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Submitted via email to: JOT@wapa.gov

The American Wind Energy Association (AWEA) and the Interwest Energy Alliance respectfully submit the following comments on the Joint Outreach Team (JOT) [Draft Recommendations](#) for ways that federally-owned transmission assets operated by the Western Area Power Administration (WAPA) can help facilitate the transition to a more resilient and flexible grid. Done right, AWEA and the Interwest Energy Alliance believe that reforms to WAPA's operations and business practices will improve reliability for all customers, lower costs to consumers and facilitate the integration of variable resources like wind energy.

AWEA is a national trade association representing a broad range of entities with a common interest in encouraging the expansion and facilitation of wind energy resources in the United States. AWEA members include wind turbine manufacturers, component suppliers, project developers, project owners and operators, financiers, researchers, renewable energy supporters, utilities, marketers, customers, and their advocates.

The Interwest Energy Alliance is a non-profit trade association that represents the nation's leading companies in the renewable energy industry, bringing them together with nongovernmental organizations in the West (Arizona, Colorado, Nevada, New Mexico, Utah, and Wyoming).

I. INTRODUCTION

AWEA and the Interwest Energy Alliance appreciate the opportunity to comment on the JOT's Draft Recommendations, and also WAPA's willingness to pursue important changes that are essential for making our power system work more efficiently for all users. The following comments follow the outline of the JOT Draft Recommendations report, so the order in which recommendations are discussed does not indicate the relative priority of these items.

To reinforce the relative importance of these issues to AWEA and the Interwest Energy Alliance, we refer you to AWEA's August 17, 2012 comments on the "Defining the Future" Initiative. With respect to operating reforms, AWEA identified the following issues in order of importance:

- Participation in an energy imbalance market
- Compliance with FERC Order 764 regarding the integration of variable energy resources
- Sub-hourly generator dispatch
- ACE diversity interchange
- Dynamic scheduling into and out of WAPA balancing areas
- Dynamic line ratings
- Reconductoring
- Greater access for competitive ancillary services

And, with respect to reforming business practices, the top priorities in order of importance that AWEA identified in its August 17, 2012 comments were:

- Compliance with FERC Order 1000
- WAPA Upper Great Plains joining either MISO or SPP
- Improvements to conditional firm transmission service
- Upgrades and expansions of WAPA's transmission system, including using Recovery Act borrowing authority and Section 1222 of the 2005 Energy Policy Act
- Purchasing more renewable energy on behalf of wholesale customers and federal agencies
- Eliminating pancaked rates
- Interconnection queue reform
- Improved integrated resource planning
- Reforming WACM integration rates

We generally agree with the principles that were developed to guide the JOT recommendations as described on page four of the draft recommendations. AWEA and the Interwest Energy Alliance do offer one suggested clarification. With respect to the “ensure that the beneficiary pays” principle, it is essential that the full suite of benefits be considered, and that WAPA recognizes that most of the benefits of the reforms identified below will flow widely to customers and consumers and are not limited to a specific generator.

Regarding the “ensure that Western stays within the limits of its authority” principle, we reiterate our belief as explained in our earlier comments that WAPA has the authority to undertake the reforms discussed below.

Overall, our comments generally support the JOT's draft recommendations. Importantly, in many areas, however, we believe WAPA could better achieve the intent of these reforms by expanding their scope. Similarly, in some areas, we believe WAPA should be moving more aggressively to implement reforms that have a proven track record of success, instead of wasting time and resources studying reforms that have already been studied and implemented elsewhere. Our comments also identify several reforms that were included in our initial recommendations but were not included in the JOT's draft recommendations that we again urge be included in the final recommendations to the Secretary of Energy.

II. COMMENTS ON RECOMMENDATIONS IN JOT DRAFT

A. Required Regulation Reserve Capacity

We support the recommendation that WAPA conduct analysis to determine what regulation reserve capability is needed and what regulation capability is required. AWEA suggests that WAPA should look to the best practices of other large grid operators to inform the methods that are used to develop that analysis.¹ For example, when calculating the total system regulation need, all sources of power system variability should be aggregated to properly account for the diversity benefits of combining non-correlated sources of variability. In addition, WAPA should also adopt the practice used by other large grid operators of making near-real-time adjustments to reserve levels in response to changing system conditions, based on statistical analysis of historical system data as well as load and wind forecasts, and account for that approach in the calculation of the total system regulation need.

As part of this analysis, WAPA should also examine how some of the JOT's recommended grid operating reforms would impact reserve requirements and/or expand the supply of reserves (BA consolidation or coordination, ADI, RBB, DSS, EIM, faster scheduling, faster dispatch, using load following reserves instead of regulation, etc.). Much work that would inform this analysis has

¹ For examples of other grid operators' best practices, see http://www.uwig.org/san_diego2012/Maggio-Reserve_Calculation_Methodology_Discussion.pdf , http://www.uwig.org/san_diego2012/Navid-Reserve_Calculation.pdf , http://www.uwig.org/san_diego2012/Loutan-San_Diego.pdf , http://www.uwig.org/san_diego2012/Noailles-calculating_reserve.pdf

already conducted by other grid operators and national research laboratories, so WAPA could largely base this assessment on that existing information without devoting resources to redundant analytical work.

In addition to accounting for WAPA's existing regulation reserve capabilities, the analysis should develop an economic supply curve of these resources to ensure that the least cost resources are being used to provide these services. This analysis could be expanded to include new reserve capabilities that could potentially be brought online through changes to the operation of existing generation, retrofits to existing generation, new sources of generation, demand response, and other potentially innovative sources of regulation capability.

B. OASIS

We generally agree with Western that consolidating the four existing OASIS sites into a single OASIS site will make the site more efficient and less confusing, both for WAPA staff and for customers.

C. Large Generator Interconnection Procedures

While the wind energy industry is directly impacted by LGIPs and is concerned about this issue, we will reserve judgment on the LGIP reform suggestions until the full proposal is published in the Federal Register for public comment.

D. Rate Pancaking

We agree with Western that eliminating rate pancaking will improve the efficiency of the grid and reduce costs for customers, and urge Western to work to overcome any obstacles to eliminating rate pancaking.

E. Rate-Setting Methodologies

We support the recommendation that WAPA should examine the potential implementation of a load-following ancillary service. A large share of the variability on the power system is slower variability that can be readily accommodated using load-following reserves that are far less expensive than the regulation reserves that are used today. Using regulation reserves to accommodate all sources of intra-hour variability, even though many could have been accommodated by load-following reserves, is an inefficient outcome that unnecessarily increases costs for consumers.

F. Integrated Resource Planning Program

AWEA and the Interwest Energy Alliance do not currently have comments in this area.

G. Infrastructure Investment Study

We support the recommended infrastructure investment study for the reasons indicated in the JOT report. In conducting this analysis, the economic benefits of transmission should be included, in addition to reliability benefits. The potential economic benefits of transmission include consumer savings from expanded access to lower cost energy resources, reduced transmission losses, greater ability to share reserves, reduced reserve needs, and others. Consistent with the proposed beneficiary pays principle and to reflect the fact that transmission infrastructure is a long-lived investment with impacts over a large geographic area, the planning horizon for evaluating the benefits of transmission should be expansive, both geographically and chronologically.

H. Combined Transmission System Opportunities

We support this effort to make WAPA's transmission system operate more efficiently, in conjunction with other reforms such as balancing area consolidation or cooperation, intra-hour and dynamic scheduling, and an energy imbalance market.

I. Contract Path to Flow Based

We support this change for the reasons identified in the JOT Draft recommendations.

J. Electric Power Training Center

We do not have a strong view on this matter.

K. Intra-Hour Scheduling

We strongly support WAPA's commitment to comply with FERC Order 764, including the 15-minute or faster intra-hour transmission scheduling requirement. When evaluating how to update its systems and procedures to comply with the 15-minute scheduling requirement, we encourage WAPA to take a forward-looking view and capture the benefits that would come from a move to faster, more efficient, and more automated transmission scheduling procedures. Such a forward-looking approach would put WAPA in a better position to accommodate operating structures that may be implemented in the future and will yield even greater benefits for WAPA's customers, such as faster generator dispatch and/or an energy imbalance market.

L. Implementation of ADI, RBC, DSS

While we appreciate that the Draft JOT recommendations include these proven, highly beneficial reforms, we strongly urge WAPA to move beyond a lengthy study process for these reforms and instead implement them as soon as possible. As the Draft JOT report itself notes, "Within Western, various regions have implemented a number of these initiatives already."² Using ADI (Area control error diversity interchange) as an example, many utilities in the Western U.S. began an ADI pilot program in 2006, and the program has proven to be very successful, with extremely large benefits and very low costs.³ Costs last year totaled \$24,000 per participating balancing authority, and participants have reported improved reliability, reduced reserve needs, and millions of dollars in operating cost savings. Moreover, safeguards in the design of the program, such as an ability to opt-out at any time, guarantee that all participants are made better off.

We strongly believe that the JOT Draft Recommendation, which currently only calls for WAPA to start an analysis of ADI within 12 months, should instead call for WAPA to join the ongoing ADI program as soon as possible. Instead of calling for WAPA to start an analysis of DSS (dynamic scheduling system) in 18 months, after the analysis of ADI has been conducted, DSS implementation should begin as soon as possible as well, as DSS has already been successfully implemented in other parts of WECC.⁴

M. Energy Imbalance Market Initiatives

Among the most important points we are making in our comments is that WAPA should be moving more aggressively to implement or participate in an Energy Imbalance Market (EIM). EIM is a proven tool for increasing power system efficiency and benefiting consumers, with the Southwest Power Pool finding benefits greatly exceeding costs, and expectations, over its six year experience

² Page 23

³ <http://www.publicgeneratingpool.com/wp-content/uploads/2012/02/Carol-Opatrny-021612.pdf>

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<http://www.wecc.biz/committees/StandingCommittees/OC/ISAS/Shared%20Documents/Dynamic%20Scheduled%20Remote%20Generation%20and%20Load.pdf>

with an EIM. We strongly believe that WAPA can implement an EIM and satisfy the stakeholder concerns expressed in the Draft JOT report.⁵

An EIM allows changes in supply and demand in one grid operating area to be netted out with opposite changes in other grid operating areas at frequent intervals. The benefits of improved coordination go well beyond integrating renewable energy at lower cost, as all consumers will benefit.

A number of studies have analyzed the costs and benefits of (EIMs), and all have concluded that the benefits of well-designed EIMs greatly exceed the costs. The Western Electricity Coordinating Committee's (WECC's) cost-benefit analysis found that with an existing entity implementing a well-designed EIM, the net benefits for consumers would be at least \$60 million per year. The annual operational costs would be around \$80 million, in addition to one-time startup costs of \$67 million. Under that scenario, the initial startup costs would be recouped in just over a year, and the EIM would yield 10-year net benefits of between \$550 million and \$1.46 billion.⁶ Combining separate cost analyses by SPP and CAISO and a benefit analysis by NREL confirms that an EIM would yield net benefits of around \$1.5 billion over the first ten years.⁷

Real-world experience also proves that the benefits of an EIM greatly exceed the costs. SPP launched its EIM in February 2007, and the benefits have exceeded SPP's already high expectations. SPP's analysis in 2005 calculated the cost of operating SPP's EIM for the first ten years to be \$212.5 million, while the benefits over that ten-year period would be around \$600 million.⁸ That analysis was based on estimated benefits of \$86 million for the EIM's first year, and the actual benefit was even higher at \$103 million.⁹

Customers would benefit from an EIM even in the absence of renewable generation, as an EIM allows all changes in supply and demand on the power system, such as factory equipment coming on and offline and consumers turning appliances on and off, to be accommodated more efficiently and at lower cost. In fact, NREL's analysis indicates that most of the expected savings of an EIM are realized by better accommodating changes on the grid unrelated to the addition of wind energy.¹⁰

An EIM can function well in the absence of a Regional Transmission Organization, and participation in an EIM would not cause entities that are currently outside FERC's jurisdiction to become jurisdictional.

We strongly disagree with some of the reasoning expressed in the Draft JOT report arguing against EIM implementation. For example, we are confused by the argument in this section: "Implementation and evaluation of RBC, ADI, DSS and intra-hour scheduling could accomplish some of the benefits of the energy imbalance markets initiatives. Therefore, energy imbalance market initiatives would continue to be studied, but their potential implementation would not be

⁵ Listed on pages 24-25

⁶ Available at <http://www.wecc.biz/committees/EDT/EDT%20Results/EDT%20Cost%20Benefit%20Analysis%20Report%20-%20REVISED.pdf>

⁷ See <http://www.westgov.org/PUCeim/webinars/05-10-12/EIMresults.pdf>,
<http://www.westgov.org/PUCeim/documents/drftNRELba.pdf>,
<http://www.westgov.org/PUCeim/documents/fnl-SPPEIMce.pdf>,
<http://www.westgov.org/PUCeim/documents/CAISOcewa.pdf>

⁸ Available at <http://www.spp.org/publications/CBARevised.pdf>

⁹ Available at <http://www.spp.org/publications/Present%20&%20Future%20Market%20Benefits.pdf>

¹⁰ <http://www.westgov.org/PUCeim/webinars/07-24-12/EIMallocation.pdf>

undertaken before the benefits of the other initiatives, such as ADI, RBC, DSS and intra-hour scheduling have been fully evaluated.”¹¹

We agree with the first sentence, as the listed reforms do allow the capture of some of the benefits of an EIM, but fall short of the full benefits of achieving both balancing area coordination and faster generator dispatch. However, given that an EIM offers superior benefits, we do not understand why WAPA should wait until other initiatives have been studied to proceed with an EIM. While we understand WAPA’s concern for protecting its customers from even a slight risk of incurring minor costs, every day that delays implementation of grid reforms like an EIM exposes WAPA’s customers to a 100% risk of incurring massive excessive costs.

Much like some countries have successfully leap-frogged over land-line telephones in the direct transition from having no telephones to having cell phones, there is an opportunity for WAPA and other parts of the WECC grid to leap-frog from antiquated grid operating procedures to fully developed and proven grid operating solutions like an EIM, potentially saving time and effort in the process. The draft recommendation to start studying ADI 12 months from now is akin to a recording studio suggesting that in 12 months it would begin to evaluate the costs and benefits of moving from cassettes to CDs, when it could leap-frog to MP3s.

N. Integration and Aggregation of Renewable Energy Projects

We generally support this effort.

III. OTHER SOLUTIONS THAT SHOULD HAVE BEEN INCLUDED IN JOT DRAFT RECOMMENDATIONS BUT WERE NOT

A. Western’s Upper Great Plains division should join an ISO

MISO’s or SPP’s expertise in integrating renewable energy would benefit WAPA and its customers, as would access to either ISO’s large pool of generating assets and balancing capabilities. Joining an ISO would reduce pancaked transmission rates for energy transactions with the ISO, which would benefit WAPA’s customers and wind energy generators.

B. Conditional firm transmission service

We appreciate that WAPA has created a long-term, non-firm transmission service. But, to date, participation has been limited. WAPA should work with customers to ensure that obstacles are not preventing greater use of this option. The Bonneville Power Administration has been a leader in the use of conditional firm service, so WAPA should consider consulting with them.

C. Expanded purchases of renewable energy

WAPA should purchase more renewable energy on behalf of customers and federal agencies. WAPA could directly purchase on behalf of its customers under a long-term PPA, perhaps on an aggregated basis, rather than only allowing it to purchase replacement power when water levels are not adequate to meet the WAPA allocation needs.

¹¹ Page 21

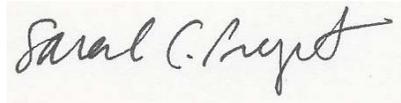
IV. CONCLUSION

We respectfully request that the Department of Energy and WAPA consider these comments as it develops final rules to make its transmission system operate more efficiently for all users.

Respectfully submitted,



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