

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

Integrating Renewable Resources : **Docket No. AD09-4-000**
Into the Wholesale Electric Grid :

**STATEMENT OF MICHAEL J. KORMOS TO SUPPORT ORAL TESTIMONY
PRESENTED AT THE MARCH 2, 2009 TECHNICAL CONFERENCE
BEFORE THE FEDERAL ENERGY REGULATORY COMMISSION**

I. INTRODUCTION

As Senior Vice President of Operations for PJM Interconnection, L.L.C. (“PJM”), I appreciate the opportunity to provide this statement in order to identify the key policy issues associated with planning for the integration of renewable resources into the wholesale electric grid. This statement is submitted to supplement my oral testimony that I will provide at the March 2, 2009 technical conference to be held before the Commission in the captioned docket.¹

This technical conference is both timely and appropriate. There is clearly an increased focus, both in Washington, D.C., and at the state level, on the critical role that transmission infrastructure will play in realizing public policy objectives such as energy independence and mitigation of the impact of climate change. Realization of such objectives will require addressing the fundamental policy question of how much and where should transmission be built

¹ See Integrating Renewable Resources Into the Wholesale Electric Grid, Notice of Technical Conference, Docket No. AD09-4-000 (Feb. 5, 2009).

and how should the costs be recovered? PJM believes that guidance from this Commission is essential to addressing whether current transmission planning protocols (as embodied in various tariff provisions) and cost allocation methodologies should be reassessed to include a new set of transmission projects, i.e., those not justified under traditional reliability and economic benefit planning protocols but which are associated with aggressive large scale integration of renewable energy resources. Whether or not legislation is passed by Congress on these issues, we believe that this Commission, and the dialogue begun here today, can play an important role in identifying such issues in a way which is far more constructive than mere case-by-case adjudications of individual projects or asking the Congress to decide these issues in a vacuum.

At least two recent filings have been submitted to the Commission for pre-approval of incentives associated with new, very large transmission overlay projects tied specifically to the integration of renewable resources.² Such filings claim that large overlay projects do not fit neatly within the current Commission-approved regional and joint inter-regional planning processes. As a result, there is a concern that current planning processes cannot properly evaluate the widespread public policy benefits to be derived from such backbone transmission overlay projects using the current reliability and economic planning metrics approved by the Commission under Order No. 890³ and Order No. 679⁴.

² See Green Power Express, LP, Docket No. ER09-681-000 (Feb. 9, 2009); see also, Pioneer Transmission, LLC, Docket No. ER09-75-000 (Oct. 15, 2008) (both filings have sought incentive and formula rate treatment in section 205 filings prior to being incorporated into Commission-approved regional transmission planning processes).

³ Preventing Undue Discrimination and Preference in Transmission Service, Order No. 890, 72 Fed. Reg. 12,266 (Mar. 15, 2007), FERC Stats. & Regs. ¶ 31,241 (“Order No. 890”), order on reh’g, Order No. 890-A, 73 Fed. Reg. 2984 (Jan. 16, 2008), FERC Stats. & Regs. ¶ 31,261 (2007) (“Order No. 890-A”), order on reh’g, Order No. 890-B, 123 FERC ¶ 61,299 (2008) (“Order No. 890-B”).

⁴ Promoting Transmission Investment through Pricing Reform, Order No. 679, FERC Stats. & Regs. ¶ 31,222 (“Order No. 679”), order on reh’g, Order No. 679-A, FERC Stats. & Regs. ¶ 31,236 (2006), order on reh’g, 119 FERC ¶ 61,062 (2007) (“Order No. 679-A”).

I do not intend to address the merits of these projects or their respective requests for incentives in my statement. In fact, I believe that case-by-case adjudication of these issues may mask the larger issues that we believe need further discussion.

II. EXECUTIVE SUMMARY

PJM's current Commission-approved regional planning metrics identify which projects are selected to be built based on system needs, such as load growth or generation interconnection, as opposed to a "build it and they will come" approach. PJM submits that further guidance from the Commission is needed if the Commission seeks to expand the current Commission-approved regional planning protocols and cost allocation methodologies in order to pursue more aggressive integration of renewables. And, if that is the goal, the regional transmission organization ("RTO"), in coordination with its neighboring systems, is the answer, as opposed to the creation of a new interconnection-wide system planning entity. A new interconnection-wide planning entity would still have to face the same questions, same issues and same challenges currently before this Commission and the RTOs today – with one exception: RTOs have an existing regional planning process that provides independence, technical expertise and a proven track record.

Order No. 890 provides for inter-regional coordination within the interconnection, and we have taken aggressive steps in that realm through our coordination with the Midwest Independent System Operator ("Midwest ISO") and Tennessee Valley Authority ("TVA"), and other neighboring systems, under joint agreements. RTOs, such as PJM, can perform the analysis and screen projects so long as the assumptions and criteria are clearly identified. In fact, the difficulties we have experienced working with neighboring systems have centered mostly

around having to recognize distinct and different planning assumptions, criteria and cost allocation methodologies.

In this statement, I intend to address the following issues:

- The important role the existing FERC-approved planning processes play today in the integration of renewable resources on to the grid;
- Whether a third set of metrics (in addition to the reliability and economic congestion driven metrics already embodied in PJM’s planning processes) is needed if the Commission’s goal is to drive aggressive integration of renewable resources based on public policy benefits; and
- The policy issues (including policy trade-offs) associated with any expansion of the current planning process to embrace planning protocols and cost allocation methodologies targeted to the aggressive deployment of new renewable resources on to the grid.⁵

III. BACKGROUND.

a. PJM’s Planning Process

PJM’s current Commission-approved planning process is a proven means to identify and analyze projects.⁶ Such regional transmission expansion planning (“RTEP”) process provides PJM with the criteria necessary to identify those projects that will provide reliability and economic benefits to customers and allow for the interconnection of new resources. More than

⁵ These comments are limited to the first panel’s discussion on transmission planning. PJM recognizes that there a host of other issues related to system operations and markets that are also being discussed on other panels at this technical conference. PJM looks forward to hearing those panel discussions and will, if permitted, submit post-technical conference comments on those issues.

⁶ PJM’s regional transmission expansion planning (“RTEP”) process and PJM’s role in transmission planning are set forth in Schedule 6 of the PJM Amended and Restated Operating Agreement.

\$13.2 billion of transmission upgrades and additions, representing over 1,400 distinct transmission projects ranging from 69 kV to 765 kV, have been authorized by the PJM Board from the inception of the RTEP process in 1999 through December 2008. About \$11.3 billion of baseline transmission network upgrades across PJM are designed to ensure that NERC Reliability Standards will continue to be met. At the same time, \$1.9 billion of additional transmission upgrades will enable the interconnection of more than 45,000 MW of new generating resources and merchant transmission projects. With regard to wind in particular, PJM has processed or studied close to 60,000 MW of wind, with currently 43,100 megawatts (MWs) of wind projects active in the study phase of the PJM interconnection queue. In addition, 2,231 MW of wind is in service or partially in service while another 1,592 MW of wind generation is under construction

The explicit goals of the planning process are set forth in various Commission directives and center on ensuring a grid that is both reliable (defined as meeting the NERC Reliability Standards) and economically efficient by identifying where to locate projects that will reduce uneconomic congestion. As described in more detail below, from a policy perspective, PJM proposes that enhancements are needed to the current Commission-approved regional and inter-regional transmission planning protocols and cost allocation methodologies if the Commission's goal is aggressive integration of new renewable resources. We also believe that identification of the assumptions upon which we are to plan the system need to be identified on a generic policy basis by the Commission before the details can be addressed in individual RTO planning processes. The policy issues and the dollars involved are simply too large for handling this issue on a piecemeal, case-by-case basis. In short, rather than countenancing a "race to the courthouse" for a host of "could be" conflicting individual projects, we need to ensure that the

planning criteria for evaluation of large scale projects, as well as the cost allocation principles that govern them are identified so all developers have an equal opportunity to craft meaningful projects that meet a clear set of policy goals and planning assumptions.

Accordingly, PJM recommends that the Commission initiate a rulemaking to consider these large generic issues. Additional enhancements to the planning criteria should be arrived at through careful consideration of the policy benefits and detriments of a given approach and are best accomplished through such generic rulemaking process as opposed to individual case adjudication or individual stakeholder processes.

b. Statutory and Regulatory Criteria Governing Planning.

Under the Energy Policy Act of 2005 (“EPAAct2005”),⁷ the Commission was directed to facilitate the planning and expansion of reliable and economically efficient transmission facilities to meet the reasonable needs of the load-serving entities.⁸ EPAAct2005 also conferred upon the Department of Energy authority to designate national interest electric transmission corridors (“NIETC”) based on a study that identifies electric transmission congestion that adversely affects consumers.⁹

The Order No. 890 nine planning principles provided clear direction to transmission providers that their respective transmission planning processes must encompass both a reliability process (to maintain the reliability of the transmission system), as well as an economic process (to reduce costs of serving native load). Order No. 890 did not, however, authorize transmission providers to add, as additional criteria over and above economic congestion relief and reliability planning, specifically focused large scale integration of new renewable resources such as wind.

⁷ The Energy Policy Act of 2005, Pub. L. 109-3, 119 Stat. 594 (2005).

⁸ See EPAAct2005 at § 1223(a) creates a new Section 217 in the Federal Power Act.

⁹ See EPAAct 2005 at § 1221; Federal Power Act at § 216(a).

Consequently, the current Commission-approved planning processes do not authorize transmission providers to direct the building of policy driven projects whose economical benefits are not quantifiable under the current metrics. Order No. 679 was another important step forward in acknowledging the need for new transmission infrastructure both to ensure the reliability of the transmission system and relieve congestion.¹⁰

Based on its Commission-approved RTEP process, PJM plans for reliability in accordance with NERC Reliability Standards. PJM also administers a generator interconnection queue which identifies upgrades and assigns cost responsibility to generators based on a “but for” analysis.¹¹ Requiring interconnection customers to pay for such “but for” costs has resulted in generators strategically placing projects in locations that both minimize project costs and, most importantly, maximize system efficiencies. This “beneficiary pays” paradigm also worked to avoid captive customers having to subsidize the costs of upgrades for such market participants, *i.e.*, generators, who would otherwise realize competitive returns on their projects. Finally, PJM’s economic planning process identifies economic upgrades and market solutions to relieve congestion for native load taking into account all available alternatives. In compliance with the Commission’s directives requiring tariff specificity, PJM’s planning for economic transmission expansions applies a “bright-line formula” over a 15 year planning horizon using a 70/30 present value metric that calculates the anticipated annual benefits of a proposed project using the production-cost savings and load payments as a reasonable basis upon which to select which specific economic transmission projects are included in the RTEP. The Commission

¹⁰ Order No. 679 at P1.

¹¹ Under PJM Tariff section 217.3, a New Service Customer is required to pay for all of the costs of the minimum amount of Local Upgrades and Network Upgrades that are necessary to accommodate its New Service Request and that would not have been incurred “but for” such New Service Request. The costs shall be net of any benefits resulting from the construction of the upgrades (such costs not to be less than zero).

found this approach to be reasonable as the production cost savings measure the economic benefits of the project while the load payments measure the extent to which the project will reduce prices to load. If the production cost savings of the project exceeds the cost of the project, the project is found to produce overall benefits to the market.¹²

Using the current Commission-approved reliability and economic metrics and cost allocation processes, PJM makes recommendations to the PJM Board, based on stakeholder input, which transmission projects should be reviewed and approved by the Board. Once approved, such projects are included in PJM's RTEP. The Board's approval of a project is authorization, under the PJM Operating Agreement, for the costs of the project to be allocated to all PJM members in accordance with the particular cost allocation methodology governing each particular project (e.g., full socialization for 500 kV and above facilities and allocation based on the distribution factor analysis ("DFAX") for below 500 kV facilities). This does not mean that other projects cannot be proposed and built in the PJM footprint. In fact, our existing tariff expressly contemplates transmission owner initiated projects which would be included in the plan as well. The key difference is that the Board's approval of a project represents its collective judgment that such RTEP projects provide reliability or economic benefits to customers that justify the allocation of the project's costs to wholesale users of the transmission grid. A transmission owner initiated project (i.e., merchant developer) can certainly build a project without requiring such Board approval, but such developer does so without the automatic cost allocation features provided for under the PJM Operating Agreement.

¹² PJM Interconnection, L.L.C., 126 FERC ¶ 61,152 (Feb. 20, 2009); PJM Interconnection, L.L.C., 123 FERC ¶ 61,051 (Apr. 17, 2008); PJM Interconnection, L.L.C., 119 FERC ¶ 61,265 (June 11, 2007); PJM Interconnection, L.L.C., 117 FERC ¶ 61,218 (Nov. 21, 2006).

PJM also coordinates its planning process with neighboring systems and participates in inter-regional planning under contractual arrangements.¹³ For example, PJM and the Midwest ISO are signatories to a Joint Operating Agreement (“JOA”). The JOA has extensive provisions regarding the coordination of regional transmission expansion planning, including preparation of a Coordinated System Plan (“Plan”).¹⁴ The goal of the Plan is to maintain reliability, improve operational performance and enhance the competitiveness of electricity markets.

On January 28, 2009, the Midwest ISO and PJM jointly submitted a section 205 filing in compliance with the Commission’s November 21, 2005 order¹⁵ conditionally accepting the RTOs’ cross border reliability projects and directing the RTOs to file, among other things, a proposal to address economic cross border projects and to allocate costs for cross-border facilities. The reliability and economic planning protocols, as well as cost allocation methodologies, are consistent with each RTO’s Commission-approved planning processes. As appropriately noted in the RTOs’ economic cross border filing, the type of cross border market efficiency projects selected under the cross border economic planning proposal are not likely to include projects that “serve purposes beyond the relief of congestion necessary to improve the efficient operation of the two markets . . . [or] go beyond readily quantifiable economic benefits suitable to improve market efficiency.”¹⁶

¹³ PJM has entered into such inter-regional planning contractual arrangements with the Midwest Independent Transmission System Operator, Inc. (the “Midwest ISO”), the New England Independent System Operator (“ISO New England”), the New York Independent System Operator (“New York ISO”), the Tennessee Valley Authority (“TVA”) and Progress Energy Carolina (“PEC”). Each of these arrangements includes cross-border planning coordination requirements.

¹⁴ See JOA, Article 9.

¹⁵ Midwest Independent Transmission System Operator, Inc., et al., 113 FERC ¶61,194 (2005) (“November 21, 2005 Order”).

¹⁶ Midwest Independent Transmission System Operator, Inc., et al., Docket Nos. ER05-6-108 et al., 6 (January 28, 2009) (MISO/PJM Economic Cross Border Compliance Filing).

c. PJM is Collaborating with Its Neighbors in Identifying Renewable Integration Options.

PJM is also participating in the Joint Coordinated System Plan 2008 (JCSP'08) in the development of a conceptual regional transmission and generation system plan for a large portion of the Eastern Interconnection. The JCSP'08 is the first inter-regional planning collaborative effort to involve most of the major transmission operators in the Eastern Interconnection.

The initial analysis looked at two scenarios to evaluate transmission and generation possibilities between 2008 and 2024. The initial analysis establishes that backbone transmission overlays may provide significant economic value by reducing grid congestion and facilitating new renewable resource development within the context of the scenarios evaluated. However, more scenarios and analyses must be performed before we can move from planning -- to project selection – to implementation. For example, the need for the development of large amounts of wind in the Midwest and carbon emission restrictions could result in the potential retirement of other units thus doing away with some of the need for the transmission overlay if the existing system can be better utilized. Likewise, off-shore wind on the eastern seaboard and hydro energy from Canada, and greater strides in energy efficiency, may be deliverable to customers in New England, New York and New Jersey sooner and more cost-effectively than the Midwest wind resources. Without the third set of metrics (criteria, assumptions and cost methodologies) in place, we will not be able to select a single set of transmission projects as a solution from a policy perspective.

While the JCSP represents a good example of our ability to collaborate and to coordinate large scale analysis studies over the Eastern Interconnection, it is also a good example of the

magnitude of the number of variables to be considered and questions left unanswered without a clear set of assumptions and criteria and direction on cost methodology that define the need.¹⁷

d. The Role of the Commission in Fostering Transmission Expansion.

In the notice of this Technical Conference the Commission recognizes that significant additions of variable renewable resources, such as wind, could create challenges for the grid and market operators. If the Commission determines that Order No. 890 planning protocols and cost allocation methodologies should be expanded in order to provide for projects that promote public policy benefits, a rulemaking may best serve as the solution to timely meet this challenge head on.

e. Threshold Issues.

This is not the first time that the Commission has considered these issues. In testimony PJM presented before the Commission on April 22, 2005, PJM raised the issue as to the need for the industry and regulators to reach consensus on the threshold questions “how should we structure the grid.”¹⁸ The choices are either (i) a “regional” grid that connects distant resources to load centers or (ii) a “localized” grid that embraces a model of distributed generation close to load.¹⁹ Of course, the grid we plan for will be very different depending on which model we choose. In addition, the ISO/RTO Council raised this similar issue in its White Paper on interconnection queue procedures filed in Docket No. Docket No. AD08-2-000.²⁰

¹⁷ PJM and Midwest ISO also held the Southwestern Indiana Transmission Study Kick-off meeting under the MISO/PJM Inter-Regional Planning Stakeholder Advisory Committee (IPSAC) to study integration of large amounts of variable renewable energy.

¹⁸ See Transmission Independence and Investment Pricing Policy for Efficient Operation and Expansion of the Transmission Grid, Docket No, AD05-5-000, et al., Technical Conference and Agenda (Apr. 14, 2005).

¹⁹ See Transmission Independence and Investment Pricing Policy for Efficient Operation and Expansion of the Transmission Grid, Executive Summary Testimony of Audrey Zibelman, Executive Vice President, PJM Interconnection, L.L.C. at 5, Docket No, AD05-5-000, et al., (Apr.21, 2005).

²⁰ Interconnection Queuing Practices, et al., Comments of the ISO/RTO Council, Docket Nos. AD08-2-000, et al., (Jan. 10, 2008).

Subsequent to that initial submittal to the Commission, there has been far greater interest in developing transmission to integrate renewable resources distant from load centers. In that vein, PJM proposes the following issues which deserve further consideration:

- ***Issue One: How Do We Weigh Various, Sometimes Conflicting, Public Policy Goals?***

In addition to reliability and economic efficiency, should we formally include integration of renewable resources from distance resources into the planning process? If so, should the goal of renewable integration be treated as a co-equal, or even superior to, the goals of (i) reducing congestion on the transmission system or (ii) even building out the grid to solve identified reliability violations?

As noted above, PJM plans the transmission system to meet future reliability criteria, as well as to identify opportunities where transmission can help to reduce congestion. There are many other public policy goals that could be considered in the planning process, such as (i) aggressive deployment of demand side management prior to approval of new facilities to address congestion, (ii) ensuring that the transmission system is designed to support behind the meter distributed generation, or (iii) designing a grid that reduces the carbon footprint of generation. In many instances, these public policy goals could be in conflict with one another in planning the transmission system.²¹ Accordingly, if we are to integrate renewable resources into the planning process, we must determine how this public policy planning criteria fits with other public policy benefits, such as promotion of demand side management or behind the meter distributed generation as an alternative to

²¹ PJM continues to work with a number of states on their respective energy master plans. Based on our experiences, the states are committed to continue to develop and make better use of existing resources, such as demand response, energy efficiency, combined heat and power, and distributed generation.

building long transmission lines. Although each is important and already considered to varying degrees in the planning process, specific guidance on sequencing, and prioritization, of these various goals is needed. There is only so much capital available for investment in construction of new transmission infrastructure. We will need to provide well-defined criteria that clearly identifies where the public policy goal of integrating renewable resources fits in with other goals.

- ***Issue Two: How to Best Harmonize Renewable Integration with the Current “Beneficiary Pays” Approach to Generator Interconnection.***

The current generator interconnection paradigm is based upon the concept of identifying and allocating the costs of projects needed to support a project’s interconnection to the queue. Under the current generation interconnection process, the interconnection customer pays for the costs of upgrades it causes. The upgrades are sized to meet the project’s needs as opposed to sized for speculative future generation projects that may later seek interconnection but are not yet in the queue or committed through an interconnection service agreement (“ISA”). Once an interconnection customer executes an ISA, the generation project is modeled in all RTEP studies, beginning in the year in which it is expected to be in service, in the same manner as an existing in-service generator. Should we change the paradigm and build the transmission system out to remote areas to support future, undefined renewable projects that will be built only if the system is developed first?

- *Issue Three: How Do We Ensure Consistency and Clarity in Cost Allocation Policies?*

Should the Commission seek aggressive integration of new renewable resources? Such a goal will need to be harmonized with the existing patchwork of cost allocation methodologies across the country. Today, PJM itself has three different cost allocation methodologies: (i) an assignment of costs to new interconnecting generators for the costs of system upgrades that were only needed as a result of the specific interconnection request; (ii) socialization of costs for backbone transmission facilities developed pursuant to the existing RTEP criteria; and (iii) for projects below 500 kV, an assignment of costs based on contribution to the need based on DFAX. Of course, large scale backbone projects often span more than one RTO or control area. Thus, on large scale backbone projects, PJM's three methodologies are multiplied by each control area that is crossed, resulting in a geometric increase in the number of cost allocation policies to be reconciled. Some wind generators argue that the present method requiring interconnecting generators to pay for costs of system upgrades may render their projects uneconomical. Others argue that forcing other generators to front the costs of transmission upgrades, but not providing similar requirements of wind resources, is discriminatory and would force customers to choose the costs of one developer's business plan over others. We will need to reconcile the present interconnection cost allocation

rules from Order 661²² with the new policy goal should we wish to aggressively promote wind integration.

By the same token, resources such as wind are often remotely located from load and can span multiple RTOs. The cost allocation methods among RTOs are not necessarily harmonized. The present cost allocation protocols between PJM and MISO require a sharing of benefits among the RTOs before projects are authorized.

All of these dichotomies, spanning across regions, among differing FERC rules will need to be reconciled before aggressive wind integration can occur in the regions. Given the Commission-approved intra-RTO planning protocols and cost allocation methodologies, and the inter-RTO nature of these issues, an approach that simply allows for different resolutions within RTOs based on “regional differences” for projects driven by national public policy goals will only work to frustrate rather than smooth over the development of wind resources.

IV. CONCLUSION

I have tried to outline some of the “big picture” policy issues that we must tackle if the goal is to seek more effective integration of large amounts of wind resources into the grid. Based on the above, we propose that the Commission initiate a rulemaking to evaluate whether current transmission protocols and cost allocation methodologies should be reassessed to include transmission projects such as those associated with the large scale of integration of renewable and other energy resources.

²² Interconnection for Wind Energy, 111 FERC ¶ 61,353 (Jun 2, 2005) (“Order No. 661”), order on reh’g, 113 FERC ¶ 61,254 (Dec. 12, 2005) (“Order No. 661-A”).

Thank you for allowing me the opportunity, on behalf of PJM, to participate in the Commission's technical conference and provide these supporting comments on this very important issue.

Dated February 24, 2009

Respectfully submitted,



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