

**MEMORANDUM**

March 1, 2010

To: WSPP  
From: Arnie Podgorsky  
Patrick Morand  
Re: Variable Energy Resources: Firm or Non-Firm

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In response to questions of some members, WSPP asked that we survey Federal Energy Regulatory Commission (“Commission”) precedent that may bear upon whether and under what circumstances, if any, it is appropriate under the Federal Power Act to sell energy from a variable energy resource (“VER”) as firm (Service Schedule C) energy.

This memorandum sets out results of our research. It does not contain a legal opinion. WSPP participants should not hesitate to inform us of any other relevant Commission issuances or any disagreement with the contents of this memorandum.

The question is significant for several reasons, some economic and others legal. Factors include price, market acceptance, need for “firming” services, designation as a network resource, and, potentially, requirements of a market behavior rule.

As you will see, there is relatively little Commission precedent or authority. What precedent or authority exists indicates that energy from VERs can properly be sold as firm when and if the facts justify a firm designation. Therefore, there is no basis to conclude that all VER energy is non-firm and no basis to conclude that it is properly sold as firm. If a VER is firmed (and the firm resource is deliverable), then the energy is firm. If weather or dispersion characteristics sufficiently assure delivery, then the VER energy is firm. Absent these kinds of attributes that justify a firm sale, VER energy would not appear firm.

It should be noted that the Commission recently issued a notice of inquiry concerning the integration of VERs. *Integration of Variable Energy Resources*, Notice of Inquiry, 130 FERC ¶ 61,053 (2010) (“VER Notice of Inquiry”). The results of the Commission’s inquiry conceivably could bear on the subject of this memorandum.

## I. Order No. 69

In Order No. 69,<sup>1</sup> the Commission issued rules requiring electric utilities to purchase electric energy and capacity “made available by qualifying cogenerators and small power producers at a rate reflecting the cost that the purchasing utility can avoid as a result of obtaining energy and capacity from these sources, rather than generating an equivalent amount of energy itself or purchasing the energy or capacity from other suppliers.” Order No. 69 at 30,864.

As to firmness, the Commission explained that “[s]ales of electric power are ordinarily classified as either firm sales . . . or non-firm power sales,” and “[p]urchases of power from qualifying facilities will fall somewhere on the continuum between these two types of electric service.” *Id.* at 30,881-82. For example, “wind machines . . . may be so uncertain in availability of output that they would only permit a utility to avoid generating an equivalent amount of energy” and require “the utility [to] continue to provide capacity . . . to meet the needs of its customers.” *Id.* On the other hand, the Commission also explained that “effective amounts of firm capacity exist for dispersed wind systems, even though each machine, considered separately, could not provide capacity value” and that “[t]he aggregate capacity value of such facilities must be considered in the calculation of rates for purchases, and the payment distributed to the class providing the capacity.” *Id.*

Order No. 69, in short, appears to support a factual approach to the question: a VER can support firm energy sales if and to the extent the system supports an aggregate capacity value.

## II. Capacity Markets

In its VER Notice of Inquiry, the Commission explained that VER such as wind “are eligible to receive compensation for capacity services in most RTOs/ISOs” but “due to their operating characteristics and the capacity rating rules, which vary among RTOs/ISOs, VERs are eligible to offer only a portion of their nameplate capacity.” VER Notice of Inquiry at P 37. The following are examples of such discounts:

- Midwest Independent Transmission System Operator, Inc. (“Midwest ISO”) uses in its Planning Reserve Margin a wind capacity credit of 20%. See Midwest ISO Planning Reserve Margin for 2010/11 Planning Year (*available at*: [http://www.midwestiso.org/publish/Document/4dfde8\\_124a04ca493\\_-7f5f0a48324a](http://www.midwestiso.org/publish/Document/4dfde8_124a04ca493_-7f5f0a48324a)).

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<sup>1</sup> *Small Power Production and Cogeneration Facilities; Regulations Implementing Section 210 of the Public Utility Regulatory Policies Act of 1978*, Order No. 69, 1977-1981 FERC Stats. & Regs., Regs. Preambles ¶ 30,128, *order on reh’g*, Order No. 69-A, 1977-1981 FERC Stats. & Regs., Regs. Preambles ¶ 30,160 (1980), *aff’d in part and vacated in part*, *Am. Elec. Power Serv. Corp. v. FERC*, 675 F.2d 1226 (D.C. Cir. 1982), *rev’d in part*, *Am. Paper Inst., Inc. v. Am. Elec. Power Serv. Corp.*, 461 U.S. 402 (1983).

- PJM Interconnection, L.L.C. (“PJM”) uses in its base case modeling assumptions for its Reserve Requirement Study a capacity factor of 13% for wind resources. See 2009 PJM Reserve Requirement Study, Appendix A (*available at: <http://www.pjm.com/planning/resource-adequacy-planning/~media/documents/reports/2009-pjm-reserve-requirement-study.ashx>*).
- Southwest Power Pool, Inc. (“SPP”) “assigns wind resources a net dependable capacity of 10 percent of their nameplate capacity to calculate the safe harbor limit for network upgrade costs associated with wind resources.” *Southwest Power Pool, Inc.*, 127 FERC ¶ 61,283, at P 4 (2009).

The California Independent System Operator Corp. (“California ISO”), in calculating net short energy for its must-offer obligation,<sup>2</sup> fully discounts wind generation capacity because there is not a reliable day-ahead wind/energy forecast, and it is not “willing to risk firm commitment of generation in lieu of wind generation.” *Cal. Indep. Sys. Operator Corp.*, 110 FERC ¶ 61,071, at P 13 (2005). On the other hand, the California Public Utilities Commission adopted an “exceedance” methodology for including wind and solar resources into its resource adequacy program. See Decision 09-06-028, Order Instituting Rulemaking to Consider Annual Revisions to Local Procurement Obligations and Refinements to the Resource Adequacy Program (Issued June 22, 2009). The applicable methodology provides for an estimate of generation availability during peak hours (i.e., the quantity of generation exceeded during 80% of the peak hours). *Id.* at 47.

### III. Wind as a Designated Network Resource

The Commission did not address in Order No. 890<sup>3</sup> whether a wind generator could be appropriately designated as a network resource. In that order, the Commission, among other things, described “the resources a network customer can appropriately designate as a network resource.” Order No. 890 at P 1432. The Commission explained that “the network customer must demonstrate that it owns or has committed to purchase generation pursuant to an executed contract in order to designate a generating resource as a network resource.” *Id.* The Commission clarified that “a firm purchase need not be backed by a capacity purchase to qualify

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<sup>2</sup> The must-offer obligation requires “most generators serving California markets . . . to offer all of their capacity in real time during all hours if it is available and not already scheduled to run through bilateral agreements.” *Cal. Indep. Sys. Operator Corp.*, 108 FERC ¶ 61,022, at 61,084 (2004).

<sup>3</sup> *Preventing Undue Discrimination and Preference in Transmission Service*, Order No. 890, 2006-2007 FERC Stats. & Regs., Regs. Preambles ¶ 31,241, *order on reh’g*, Order No. 890-A, 2006-2007 FERC Stats. & Regs., Regs. Preambles ¶ 31,261 (2007), *order on reh’g and clarification*, Order No. 890-B, 123 FERC ¶ 61,299 (2008), *order on reh’g and clarification*, Order No. 890-C, 126 FERC ¶ 61,228, *order on clarification*, Order No. 890-D, 129 FERC ¶ 61,126 (2009).

as a network resource.” *Id.* at P 1433 (citing *Illinois Power Co.*, 102 FERC ¶ 61,257, at P 14 (2003), *reh'g denied*, 108 FERC ¶ 61,175 (2004)).<sup>4</sup>

While the Commission did not address wind as a designated network resource in Order No. 890, it elsewhere has indicated that wind facilities can be designated as network resources. *See, e.g., Southwest Power Pool, Inc.*, 127 FERC ¶ 61,283, at P 1 (2009) (discussing “cost allocation methodology for network upgrades associated with the designation of wind resources as network resources”); *Puget Sound Energy, Inc.*, 128 FERC ¶ 61,213, at P 16 (2009) (discussing Puget Sound Energy’s Wild Horse wind farm designated as a network resource); *Southwest Power Pool, Inc.*, 118 FERC ¶ 61,148, at PP 5-6 (2007) (discussing an SPP network integration transmission service agreement with American Electric Power Service Corporation (“AEP”) wherein AEP designated as network resources several wind facilities).<sup>5</sup>

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<sup>4</sup> The Commission also explained that power purchase agreements with a firm liquidated damages provision “may be eligible for designation as a network resource if the contract obligates the supplier, in the case of interruption for reasons other than force majeure, to make the aggrieved buyer financially whole by reimbursing them for the additional costs, if any, of replacement power” and “found that the ‘make whole’ [liquidated damages] provision[] . . . [in] the WSPP Schedule C agreement satisfy[ed] this requirement.” Order No. 890-A at P 822 (footnote omitted).

<sup>5</sup> Note that potential consequences of falsely representing non-firm energy as firm (from any resource, whether thermal, hydro or VER), can exceed the damages requirements under the WSPP Agreement. The Commission’s anti-manipulation rule states:

It shall be unlawful for any entity . . . , directly or indirectly, to use or employ, in connection with the purchase or sale of electric energy or the purchase or sale of transmission services subject to the jurisdiction of the Commission, any manipulative or deceptive device or contrivance . . . , in contravention of such rules and regulations as the Commission may prescribe as necessary or appropriate in the public interest or for the protection of electric ratepayers.

16 U.S.C. § 824v(a). For example, the Commission found Enron’s alleged practice of selling non-firm energy as firm to be gaming and revoked Enron’s market based rate authority; Enron derived an unjust profit because it avoided the cost of purchasing operating reserves required for firm energy. *Enron Power Mktg., Inc.*, 103 FERC ¶ 61,343 (2003), *reh'g denied*, 109 FERC ¶ 61,024 (2004). *See also Am. Elec. Power Serv. Corp.*, 103 FERC ¶ 61,345 (2003), *reh'g denied*, 106 FERC ¶ 61,020 (2004). These cases did not involve variable energy and arose in the context of other allegations against Enron.