



Planning vs. Partiality

A case study from PJM on competitive procurement
of regional transmission under FERC Order 1000.

BY JOHN DALTON



In Order No. 1000, issued in 2011, the Federal Energy Regulatory Commission (FERC) directed regional transmission organizations (RTOs) to remove rights of first refusal (ROFRs) from their federally approved tariffs governing construction of new grid facilities that would qualify for regional cost allocation as part of a regional transmission plan.¹ One of the first competitive processes to implement this requirement was a “proposal window” issued by the PJM Interconnection seeking project proposals to address planning criteria violations for a discrete network of 500-kV transmission lines located in an area of New Jersey known as the “Artificial Island.” The experience from this process offers valuable lessons for all regional transmission organizations (RTOs) and transmission owners as they work to comply with FERC’s order and to realize the potential benefits offered by the competitive procurement of transmission.

FERC’s Rationale

Competitive procurement processes have been employed successfully for electricity generation projects for decades.² Recently, competitive procurement processes for transmission facilities have received increased attention and been employed successfully.

Brazil was an early adopter of a competitive procurement process for high-voltage transmission facilities, employing such a process since 1999 for about 50,000 km of new transmission facilities. ERCOT used a mild form of competitive procurement (*i.e.*, limited competitive tension) for selecting transmission projects through its Competitive Renewable Energy Zones process, enabling the integration of about 18,000 MW of additional wind generation. The U.K. has used competitive procurement for its offshore wind transmission facilities, the first phase of which is estimated to provide savings to customers between \$300 and \$600 million. Ontario has employed a competitive process to select the developer of a major new transmission project. Finally, in response to regulations issued in 2010, the Alberta Electric System Operator is administering a competitive procurement process for a 500-kV transmission facility.

Against this backdrop, in July 2011 FERC issued Order No. 1000. Amongst other things the order directed jurisdictional

The problem is how to ensure transparency while allowing planners to impart their judgment and experience.

transmission facility owners and RTOs to remove from federal tariffs any rights of first refusal favoring incumbent transmission owners for the construction of transmission facilities made part of a regional transmission plan and held eligible for regional cost allocation.³ As the commission had explained, a right of first refusal can create a barrier to entry that discourages non-incumbent transmission owners from proposing alternatives. Therefore, these reforms were thought necessary to “eliminate practices that have the potential to undermine the identification and evaluation of more efficient or cost-effective alternatives to regional transmission needs.”⁴

The commission also directed transmission owners to develop qualification criteria that would provide potential transmission developers the opportunity to demonstrate that they possessed the necessary financial resources and technical expertise to develop, construct, own, operate and maintain such facilities.

In terms of the process for evaluating proposals, FERC was deliberately vague and left discretion to the transmission owners and RTOs. The commission required a “transparent process” and suggested that transparency can be measured by whether stakeholders can “understand why a particular transmission project was selected or not selected.”⁵ FERC made clear, however, that transmission providers “may, but are not required to, use competitive solicitations to solicit projects.”⁶

Policies at Eastern RTOs

Not surprisingly, the responses of the RTOs were varied, given differences in the regional transmission planning processes

1. *Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities*, Order No. 1000, 76 FR 49842 (Aug. 11, 2011), FERC Stats. & Regs. ¶ 31,323 (2011), *order on reh’g*, Order No. 1000-A, 139 FERC ¶ 61,132 (2012), *order on reh’g and clarification*, Order No. 1000-B, 141 FERC ¶ 61,044 (2012).
2. California, Maine, Massachusetts and other states employed auctions in the 1980s to determine which eligible projects should be awarded contracts under the Public Utility Regulatory Policies Act.

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3. Incumbent transmission owners are defined as the transmission owner that proposes a project within its existing retail distribution service territory.
4. Order No. 1000, para. 226.
5. *Ibid.*, para. 328.
6. *Ibid.*, para. 259.

where these reforms had to be made. The major elements of the protocols adopted by ISO-New England (ISO-NE), New York ISO (NYISO) and PJM are illustrated in Table 1.

As shown in the Table, each of the Eastern RTOs has chosen to rely on competitive processes with largely similar selection criteria. Not surprisingly, an important consideration is the acquisition and access to rights of way. This points to a tension in such processes. On one hand, incumbents have natural advantages, which represent significant value and should be recognized. Yet if the playing field is viewed as not sufficiently level, then non-incumbents ultimately will elect not to participate, frustrating the realization of these benefits.

RTOs have extensive experience with the development and administration of competitive processes for a range of electricity products. However, these products are effectively commodities, where the selection criterion – price – is simple to evaluate.⁷ Procuring transmission is more complex. It requires consideration of relatively subjective criteria, such as “constructability,” or what may appear to be objective, such as the project schedule, which needs to be critically assessed to ensure its reasonableness. Such competitive processes pose distinct challenges, including how to ensure transparency in the evaluation process while providing appropriate opportunities for the exercise of professional judgment, given that proposal selection cannot always be boiled down to a formula that minimizes the application of professional judgment.

These challenges are well illustrated by a case study of PJM’s procurement process for the Artificial Island area, which highlights the tension between ensuring a transparent process that engenders stakeholder confidence, while providing opportunities to those evaluating proposals to exercise an appropriate measure of professional judgment so that the best proposals are able to surface.

The PJM Case

One of the first applications of this new process under FERC Order 1000 occurred in PJM, which in 2013 had issued a “Problem Statement & Requirements Document” (PSRD) that had sought “technical solutions” to address planning criteria violations in the Artificial Island area in New Jersey.⁸ Proposals or solutions were required 60 days later. As outlined in its Regional Transmission Expansion Planning Protocol (RTEPP), which guides transmission planning in PJM, the PJM staff would evaluate proposals, compare their expected performance, and

determine the best proposal among those submitted. If none of the proposals resolved the violation, PJM could reopen the process or develop an appropriate solution and designate the incumbent transmission owner to build it.

In their individual proposals, proponents were required to: (1) describe the proposed solution; (2) provide a detailed report analyzing the solution; (3) provide technical information, including power flow analyses; and (4) provide a high-level estimate of the time to construct the proposed solution, cost estimates including assumptions, and the availability of rights of way.

While the PRSD didn’t specify the evaluation criteria that were to be used, these were outlined in PJM’s RTEPP. As indicated in Table 1, these included the extent to which the project would: (1) address the violations, system conditions or economic constraints; (2) exceed a benefits/cost ratio of at least 1.25:1 and (3) have secondary benefits such as addressing other system constraints, operational performance, economic efficiency issues or federal/state public policy requirements. In addition, consideration would be given to other factors including cost-effectiveness, the ability to timely complete the project, and project development feasibility.

In answer to its solicitation, PJM received 26 proposals from seven different proponents. These proposals offered a wide range of solutions, with costs ranging from about \$100 million to \$1.5 billion. From July 2013 through April 2014, PJM staff evaluated these 26 proposals – their promised performance, cost, and constructability. The cost comparison was performed based on PJM staff cost estimates, which used consistent assumptions rather than relying on proponent estimates. With cost recovery likely to be based on cost-of-service ratemaking and the traditional prudent investment test, the cost estimates for these proposals were not held to be binding. For this reason, and to ensure consistency in the evaluation process, PJM deemed it reasonable and appropriate to look to cost estimates prepared by its own staff.

Only two proposals passed the initial analytical screen, so PJM staff elected to modify proposals. Having only two proposals pass the initial screen is troubling and suggests that sufficient information wasn’t shared with proponents to allow them to prepare conforming proposals or that the professional judgment required to assess proposals makes it difficult for proponents to develop conforming proposals. In addition, possibly on account of the greater time allowed for proposal review relative to proposal development, and presumably because of a desire to ensure that the best alternatives were put forward, PJM staff elected to modify the proposals to enhance their electrical performance, reduce

Project selection cannot always be boiled down to a formula.

7. For products with multi-part offers, the evaluation process is clearly more complex.

8. Artificial Island consists of the 500 kV network that integrates the Salem #1 and #2 and Hope Creek Nuclear Generating Stations into the PJM transmission network.

TABLE 1

COMPETITIVE PROCUREMENT PROCESSES AT EASTERN RTOs

RTO	ISO-NE	NYISO	PJM
Competitive Process	Yes	Yes	Yes
Qualification Requirements	<ul style="list-style-type: none"> ■ Capabilities to finance and construct a transmission project and operate and maintain it for the project life ■ Financial resources ■ Technical and engineering qualifications ■ Experience constructing and maintaining transmission facilities ■ Demonstrated capability to construct, maintain and operate consistent with Good Utility Practice ■ Ability to comply with reliability standards ■ Ability to meet development and completion schedules 	<ul style="list-style-type: none"> ■ Technical & engineering experience in development, construction, operation and maintenance of transmission facilities ■ Current and expected capability to finance, develop and construct transmission facility and operate and maintain for life of the facility ■ Current and expected capability to finance or experience in arranging financing with supporting financial information (audited financial statements) 	<ul style="list-style-type: none"> ■ Technical and engineering qualifications ■ Demonstrated experience developing, constructing, maintaining and operating transmission facilities ■ Previous record regarding construction, maintenance or operation of transmission facilities ■ Capability to adhere to standardized construction, maintenance and operating practices ■ Financial statements ■ Evidence demonstrating the ability to address and timely remedy failure of facilities ■ Evidence of acquiring rights of way
Selection Criteria	<p>Project that offers the best combination of:</p> <ul style="list-style-type: none"> ■ Electrical performance ■ Cost ■ Future system expandability ■ Feasibility to meet the need in the required timeframe* 	<ul style="list-style-type: none"> ■ The capital cost estimate ■ The cost-per-MW ratio ■ Expandability of the solution and the impact on future construction ■ Operability ■ Performance ■ Extent the developer has property rights or ability to obtain property rights required 	<ul style="list-style-type: none"> ■ The extent the project would address and solve posted violations, system conditions or economic constraints ■ The extent to which the relative benefits of the project meets the Benefits/Cost Ratio Threshold of at least 1.25:1 ■ The extent to which the project would have secondary benefits such as addressing other system constraints, operational performance, economic efficiency issues or federal/state Public Policy Requirements ■ Other factors including cost-effectiveness, the ability to timely complete the project and project development feasibility

* While not an explicit element of the evaluation criteria, proponents are required to describe their authority to acquire rights of way (ROWs), experience acquiring ROWs and status of acquisition of ROWs.

costs, and increase constructability.⁹ The modifications made to a number of proposals were significant and included removing transmission lines. In particular, PJM removed a 500-kV transmission line from a proposal submitted by Public Service Electric and Gas Company (PSEG) – one of fourteen submitted

by PSEG – which had the effect of reducing its projected cost by about 78 percent. That caused the PSEG proposal to fall in among the most cost-effective proposals.

This action, as taken by the PJM staff, could be viewed as a violation of best practices for project evaluation, given that it threatened the integrity of the evaluation process and allowed proponents to question the judgments made and the impartiality of the evaluation process. Specifically, proponents might question what constitutes an appropriate modification and whether evaluations will “borrow” innovations from one proposal to enhance

9. One proponent asserted that the need for greater clarity in the problem statement and specific project requirements was “evident in that none of the 26 proposals hit the PJM target and met the need.” July 14, 2014 Letter of PHI and Exelon to PJM Board Chair and President and CEO.



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a competitor’s proposal. In defense of the PJM staff, however, transmission planning is an iterative process. It requires detailed knowledge of the transmission network and can require subjective judgments regarding the appropriate tradeoffs between operating performance and costs.

PJM staff recommended to the PJM Board the PSEG proposal – one that the PJM staff had modified. This modified PSEG proposal was for a 17-mile 500-kV line that would run from the Hope Creek to the Red Lion substations and would require a crossing over the Delaware River. PSEG’s modified proposal was similar to a proposal submitted by Virginia Electric Power Company (VEPCO). With the cost comparison based on PJM cost estimates that employed consistent assumptions, there were no cost difference between these two proposals. However, given its participation in the Lower Delaware Valley Transmission System Agreement (LDV), PSEG was able to use an existing right of way for about 50 percent of the transmission path, whereas VEPCO would need to acquire the right of way for the entire route.

With its participation in the LDV and considerable experience with respect to the permitting of transmission facilities in the area, PSEG was effectively an incumbent. Yet, after PSEG’s

proposal was identified as the preferred solution, the Delaware Public Service Commission (PSC) staff notified PJM that under its interpretation of Delaware statute “only Delmarva Power has the right to furnish transmission and distribution services within its retail jurisdiction.”¹⁰ Delaware PSC staff indicated that it had submitted legislation to remove this restriction on independent transmission companies or other utilities building transmission in Delaware.

Stakeholder Concerns

Not surprisingly, stakeholders expressed a number of concerns with the process. During the comment period an LS Power affiliate, Northeast Transmission Development, LLC, which was one of four “short-listed” proponents and which had offered a similar solution to the recommended proposal from PSEG, proposed a cost cap of \$171 million that was considerably below PJM’s cost

In FERC’s view, ‘transparency’ is understanding why you won or lost.

estimate. LS Power offered the cost cap “[i]n order to remove any cost uncertainty from the selection process, and to guarantee that the ratepayers receive the benefit of the real and material cost advantages offered by the LS Power Solution.”¹¹ With a cost cap, LS Power’s lower cost

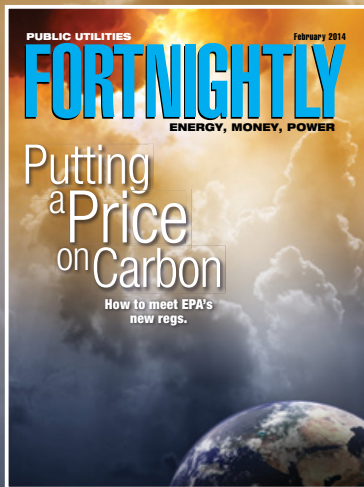
distinguished itself from the other proposals.

The New Jersey Board of Public Utilities staff and Division of Rate Counsel, who would be in a position to question the prudence of the investment before FERC, questioned the substantially higher cost of the recommended project in light of LS Power Group’s cost cap. Exelon critiqued the process as “not transparent to participants” and asserted that it had caused to be selected “the project closest to the one created by PJM.” Interestingly, Exelon’s criticism regarding the alleged lack of transparency echoes the test suggested by FERC.

In response to these criticisms, and more importantly, LS Power’s proposed price cap, which fundamentally changed the relative value being offered by LS Power and the other proponents, PJM determined that it was necessary and appropriate to consider cost caps from other proponents. In August 2014, PJM requested supplemental proposals that contained “final terms of project costs” from four finalists, VEPCO, Transource Energy LLC (a joint venture of American Electric Power Company and Great Plains Energy), LS Power, and PSEG. When requesting supplemental proposals, PJM emphasized

10. June 11, 2014 email from Robert Howatt, Executive Director Delaware Public Service Commission to Steve Herling, Vice President, Planning PJM.

11. Northeast Transmission Development, LLC, July 8, 2014 Letter to PJM Board of Managers.



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that “cost is only one of several considerations that will be a factor in the final selection.”¹²


In September three of the four proponents submitted revised cost proposals that offered cost caps. PJM’s Transmission Expansion Advisory Committee is expected to make a recommendation to the PJM Board as to which proposal should be selected to address the Artificial Island planning criteria violations in late December 2014 or early January 2015.

Lessons Learned

In spite of the issues with PJM’s implementation of its competitive procurement process, it appears to have produced considerable benefits by securing reduced costs and proposals with less risk. While it would be difficult to determine the actual dollar savings produced, given fundamental differences between estimated project costs under cost-of-service ratemaking and the cost caps offered, the cost caps provide a clear reduction in project cost risks

to customers, with the actual reduction in these risks depending on the terms ultimately accepted by PJM staff.

Nonetheless, it remains clear that PJM needs to work on enhancing the integrity of the process – by following the process reflected in its RTEPP, with appropriate modifications to this process based on the lessons learned. This need for improvement may involve making clear where its transmission planners will have the discretion to employ professional judgment and how it will ensure that this exercise of professional judgment is employed consistently across all proposals. One such process enhancement might include a process monitor that would evaluate whether PJM’s evaluation process conformed to the process outlined in its RTEPP.

Without such changes, PJM and other RTOs risk discouraging non-incumbents from participating in these processes. This concern is critical, because it is likely that any evaluation framework will tend to favor incumbents, given their inherent competitive advantages, which include knowledge of their transmission systems, familiarity both with the communities that they serve and the respective permitting regimes in these jurisdictions, and access to existing rights of way. 

12. July 14, 2014 Letter of PHI and Exelon to PJM Board Chair and President and CEO.