs at a minimum as recommended by Mr. Schuerger, and up to 3,000 MWs (at 35% to 40% capacity factors) recommended by COUP by 2015. While Mr. Schuerger discusses 800 MWs to include Tribal and non-Tribal wind, it is COUP's position that this study is for the integration of Tribal wind, and we would request a focus for the WHS on at the very least 800 to 1000 MWs of Tribal Wind.

The overall plan submitted by Intertribal COUP to the federal government in 2001 called for at least 3,000 MWs to be built on reservations across the Northern Great Plains from MT, WY, ND, SD, NE, IA and MN by 2015. This would average about 150 MWs per 20 reservations or so. This 3,000 MWs was too large for our initial project and our plan was to integrate the wind projects in expandable phases to be built out between now and 2015.

***On November 7, 2007 the WHFS Study review team requested information on Tribal wind energy projects from all Tribes within the Upper Great Plains Region. The Tribal wind project questionnaire contained in that request sought information relating to the development of wind energy projects on Tribal reservations. As you are aware from participation on the WHFS project team, this questionnaire seeks specific information that will enable Western to accurately reflect Tribal wind energy projects in the WHFS. Your comment indicates advanced wind energy planning information is available. We have not yet received a completed questionnaire from COUP with the above referenced information. Responses to this request were due to Western on December 7, 2007. When can we expect a completed questionnaire from COUP?***

In the meantime, the Western Governors have proposed 30,000 MWs of clean energy across the entire West. Our COUP proposal would amount to about 10% of the Western Governors' goal of 30,000 MWs to be built in the richest distributed wind resource in North America. **This WAPA Missouri River wind integration study should include significant wind from the reservations in the 3 GW range.**

***This comment was addressed in the response to comments in the WHFS Work Plan (comment #13). For clarification, The WHFS Work Plan identifies several means through which appropriate integration percentages will be identified.***

I would also recommend that the WHS include in its analysis the impacts on system regulation requirements,-- the seconds to minute requirements -- for energy on the grid, and not simply the hourly analysis indicated in your web materials.

***This comment was addressed in the response to comments in the WHFS Work Plan (comment #24).***

I am also enclosing an article for everyone's consideration which discusses the benefits of diverse geographic distribution of wind projects to actually contribute capacity value to wind

projects. The Tribal reservations represent a natural regional geographic diversity all attached to the same wire grid system, ... Westerns. Most analysis of wind projects are done one by one as lined up in the queue. This masks the contributions that a large scale distributed wind project can make to the overall system. This is how Tribes can make the best contribution to the overall energy system AND utilize that system to support a significant build out of tribal resources.

Lastly, I would request that WAPA advise Ellsworth AFB, along with the other AFBs in the region, that Tribes are working with Western to provide wind power to the system that serves their loads and would appreciate their consideration of Tribal wind power in meeting their long term clean energy needs, reminding them of the benefits of Tribal wind power in terms of their federal RPS requirements under EPAct 2005. We have advised our congressional delegations of the great Tribal interest in serving federal load in our region and beyond, and would not want to see significant regional federal load committed to long term contracts prior to Tribal development.

***Your request was forwarded to the Air force on Dec 20, 2007***

Thanks and would appreciate your consideration of these comments as part of our conference call this afternoon.

Bob Gough, Secretary  
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