

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

Notice Of Inquiry) Docket No. RM10-11-000
Integration of Variable Energy Resources)

**COMMENTS OF THE
INDEPENDENT POWER PRODUCERS COALITION OF THE WEST**

On January 31, the Federal Energy Regulatory Commission (the “Commission”) issued a Notice of Inquiry (“NOI”) seeking comment on the extent to which barriers exist that may impede the reliable and efficient integration of variable energy resources (“VERs”) into the electric grid and whether reforms are needed to eliminate those barriers. The Commission noted that while integration of VERs presents challenges, “VERs also present benefits, such as low marginal energy costs and reduced greenhouse gas emissions, which have contributed to the accelerated development of these resources.” The Commission established two goals: “first, to ensure that rates for jurisdictional service are just and reasonable, reflecting the implementation of practices that increase the efficiency of providing service; and second, to prevent VERs from facing undue discrimination.”

The Independent Power Producers Coalition of the West (“IPPC-W”) hereby submits these comments in response to the NOI.¹ IPPC-W’s comments focus on issues of particular concern to independent power producers (“IPPs”) that operate generating facilities within the non-ISO/RTO markets in the

¹ For the purpose of this docket, the Independent Power Producers Coalition of the West represents the following advocacy groups active in the Western Interconnection: Arizona Competitive Power Alliance, Colorado Independent Energy Association, Independent Energy Producers Association (California), New Mexico Independent Power Producers Coalition, and the Northwest & Intermountain Power Producers Coalition.

Western Electricity Coordinating Council reliability region referred to here as the “Hybrid West.”²

Assets owned by the members of groups affiliated with IPPC-W include conventional generation, such as coal and gas fired thermal power plants, and renewable generation, such as geothermal and biomass and VERs, *i.e.*, wind and solar powered generating facilities.

IPPC-W is following the recent positive developments that have been taken to integrate VERs in the Hybrid West. These actions, however earnest and however much in the right direction, are voluntary, incremental, isolated and inconsistently implemented. Too little is occurring between Balancing Authorities (BAs) and too much of what is occurring favors incumbent utility interests while leaving the capabilities of IPPs untapped – whether the affected IPP generation are thermal power plants or VERs.

Commission Orders 888, 890 and 2003 designed to foster competitive markets have yet to be fully realized in the Hybrid West.³ The integration of VERs has revived interest in the Commission’s original guidance and calls for examination of the Commission’s authorities under Section 205 and 206 of the Federal Power Act to remedy undue discrimination in the transmission of electric energy and its sales in interstate commerce.

In this NOI, the Commission asks the power sector to take a “fresh look at existing policies and practices in light of the changing characteristics of the nation’s generation portfolio with the aim of removing unnecessary barriers to

² The comments submitted by the Electricity Power Supply Association (EPSA) address challenges facing VERs in organized markets. IPPC-W suggests the reader consult EPSA’s comments together with these comments for a more complete picture of the competitive power industry’s perspective on the issues raised in Docket No. RM10-11-000.

³ See Order No. 888, 18 C.F.R. § 35 (1997); Order No. 890, 18 C.F.R § 37 (1996); and Order No. 2003, 18 C.F.R. § 35 (2003).

transmission service and wholesale markets for VERs (and other technologies that may aid their integration) and promoting greater efficiencies that ultimately will reduce costs to consumers.” NOI at p. 7. IPPC-W encourages the Commission to implement policy that will enable independently owned generating resources to operate in a robust, transparent market so that IPPs can invest in and leverage the full and flexible capability of their power projects. Doing so will assure optimized and non-discriminatory operations in the Hybrid West and simultaneously advance national goals for environmental protection and resource diversification.

1. What role can forecasting tools play in enhancing VER integration?

The Commission sought comments on how “the Commission should modify existing operational data reporting to enhance practices used to forecast generation from VERs.” NOI at p. 11.

System operators have long dealt with the variability of load. IPPC-W believes that it is possible for system operators to become as comfortable with the variability of VERs as they are today with the variability of loads. Reaching this point will require deployment of advanced weather forecasting tools that have recently been and will continue to be commercialized.⁴ More importantly, the Commission should seek ways to standardize forecasting protocols upon which operational decisions can be made.

In order to advance VER integration in the Hybrid West, the Commission should require wind forecasting to be implemented by each BA and by the Security Coordinators (“SCs”) that serve each sub-region. Each BA and the SCs

⁴ For example, the Alberta Electric System Operator's (AESO) stated goal of integrating as much wind as feasible without compromising system reliability or the fair and openly competitive operation of the market was addressed by its engagement of WEPROG, a wind forecasting company. WEPROG will provide wind forecasts to be used in all aspects of AESO operations from 10 minutes to 144 hours ahead. AESO Media Release, January 19, 2010.

should be required to adopt Commission approved uniform protocols that define “persistence” of weather conditions as characterized by proven forecasting tools. The standard forecasting protocols should clearly identify the “triggering conditions” for BAs and/or the SCs to engage reserves in anticipation of a loss of VER generation.

In addition to better forecasting, system operators and the SCs need access to within-hour firming and fast-responding energy products. Although these products are physically available today from IPP-owned thermal generation, these IPP assets remain commercially or structurally inaccessible to system operators. BAs in the Hybrid West fail to fully utilize the dispatchable resources operated by IPPs. Instead, vertically integrated utility BAs typically use generation owned by their merchant affiliates for regulation, frequency control and other ancillary services. This leaves only multi-hour block, or hourly fixed energy to be traded bilaterally. This practice excludes IPPs from participating in balancing the grid. Such exclusion prevents optimization of IPP-owned non-VER generation, VER operations and that of the transmission infrastructure managed by BAs.

2. What changes to scheduling practices are needed to best manage VER integration?

The Commission noted that in non-ISO/RTO regions, “resources typically schedule transmission service on an hourly basis and are only allowed to adjust their schedules during the hour for emergency situations that threaten reliability.” NOI at p.13. IPPC-W believes that shorter scheduling intervals will make a significant difference in allocating dedicated reserve margins and determining other requirements that compromise the potential for expanded introduction of VERs in the Hybrid West.

Setting intra-hour scheduling windows at narrower intervals need not compromise reliability in the Hybrid West. IPPC-W recommends that the Commission require scheduling to be uniformly set to nothing longer than 30-minute intervals by a date certain. Moreover, the Commission should insist upon further narrowing of these scheduling windows over time to better facilitate VER integration. The Commission's direction should not only apply to intra-hour scheduling within BAs, but include insistence on shorter scheduling windows between BAs. Importantly, this enhanced scheduling flexibility should be available to all generation, not just VERs.

The Commission's engagement will add urgency to the encouraging but slow and disjointed progress that has recently become evident in the West.⁵ These scattered initiatives to narrow traditional block-hour scheduling practices are occurring to some extent *within* Hybrid West balancing authorities but standardization *between* BAs is still a novelty, proceeding at a similar pace.⁶ The Commission should require standardization, mandatory and inclusive participation in these programs, and implementation by a date certain. Standardization of higher granularity in BA-to-BA transactions will allow operators throughout the Hybrid West to more accurately match the ever more quickly changing load and resource balance.

3. Should Balancing Authority consolidation be viewed as a prerequisite to VER integration?

Balancing Authority consolidation is based on the premise that superior

⁵ For a copy of Bonneville Power Administration's Intra-hour Scheduling Pilot Program (Phase 1) Business Practice, which allows excess output to be scheduled from wind generation resources mid-hour see: <http://www.transmission.bpa.gov/includes/get.cfm?ID=1594>

⁶ For documentation of ongoing work on the Intra-Hour Transaction Accelerator Platform (ITAP) being developed by the Joint Initiative Products and Services Strike Team sponsored by Columbia Grid, Northern Tier Transmission Group and WestConnect see: <http://www.columbiagrid.org/ji-nttg-wc-overview.cfm>

results can be achieved with one independent operator charged with the task of maintaining grid reliability and making efficient use of existing generation and transmission assets. The benefits of BA consolidation to VER integration could be significant, although BA consolidation is not necessary for successful and cost-effective VER integration. However, in spite of its successful implementation elsewhere, the BAs in the Hybrid West, with the exceptions of Alberta and California, have been unable, despite considerable effort, to consolidate.

It is encouraging to observe BAs throughout the Hybrid West moving toward *virtual* consolidation with the adoption of Area Control Error (ACE) Diversity Interchange (ADI).⁷ This “baby step” shows that in spite of the resistance to full consolidation, the region is interested in exploiting optimization and associated benefits that are achievable through increased BA coordination.

IPPC-W supports generation-only BAs beginning with their ability to increase visibility, increase the quantity of generation on Automatic Generation Control and thereby aid in ensuring reliability within and across BAs. An equally strong case can be made that generation-only BAs, by enabling power plant operators to directly assume reliability obligations on an equal basis with incumbent utilities, enhance the ability of VER projects to integrate into the broader system.⁸ Moreover, these BAs demonstrate the feasibility, however cumbersome, of flowing power both from their generation-only BA to load centers seeking renewable energy and to flow ancillary services in to the BA so that it can meet its reliability obligations.

IPPC-W views the development of generation-only BAs as a symptom of a more ubiquitous problem – the inability of market participants to reasonably

⁷ Columbia Grid, ACE Diversity Interchange (ADI) Program, <http://www.columbiagrid.org/ace-diversity-overview.cfm>

⁸ See Letter from Malcom McLellan and Carol Opatrny to Kimberly Bose, Secretary, Federal Energy Regulatory Commission, and attached paper, *Power System Balancing Authority Innovation*, March 19, 2010. On file with FERC in this docket number RM10-11-000.

integrate or optimize their resources under Hybrid West market structures.

Increasing access to dynamic scheduling both within and between BAs would be a step in the direction of solving fundamental non-ISO/RTO shortcomings. Promising work is underway in the Hybrid West to overcome this barrier.⁹ Meanwhile, IPPC-W is watching with great interest the Bonneville Power Administration's ("Bonneville") customer-supplied generation imbalance pilot project that it is conducting with Iberdrola Resources. This project, scheduled to launch in October 2010, is intended to demonstrate how Bonneville wind generation customers can aggregate resources within Bonneville's BA and self-supply market-priced regulation and other BA services.¹⁰

IPPC-W applauds these efforts and optimistically believes that BA status will not be a prerequisite to the provision of, or access to, non-host BA ancillary services. IPPC-W suggests that the Commission embrace uncommon structures, including generation-only BAs, as a necessary and helpful step in facilitating VER integration and protecting system reliability.

4. How can Reserve Products and Ancillary Services better support VER integration?

Vertically integrated utility BAs in the Hybrid West's markets primarily use their own merchant affiliate's generation for balancing and other ancillary services. In the event that they require assistance, they rely on each other. For example, the Northwest Power Pool's Reserve Sharing Program allows member utilities to share reserves and support each other in the event of a

⁹ Columbia Grid, Joint Initiative with Northern Tier Transmission Group and WestConnect, DSS Program, <http://www.columbiagrid.org/DST!-documents.cfm>.

¹⁰ Bonneville Power Administration, Customer Supplied Generation Imbalance Pilot, Wind Integration Team Update, January 28, 2010, Salah Kitali, p. 21 – 23.

contingency.¹¹ Wind down ramp events currently do not qualify for sharing of reserves under this program. The Commission should consider ways to modify such longstanding contingency reserve arrangements and broaden BAs ability to tap other generation resources such as IPP thermal power plants, in order to respond to down ramp events triggered by VERs.

Grid reliability is presently maintained through reserve requirements based on a N-1 (loss of largest transmission line) or G-1 (loss of a single largest generator) event. However, weather related events, such as a delayed storm front or accelerated cloud cover can affect numerous VERs and have a significant effect on the grid. The establishment of a new reserves category, such as a “W-1,” for managing changes in weather affecting solar and wind generation should be considered.

The fundamental problem is the ongoing disparate treatment of generation assets as based on ownership. This abiding bias by utility BAs requires mitigating action and a fresh look at what underlies system operations. A utility’s generation assets are, of course, guaranteed cost recovery through rate base. However, IPP generation projects have no such assurance; if they are to contribute to VER integration they must have the opportunity to be made whole through market mechanisms. This is particularly true given that an increase in wind power generation in certain markets is driving down energy prices. Fossil-fired generators that offer valuable non-energy products, *i.e.*, ancillary services, need be compensated for the capacity and balancing services they are willing to competitively provide in order to ensure grid reliability. Similarly, BAs should be required to implement provisions to enable VERs where necessary, to self-provide ancillary services that they may procure bilaterally.¹²

¹¹ This program currently holds reserves according to the Western Electricity Coordinating Council contingency reserves standard at 5% for hydro generation and 7% for thermal generation but no percentage has been developed for other types of generation resources.

¹² *Pro Forma OATT*, FERC Order No. 890-B, Appendix B (section 3) at p. 179, 123 FERC ¶ 61,299 (2008).

IPPC-W believes that the Commission can underscore the importance of its long-standing policies by making it clear that IPPs must be allowed to participate fully in the provision of balancing services and energy. VER IPPs and conventional thermal IPPs are both needed in order to fully integrate VERs. The Commission has also made clear that dynamic scheduling must be a viable backstop to BAs' obligations to generators operating within their boundaries and through to adjacent BAs. Full implementation of dynamic scheduling is critical to the Hybrid West. Dynamic scheduling and pseudo ties will allow the intermittent nature of a VER to be appropriately moved to the load demanding renewable energy. These solutions must not only be discussed and used within and between BAs, they must be equitably available to all interested market participants.

5. How should Real Time Adjustments be managed for VERs?

Vertically integrated utility BAs in the Hybrid West consider curtailment of VERs as the best choice for resolving over-generation conditions. It is vital to promote mechanisms, including curtailments of fossil generation, with appropriate compensation ("decremental" re-dispatch) and regardless of ownership, as alternatives to this sole mitigation of over-generation conditions.

Nonetheless, curtailment of VERs, just as any other resource, should be based on its transmission priority in the non-ISO/RTO markets. In the Hybrid West VERs should be curtailed based on transparent processes targeting transmission overloads, but always *pro-rata* within the same transmission category. As with all generation, curtailment of VERs must only be used as a "last resort" action required to ensure grid reliability.

6. What else would help Western markets best handle VERs?

IPPC-W is increasingly concerned about the ability for VERs developed by IPPs, to transact in forward bilateral markets in the Hybrid West. These non-

ISO/RTO markets are characterized by a myriad of regulatory policies and tariffs and a lack of standardization in the provision of transmission services. Not only do BAs increase rates for integration of VERs, BAs frequently change fundamental operational terms and conditions asserting that such changes are necessary for reliability. Meanwhile, concerns about the impacts of VERs on BA operations add to the general uncertainty. These conditions make it very difficult for IPPs to offer VER power sale contracts over the long term, thereby eroding IPP-sponsored development of VERs.

The Commission should support the creation of a platform in the Hybrid West, managed by a capable, non-market participant, where entities, regardless of ownership, may buy and sell reserves at sub-hourly intervals. Such reserves would include fast acting energy, following services and offers to decrement load from large industrial customers or generation from block-scheduled units such as coal-fired power plants. While formation of an RTO/ISO is a logical mechanism for hosting such a platform, it need not be required. The Commission should also encourage BAs to expedite the provision of dynamic scheduling and pseudo ties to enable this nascent market, which would dramatically reduce the amount of reserves that any given BA would need to hold for wind or solar power integration.

IPPC-W, along with many other market participants, will follow with interest recommendations for innovation with respect to creation of markets to help BAs manage day-ahead scheduling. In any case, IPPC-W recommends that the Commission consider only those proposed solutions that protect reliability and are transparent, standardized and open equally to IPP-owned as well as utility-owned generation resources.

Conclusion

If the United States is to secure the full environmental benefits of VERs

then BAs will need to reconfigure their operations to accommodate VER generation to the fullest extent possible. New contractual arrangements and inclusive operational policies need to be adopted. IPPC-W is confident that this can be done, without compromising reliability, provided changes are made in policy, implementation and grid operations. Grid reliability can be maintained and consumers will benefit once the electric industry, all across the country, exercises existing generation and transmission infrastructure equitably and to their fullest extent.

Respectfully Submitted,

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