

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

Imbalance Provisions for Intermittent Resources)	Docket No. RM05-10-000
)	
)	
Assessing the State of Wind Energy in Wholesale Electricity Markets)	Docket No. AD04-13-000
)	

COMMENTS OF THE AMERICAN WIND ENERGY ASSOCIATION

Pursuant to the Commission’s Notice of Proposed Rulemaking (“NOPR”) in the above-referenced dockets dated April 14, 2005, the American Wind Energy Association (“AWEA”) respectfully files the following comments.

I. INTRODUCTION

AWEA strongly supports the proposed rule as set forth in the NOPR subject only to a few minor suggestions and clarifications described below. As the Commission correctly recognizes in the NOPR, the proposed rule is needed to address imbalance penalties that are not just and reasonable as applied to intermittent resources. When applied to intermittent resources such as wind, these unjust penalties produce no reliability benefits in the form of more accurate scheduling. Instead, their only real world effect is to create a significant—indeed, usually prohibitive—economic barrier preventing intermittent technologies from entering certain markets.

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.

II. DISCUSSION

a. The proposed remedy should be implemented as soon as possible

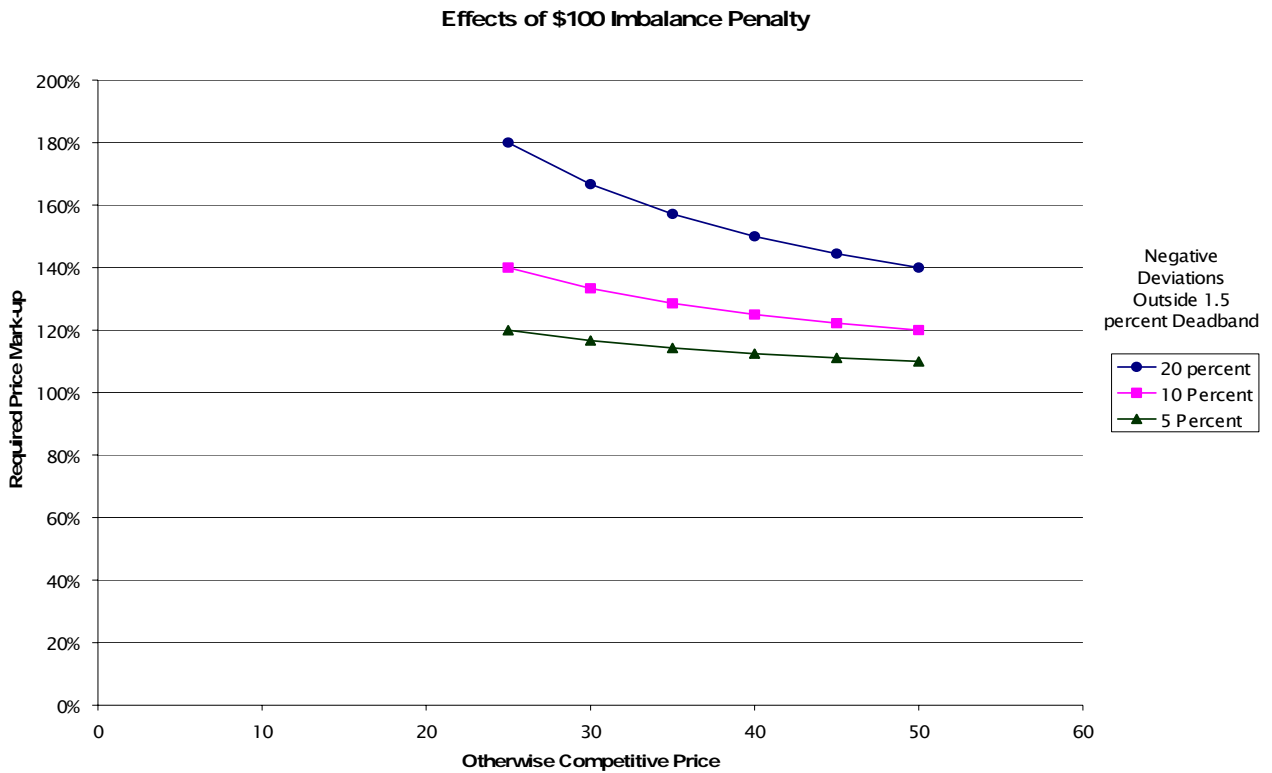
AWEA agrees with the Commission's characterization of the problem and supports the Commission's proposed remedy. This year will be a record year of wind generation development for this fast-growing industry. Much of the historical development has been in areas with ISOs and RTOs. However, future development to meet individual State RPS standards is in areas without ISOs and RTOs where outdated tariffs do not appropriately accommodate wind resources as they do for other resources. The proposed changes, if implemented soon, will have a noticeable effect on renewable energy development in the country.

b. Current tariffs are unjust, unreasonable, and unduly discriminatory

We agree with the Commission that it must act under sections 205 and 206 of the Federal Power Act to "remove the unjust, unreasonable, unduly discriminatory or preferential imbalance tariff provisions, while still providing an incentive to intermittent resources to schedule as accurately as possible." The current tariffs are not efficient or fair as applied to intermittent resources. The provisions were clearly developed with dispatchable resources in mind.

The current \$100/MWh penalty is unjust and unreasonable because that penalty level is vastly in excess of any cost caused by imbalances, and the penalty serves no behavioral purpose when applied to intermittent resources. The justification for a penalty must be based on encouraging a desired behavior. In this case, where output is weather-driven not operator-driven, the penalty has no effect. There is no cost or behavioral basis for the penalty.

The penalty has a significant financial effect on wind generators. Costs can increase over fifty percent, resulting in a need to charge that much more in prices to break even. The cost increase is a function of the percent of time outside the deadband at a particular location, and the market price. The graph below illustrates the effects of penalties applied to 5, 10, and 20 percent of output at various price levels. These figures assume that the penalty is applied to negative imbalances outside the deadband and that negative imbalances must also pay back energy at the market price or in kind. The error percentages represent the magnitude of negative imbalances and are used solely to illustrate the impact on required prices. We note that there is significant confusion in the market about the appropriate application of current penalties in part because they are in both interconnection agreements and transmission tariffs, so these numbers should not be assumed to be representative of all transmission providers.



We note the comments filed by the Transmission Access Policy Study Group on 11/1/04 in PL04-15 pp. 4-6 which describe the imbalance charges that their member Oklahoma Municipal Power Authority (“OMPA”) must pay to Oklahoma Gas & Electric Company. If OMPA were taking transmission service from the wind farm owned by FPL Energy in their area, their imbalance charges would more than double their energy cost. The added charge would amount to approximately \$13 to \$22 for every MWh produced, well above OMPA’s \$16/MWh payments to the wind farm.

In referencing the \$100 MWh penalty, AWEA notes that there is both variation and confusion in the market regarding the source and amount of imbalance penalties. In Order 888, the Commission distinguished between generator imbalances and energy imbalances with the latter being addressed in Schedule 4 of the OATT and the former left to transmission providers to address in their interconnection agreements.¹ Subsequently, several providers sought and received approval from the Commission to include generator imbalance penalties along with energy imbalance penalties in their tariffs. (See, e.g., Niagara Mohawk Power Corp., 86 FERC ¶ 61,009 (1999); PacifiCorp, 95 FERC ¶ 61,145, order on reh’g and clarification, 95 FERC ¶ 61,467 (2001); Alliant Energy Corporate Services, Inc., 93 FERC ¶ 61,340 (2000) (orders on rehearing and court appeal sought on other tariff issues); Wolverine Power Supply Cooperative, Inc., 93 FERC ¶ 61,330 (2000); Commonwealth Edison Co., 93 FERC ¶ 61,021 (2000); FirstEnergy Operating Cos., 93 FERC ¶ 61,200 (2000), order denying reh’g & granting clarification, 94 FERC ¶ 61,184 (2001); Tampa Electric Co., 90 FERC ¶ 61,330 (2000), reh’g denied, 95 FERC ¶ 61,101 (2001); Florida Power Corp., 89 FERC ¶ 61,263 (1999); and Consumers, 87 FERC ¶ 61,170.). These cases typically approve generator imbalance penalties

¹ 75 FERC ¶ 61,080 (1996)

that charge 110% of incremental cost for underdeliveries and pay 90% of incremental cost for overdeliveries with no deadband. Subsequently, the Commission has issued varying opinions regarding whether generator imbalances should be addressed in tariffs or in interconnection agreements (as AWEA discusses later in these comments). As a result of this history, there is some confusion regarding the application of generator versus energy imbalance penalties. In these comments, AWEA addresses penalties including the \$100 MWh minimum charge with a 1.5% deadband, but the 110%/90% scheme with no deadband is also unreasonably punitive when applied to intermittent generation.

c. The NOPR should remain narrow in scope

There are many imperfections in the decade-old pro forma Open Access Transmission Tariff. Processes to resolve these issues will likely take years to resolve and raise significant controversies. We believe this generator imbalance process can move forward on its own and need not be held up to wait for resolution of the other aspects of the tariff.

d. Wind generators are willing and able to pay for the incremental costs they impose on control areas

AWEA agrees with the proposal in the NOPR that imbalances be “settled at the system incremental cost at the time of the imbalance.” (NOPR, Para.9). As discussed at the Commission’s April 13 Open Meeting, the proposal embedded in the NOPR does not exempt wind generators from paying imbalance *costs*. Rather it significantly reduces the imbalance *penalties*, because these penalties are ineffective, inefficient, and unfair.

Notwithstanding AWEA’s support for the payment of incremental energy costs, AWEA believes that payment for other costs associated with wind integration, if any, are beyond the scope of the current proceeding. Indeed, the analysis of the costs associated with and preferences for generation technologies is largely a State issue. If a particular transmission

owner, after a comprehensive and non-discriminatory review of integration costs, believes that its tariff must be modified, it has the rights under Section 205 to request the Commission to make these changes.

e. Imbalance penalties are unavoidable and excessive

Wind generators are variable and non-dispatchable and as such cannot respond to penalties. Penalties are intended to change behavior such as dispatching units outside of a schedule to mislead the market. In the case of non-dispatchable resources, these sorts of gaming behaviors are not possible so penalties do not serve their intended purpose. We agree with the Commission that penalties should be avoidable by behavioral changes. Imbalance penalties act as a “death penalty,” because at their current level they impose such significant costs and risks that they deter wind generator entry in the first place.

The purpose of imbalance penalties is to support the system operator’s need to keep system-wide generation and load in balance in real time. AWEA supports this objective. Most electric systems appropriately balance *system* load and *system* generation. For example, vertically integrated utilities serving their native load allow their resource imbalances to be netted against each other. RTOs with markets allow generators and load to bid into a pool and manage pool-wide supply and demand. However in the transmission tariffs outside RTOs and ISOs, the system operators do not only practice appropriate system balancing but they require every generator to stay in balance. This requirement is inferior because typically some generators are over-scheduled while others are under-scheduled, thus causing no net imbalance and no reliability impact, while causing charges to be assessed twice, from the over-schedulers and the under-schedulers. To be clear, we are not asking for full elimination of imbalance penalties because we realize that RTO-style markets may not come to parts of the country for a

long time, only illustrating that there would be little harm done to reliability if the proposed rule is adopted.

f. AWEA supports the proposed remedy

The proposed remedy is a reasonable balance of incentives and fairness. Currently most ISO and RTO market rules are more favorable to wind generators than the proposal.² However, the proposal is far superior to what is found in Open Access Transmission Tariffs throughout non-RTO/ISO regions. The tariffs without imbalance penalties are more efficient and reliable, and require no significant costs to implement; therefore we support this initiative to reduce imbalance penalties.

AWEA supports the proposal to remedy generator imbalance penalties through a generic rule rather than case-by-case reformation of tariffs. The problem is largely the same in all cases and it would only serve to impose costs on the industry and the Commission to proceed in many dockets rather than one.

g. AWEA supports the proposed scheduling flexibility

We note that for energy imbalance service, the pro forma OATT permits schedule changes up to twenty minutes before the hour at no charge. (NOPR at footnote 35). This is the most important feature of the proposal and we strongly encourage the Commission to preserve it.

We do not believe the scheduling flexibility provided in the NOPR will cause hardship on transmission providers. Those transmission providers who do this now have not found it harms reliability. Having this flexibility is crucial to the ability of wind facilities to meet the proposed deadband in the rule.

² See summary of RTO and ISO rules by the Utility Wind Interest Group.
<http://www.ferc.gov/EventCalendar/Files/20041213162331-UWIG%20Handout.pdf>

h. The proposal is market-tested

The proposed remedy is very similar to tariffs in PacifiCorp and BPA. These tariffs, with scheduling flexibility up to 20 minutes ahead and cost-based charges, work effectively and maintain reliability without significant cost-shifting.

i. AWEA supports the proposed deadband

We support the goal of providing some incentive for good scheduling and forecasting. There is some cost to wind generators for developing and implementing the data systems, models, and scheduling practices required to provide accurate schedules. It is reasonable to expect that wind generators will undertake such investments if there is a reasonable financial incentive for them to schedule accurately. The deadband of 10 percent is appropriate to encourage good practices on the part of wind generators. Based on experience with the similar tariffs mentioned above, we expect some portion of energy will fall outside of this deadband even with good forecasting methods. This will provide sufficient financial motivation to use the best practical methods for wind energy scheduling.

j. AWEA supports the proposed imbalance charges

Wind plants should pay the costs for which they are responsible, but should not be required to pay exorbitant penalties that have no basis in system impacts. The costs are a function of system marginal cost at the time of the schedule deviation. We agree with the NOPR's definition of incremental cost from Consumers Energy Co: "Incremental costs are defined as the transmission provider's actual average hourly cost of the last 10 MW dispatched to supply the transmission provider's native load, based on the replacement cost of fuel, unit heat rates, start-up costs, incremental operation and maintenance costs, and purchased and interchange power costs and taxes." Consumers Energy Co., 87 FERC ¶ 61,170 at 61,679

(1999). It is important to use data that are already available and that cannot be gamed. A trustworthy data source would be system lambda which is calculated for other purposes and which does not have a different value for incremental and decremental cost that can be gamed.

The charges provide incentives discouraging both negative and positive imbalances. Negative imbalances result in payments from the wind generator at 110 percent of the transmission provider's system marginal cost, which is above the wind generator's operating cost and likely above the market price of energy. Negative imbalances result in payments at only 90 percent of the system marginal cost which is a poor price compared to what could be received with accurate scheduling. The charges appear symmetric, in that they do not tend to encourage either over-scheduling or under-scheduling.

k. The existence of alternatives should not delay speedy implementation of the NOPR

The Commission mentioned alternative remedies: (a) matching up intermittent resources scheduling with the scheduling of non-intermittent resources that could act as a back up; (b) netting arrangements; (c) settling arrangements; (d) trading arrangements; (e) aggregation of balancing responsibility among wind developments; (f) assignment or hedging of imbalance risks; and (g) dynamic scheduling.

AWEA supports the development of any alternative that removes the current barriers to entry for non-dispatchable resources. Monthly deviation netting and settlement, as embedded in the CAISO's PIRP program are clear examples in which the issues of discrimination have been addressed. In particular, AWEA and the financial community see substantial value in settling monthly net deviations at a single, monthly price.

AWEA believes that a guiding principle for FERC's decision-making should be that the adopted solutions reasonably reflect the operation of the control area. In particular, control areas

balance the system by dispatching generation up or down based on the aggregate of supply and demand, not by individual deviations from individual units. With this principle in mind, solutions that “match” dispatchable and non-dispatchable resources should be considered with due caution. Indeed, since the deviations of wind generally have little correlation to aggregate control area imbalances, dispatching a unit to match wind deviations, in isolation, is as likely to exacerbate the control area imbalance as it is to resolve it.

However, solutions that aggregate wind generation deviations from different sources, while administratively complicated, are completely consistent with the operation of a control area and should be seriously considered.³

Finally, dynamic scheduling may be an appropriate first step where the host control area is either too small, or otherwise unable to accommodate the output of a non-dispatchable resource. However since dynamic scheduling simply moves the accounting and monitoring of a facility between control areas, it does not address the discriminatory barriers to entry associated with imbalances identified by the Commission.

While these alternatives have merit, we believe the proposed rule is an effective remedy to the identified problems and should be adopted as proposed.

I. The 2 MW minimum deviation for small generators is necessary

Small wind generators have similar interests in finding alternative customers to the local utility as do large generators. Imbalance penalties serve as a barrier to small wind. We appreciate the Commission’s proposal to adopt a 2 MW minimum bandwidth deviation. As an example of the need for this provision, one of AWEA’s members, Deere and Company, invests in small generator facilities with farmer participation and they are concerned with the need to provide forecasts to the system operator when there is no one operating the turbine, let alone

³ <http://www.nrel.gov/docs/fy03osti/34318.pdf>

converting weather forecasts into wind output forecasts. The 2 MW minimum bandwidth deviation alleviates the burden somewhat.

m. The definition of intermittent resources is appropriate

The rule should apply on a non-discriminatory basis to any resource which meets the intermittent resource definition. Wind is not the only resource that would qualify. The NOPR defines intermittent resources as follows: “an intermittent resource is an electric generator that is not dispatchable and cannot store its fuel source and therefore cannot respond to changes in system demand or respond to transmission security constraints.”⁴

We agree with the suggestion in paragraph 11 of the NOPR that run-of-river hydro and solar energy have similar scheduling characteristics. Any resource that meets this definition should be eligible for this treatment.

AWEA would not oppose modifying this definition. It might be easier to simply use the term “non-dispatchable resources,” rather than “intermittent resources.” AWEA uses the term “variable” rather than “intermittent” because intermittent implies on or off, while variable suggests more accurately that output moves up and down gradually over time and output is usually somewhere in the middle between zero and nameplate capacity. To be extremely precise, we note that “non-dispatchable” is not completely accurate either because newer wind turbines have some limited capability to reduce output in response to dispatch instructions. An alternative term may be “weather-driven” resources and that could be defined as having limited storage and limited ability to respond to dispatch instructions. We expect that run-of-river hydro and solar energy would also fit such a definition.

⁴ NOPR, footnote 1.

n. AWEA commits to work with utilities to address any reliability concerns

AWEA and EEI have met to discuss a variety of issues related to wind integration. We have specific plans to discuss wind forecasting. We are open to using whatever forum transmission providers, reliability authorities, and regulators wish to use.

AWEA recognizes that imbalances between the day-ahead schedule and real-time can cause inefficient unit commitment. These costs are typically put back on wind generators in the contract negotiation for Purchase Power Agreements. AWEA would offer to commit to providing day ahead advisory schedules if transmission providers find that to be useful to preserve reliability and reduce unit commitment costs.

o. Exceptions to the rule should be allowed in limited cases

The NOPR provides for exceptions to the rule for independent entities, to comply with regional reliability rules, or for tariffs that are consistent with or superior to the proposal. We are not aware of regional reliability rules that would govern the pricing of imbalance so we do not see a need for that exception. We also do not support the independent entity exception because while generally ISO/RTO tariffs are far superior to the pro forma OATT from Order No. 888, that is not true in all cases. SPP for example has small control areas and no spot energy markets, and is discussing an imbalance tariff proposal that might be more stringent than this proposal. AWEA thinks SPP and other RTO/ISOs should either comply with this proposal or demonstrate why their proposal is consistent with or superior to it.

p. The administration should follow the normal tariff implementation

The NOPR asks, “Accordingly, the Commission is soliciting comments on how best to implement this new generator imbalance service schedule. Specifically, should the transmission provider collect generator imbalance charges from the transmission customer with the transmission customer recovering these charges through a separate agreement with the generator,

or should the transmission provider collect generator imbalance charges from the generator pursuant to an arrangement in its interconnection agreement pursuant to Order No. 2003-B? If the transmission provider collects payment from the generator, how should the pro forma agreement between the transmission provider and the generator be structured?” (NOPR at p. 43). AWEA believes the charges should be collected by the transmission provider from the transmission customer, as with other tariff services.

q. The proposed rule should be applied to interconnection agreement provisions

At p. 2 of the NOPR, the Commission suggests that the new rule on generator imbalances will not supersede existing provisions on these imbalances in existing interconnection agreements. Furthermore, the Commission also seeks comment regarding whether the new rule should apply prospectively to transmission providers that incorporate generator imbalance provisions in future interconnection agreements:

Moreover, in recognition that some transmission providers assess generator imbalance charges through interconnection agreements rather than OATT provisions, we are soliciting comment on whether to require that, prospectively, any generator imbalance provisions in future interconnection agreements with intermittent generators conform to the provisions in Schedule XYZ. (NOPR at p. 33).

AWEA supports application of the rule to all generator imbalance provisions applicable to intermittent resources regardless of whether they are set forth in an OATT or in an interconnection agreement. It makes no sense to mandate a national rule and then allow a transmission provider to escape it by imposing generator imbalance penalties in an interconnection agreement rather than a tariff. The monopoly power of the transmission provider applies equally to interconnection agreements and to tariffs for transmission service. The issue of generator imbalances and the economic impact of non-cost based penalties on intermittent resources is also not changed by the vehicle used to impose such penalties. AWEA urges the

Commission to close this obvious loophole in enforcement of its proposed rule by requiring that generator imbalance provisions in future interconnection agreements with intermittent generators conform to the provisions in Schedule XYZ.

The foregoing, of course, assumes that the Commission will continue to allow generator imbalance provisions to be included in interconnection agreements rather than in open-access tariffs. That is not AWEA's preference. As we have stated previously in the context of interconnection rules, AWEA believes that scheduling and imbalances are a delivery issue, not an interconnection issue. As such, this issue does not properly belong in interconnection agreements. The potential loophole discussed immediately above and the confusion regarding imbalance penalties (discussed earlier in these comments) are in part attributable to this issue being addressed in both tariffs and interconnection agreements. AWEA urges the Commission to make clear that in the future generator imbalance provisions should be included in transmission tariffs and not in interconnection agreements. Moreover, the confusion in the marketplace regarding imbalance penalties is itself an important reason for the Commission to take action as proposed in the NOPR.

III. CONCLUSION

AWEA strongly supports the proposed rule set forth in the NOPR and urges the Commission to adopt it (with minor clarifications described above) without delay. The Commission has correctly identified a practice that is not just and reasonable and which is currently a significant barrier to market entry for intermittent resources. AWEA appreciates the

Commission's recognition of this problem and believes that the proposed rule will provide an appropriate, timely and fair remedy.

Dated: March 26, 2005

Respectfully submitted,

By: _____

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CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon each party designated on the official service list in this proceeding.

Dated at Sacramento, California, this 26th day of May, 2005.

Ron O'Connor