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FERC Order 1000 & Public Policy Transmission Projects

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The Federal Energy Regulatory Commission's (FERC) Order 1000 addresses a wide range of policy issues including provisions that may prove beneficial to advance transmission projects for renewable energy and other merchant power projects. These provisions relate to limitations on incumbent utilities' right of first refusal to develop transmission projects, the requirement for regional transmission organizations to file tariff provisions related to policies and procedures for addressing cost allocation, and the inclusion of public policy considerations in the cost benefit analysis for transmission projects. The order extends the framework for cost allocation defined in Order 890, introduces public policy as a new component of the benefits assessment, and has new *pro forma* tariff requirements related to regional cooperation and cost allocation.

The FERC Order is widely viewed as an opportunity to approve and fund more transmission projects associated with renewable resources (siting issues aside). As a result of Order 1000, the evaluation of a transmission project's benefits can extend beyond the traditional calculations of reliability, congestion reduction, and power price reductions. However, the inclusion of public policy may result in a large number of proposed projects claiming either unrealistically high benefit-to-cost ratios, or benefits disproportionate to traditional reliability projects. The implications of including this new category of benefits is uncertain and will be influenced by the actual compliance tariff filings and the inevitable law suits. In this paper we provide a high-level summary of FERC Order 1000 as it relates to the issues of public policy benefits and cost allocation.

Background

FERC Order 1000, issued on 21 July 2011, addresses three fundamental reforms affecting transmission planning: regional planning reforms, cost allocation reforms, and non-incumbent developer reforms.¹ The regional planning reforms require each public utility transmission provider to participate in a regional transmission planning process. Moving beyond the regional planning provisions in FERC Order 890, the new Order requires each public utility transmission provider to consider transmission needs driven by public policy, and expands on interregional coordination requirements. While the entirety of the reforms in Order 1000 is important, this paper focuses on the public policy requirements and cost allocation issues.

The Order articulates six cost allocations principles that must be incorporated into the transmission tariffs of RTOs/ISOs/other transmission planning entities.² Similar to the approach towards cost allocation in Order 890, the FERC shied away from a one-size-fits-all approach and did not take a prescriptive approach with respect to specific inter- and intra-regional cost allocation methodologies. The Commission left it to the regional entities to go through an appropriate process involving stakeholders to adopt a cost allocation methodology consistent with the six principles. The Order requires compliance transmission tariff filings with FERC to propose regional solutions that the Commission may then approve. The Order also states that the entities have the option, but not the requirement, to propose different cost allocation methods depending on whether the transmission project is associated with reliability, relieving congestion, or achieving public policy goals.

FERC's New Six Cost Allocation Principles

In FERC Order 890, the FERC outlined nine principles that must be incorporated in the transmission planning process³, of which the ninth principle addressed cost allocation. Order 890 did not specify a cost allocation methodology but stated that cost allocations should:

1. fairly assign costs between the those that incur the costs and those that benefit,
2. assign costs in a manner that provides adequate incentives to build new transmission, and
3. assign costs in a manner that is generally supported by both state authorities and participants.⁴

Order 1000 addresses cost allocation in greater detail and defines six allocation principles in the context of both intra- and inter-regional cost allocations. For brevity, the principles are highlighted as they apply to both inter- and intra-regional projects.

1. The costs must be allocated “in a manner that is at least roughly commensurate with estimated benefits.”⁵ The benefits include reliability, production cost savings, congestion relief, and meeting public policy requirements.
2. “Those that receive no benefit from transmission facilities, either at present or in a likely future scenario, must not be involuntarily allocated the costs of those facilities.”⁶
3. If a benefit threshold is established for determining which projects have net benefits, that threshold should not be higher than 1.25, absent sufficient justification.
4. Costs for regional transmission projects cannot involuntarily be allocated to other transmission regions.
5. The methods for cost allocation, determining benefits, and determining beneficiaries “must be transparent with adequate documentation to allow a stakeholder to determine how they were applied...”⁷
4. Different cost allocation methods can be used for different types of transmission projects. For example the transmission entity has the option, but not the requirement, to establish different cost allocation mechanisms in their tariff for projects designed for reliability versus projects associated with public policy requirements.

This remainder of this paper focuses on both the FERC’s expansion of cost allocation principles to include meeting public policy requirements and the potential for establishing a distinct cost allocation method for projects justified on the basis of public policy.

Compliance Requirements for the Public Policy Provision

Utilities and ISOs are in the process of developing filings to meet the 11 October 2012 compliance requirements related to regional planning processes and cost allocation requirements.⁸ Most ISOs are in the process of holding stakeholder meetings and the general sense is that the groundwork laid in Order 890 provides the basis for addressing the requirement to include public policy considerations. As a result of Order 890, there are procedures for regional coordination and a combination of processes and procedures associated with cost allocation for regional market efficiency and reliability transmission projects. A number of stakeholders may want to simplify the compliance filing by applying the cost allocation procedures developed for Order 890 for the new application to public policy projects. However, prior to taking the “simple” path, a number of issues should be considered.

First, while the FERC has shown significant latitude in approving different cost allocation schemes, the common denominator is that there needs to be broad consensus among the regional participants that the cost allocation process is reasonable. In some cases, regional entities will need to expand the nexus of stakeholders to more broadly encompass the state policymakers and regulators. As a result of the expansion of the group of affected parties, the dynamics of the consensus may change.

Second, identifying the beneficiaries of public policy transmission is more likely to be delineated by state boundaries since we envision that transmission needs driven by public policies will arise out of state renewable portfolio standards or other state policies. For example, transmission projects to link a state with large amounts of wind resources to a state with a high RPS requirement might benefit the origin state with economic development benefits and the receiving state with a lower RPS compliance option, but may provide few benefits to an intermediate state that the transmission line passes through. To the extent that a regional entity is composed of states with disparate RPS requirements, it may take further analysis to demonstrate how an approved cost allocation schema applied to reliability or efficiency projects is appropriate to apply to a public policy project.

Third, while the FERC Order requires that costs be allocated commensurate with benefits, the measurement of public benefits is not defined in the Order. For example, one state may have a history of incorporating reductions in greenhouse gas emissions as a benefit in its analysis of the economics of alternative utility generation expansion plans, while another state may have a history of excluding those emission reductions. The process of defining benefits may be controversial as a result of disparate RPS requirements and programs related to reducing greenhouse gas emissions. While there is some degree of controversy related to the accuracy and appropriateness of different tools to measure reliability and market efficiency benefits of regional transmission projects, the tools and metrics are reasonably well defined. It is not clear that this level of regional agreement exists related to evaluation of public policy benefits.

Public Policy Benefit Calculation Issues

Public policy at a minimum appears to incorporate both federal and state statutes and regulations, but potentially could be more broadly defined by stakeholders to include likely future policies.⁹ A public policy benefits analysis will need to incorporate an assessment of whether the transmission construction option is the least costly alternative.¹⁰ This appears to add another level of complexity to the cost-benefit analysis. The specifics of the analysis are not defined in the FERC Order, but apparently it is not an effort by the FERC to get involved in the state-regulated least-cost planning efforts.

There are a number of high-level issues regarding how to structure the public benefits calculation. These issues include:

- How broad will the definition of a beneficiary be, especially with regards to the determination of who is shielded from the involuntary assignment of costs? If a public policy project reduces CO₂ emissions does everyone benefit and therefore should everyone have to pay?
- What is the weight of the cost-benefit analysis in deciding amongst competing projects that all meet the cost-benefit threshold test?
- What is the universe of alternatives that needs to be considered in the assessment of whether a transmission solution is the least-cost approach to achieving the policy?

- How broadly can the future scenarios of likely public policy be defined and does the likelihood need to be part of the calculation of benefits?
- What is the time horizon used to evaluate the associated public policy benefits and should end-effects be incorporated into the analysis?
- What is the appropriate discount rate to use and should reliability and public policy benefits have different discount rates?
- How are externalities treated in the calculation?
- How are difficult to quantify public costs such as changes in mortality rates for a person or an endangered species measured?
- What is the threshold for no or *de minimis* benefits to a transmission payer?

Answers to these questions will inevitably be region-specific and there may be greater clarity as each region works through a process to develop its Order 1000 compliance filing. These issues are also likely to be addressed in the inevitable legal challenges to the compliance filings. Furthermore, absent a highly prescriptive process at the regional level, the issues will likely arise in the process of developing submissions for proposed transmission projects. What is clear is that how these issues are framed and how the analysis is performed can dramatically alter any results of cost-benefit calculations.

Framing the benefits analysis will not start from a blank slate. Federal agencies have dealt with a number of these issues in the analysis of the economic impact of environmental regulations and states have dealt with some of these issues as part of integrated resource planning requirements. The challenge will be in combining these precedents in a manner acceptable to the stakeholders. Furthermore, this will inevitably not just be an academic exercise; the positions of the stakeholders will be influenced by their expectations of costs and benefits based upon expectations regarding ongoing initiatives.

Public Policy Benefit Calculation Components

The benefits associated with meeting federal and state environmental regulations and state RPS could potentially incorporate a broad spectrum of issues including:

- Providing access to renewable resources,
- Reducing greenhouse gas emissions,
- Increasing public health benefits from lower air emissions,
- Promoting economic development, and
- Furthering fuel diversification and energy security.

Access to Renewable Resources

A number of transmission project proposals involve connecting remote renewable resource-rich zones with load centers. (For example: New England offshore wind, wind in the Midwest, and solar in the desert Southwest.) The net benefits of these projects need to be compared with potential alternatives including construction of renewables closer to load centers, building distributed renewable resources, increasing energy efficiency efforts, and reforming electricity pricing.¹¹ This type of analysis has the “feel” of a more traditional utility integrated resource planning analysis. The analysis can become far more complex especially if the public policy perspective includes externalities such as impact on view corridors, potential impacts on endangered species, critical habitat, human health, and water use issues.

Reduction of Greenhouse Gas Emissions (GHG)

The complications with GHG emission reductions calculations are associated with the definition of the alternative(s) and value of each lb/ton of reduction. The mathematics of calculating the reduction in tons of GHG emissions of a wind project displacing a natural gas turbine is trivial. Agreement on what resources are actually being displaced, however, is likely to be complex. The definition and evaluation of alternative scenarios to meet the public policy goal is not trivial. For example, if there are multiple alternative projects for meeting a state RPS goal then the net GHG emissions reduction between the alternatives may be minimal absent consideration of power system impacts.

Once total or net tons of GHG emission reductions are calculated, the value of those reductions over what is presumably the 50-year life of a transmission project needs to be calculated. Clearly this valuation can be a significant factor in any net benefit calculation and there is likely to be significantly different estimates on the value of the reductions. The process of comparing the benefits of alternative approaches to transmission, as well as amongst competing transmission projects, will be meaningless if inconsistent valuation assumptions are used.

Lower Air Emissions and Public Health Benefits

The US Environmental Protection Agency (EPA) has created a precedent and methodology for calculating health benefits from reduced air emissions from fossil-fuel power plants. However, there is considerable controversy surrounding the EPA’s methodology. Since the FERC is not proposing to impose a national standard, both the inclusion of public health benefits that extent beyond what is addressed in EPA standards as well as the calculation of those benefits will have to reflect the perspectives of the relevant stakeholders.

Economic Development

The potential economic value of the Green Economy and Green Jobs initiatives has been calculated in a number of studies related to the value of state RPS legislation and emission reduction targets. (Of course, these studies are not without controversy regarding both the calculation of benefits and the potential loss of jobs as well.) Similar to the prior discussion of valuation of emission reductions, a critical part of the analysis is comparison of the transmission project's benefits compared to alternative approaches to achieve the public policy goal. An additional complication is consideration of the geographic boundaries for calculation of the economic development benefits. Construction of offshore wind turbines and an associated off-shore transmission system versus mid-west wind farms and associated transmission to serve Northeast loads both create jobs and other development benefits, but the benefits accrue to different regions. Hence not only the definition of the benefits matter but also the definition of the beneficiaries given the principle that transmission costs must be allocated commensurate with benefits.

Fuel Diversification

The value of the diversification of generation sources can be evaluated in the context of managing volatility in overall electric prices, minimization of shocks from fuel supply issues, and lower costs for a fuel based upon reduced demand.¹²

Cost Allocation including Public Policy Benefits

Several ISOs have FERC-approved cost allocation methodologies that explicitly address projects associated with reliability and market efficiency. The ISOs will need to consider whether these approaches comply with FERC Order 1000 and whether the methodologies are applicable to projects justified based upon public policy. FERC has been silent on the answer to these questions in recent rulings on transmission cost allocation. For example, FERC recently reaffirmed Midwest ISO's transmission planning process, which includes a new category of transmission projects called Multi-Value Projects (MVP).¹³ An MVP is defined as a transmission project that is "determined to enable the reliable and economic delivery of energy in support of documented energy policy mandates" or that addresses multiple reliability and/or economic issues affecting multiple transmission zones. The costs of transmission projects that meet the criteria of an MVP are eligible for 100% regional allocation.¹⁴ FERC states that its approval "does not address whether any further modifications may be required in order to comply with the requirements of Order No. 1000."

In similar fashion, FERC reaffirmed the Southwest Power Pools (SPP) Highway/Byway cost allocation methodology.¹⁵ Under the Highway/Byway methodology, costs are allocated to SPP member utilities based on the voltage of a new transmission facility as follows: (1) the costs of facilities operating at 300 kV and above are allocated 100 percent across the SPP region on a postage stamp basis; (2) the costs of facilities operating above 100 kV and below 300kV are allocated one-third on a regional postage stamp basis and two-thirds to the zone in which the facilities are located; and (3) the costs of facilities operating at or below 100 kV are allocated 100 percent to the zone in which the facilities are located. Wind generation network upgrade costs can be allocated up to 100% to the region, depending on the location of the upgrade and point of delivery, and the voltage of the upgrade.

Both the Midwest ISO and SPP cost allocation methodologies allocate the costs of “public policy” projects region-wide. And although FERC has not discussed compliance with Order 1000, one indication of FERC’s leaning on this issue may be the following statement from the SPP Order: “A strong regionally integrated transmission network provides benefits to all that are interconnected to it”. To the extent that states have different public policies related to renewable resources, there may be new disagreements regarding whether the currently approved cost allocation approaches are consistent with the Order 1000 directive that the cost allocation is commensurate with the benefits.

Summary

FERC Order 1000 is part of the evolution of reshaping the wholesale power markets. The requirement to include a new class of benefits related to public policy goals in the regional evaluation of transmission projects has the potential to increase the share of renewable generation in the US electricity production mix. We anticipate that there will be significant controversy related to both defining the calculation of public benefits and determining the appropriate cost allocation for transmission projects justified on the basis of public benefits. Some of this controversy will be resolved in conjunction with the compliance filings due in 2012 and 2013, although it is likely that many of the compliance filings will not extend beyond a framework for the analysis. It will require a significant effort to define how to calculate public policy benefits, determine how those benefits should be allocated among the market participants, and the associated cost allocation.

Endnotes

- ¹ Docket No. RM10-23-000
- ² Other major components of the order address the right of first refusal.
- ³ The nine principles are: coordination, openness, transparency, information exchange, comparability, dispute resolution, regional participation, economic planning studies, and cost allocation for new projects. FERC Docket No. RM05-25-000.
- ⁴ Paragraph 539, FERC Order 890, Docket No. RM05-25-000
- ⁵ Docket No. RM10-23-000, Order 1000, Section 586.
- ⁶ Ibid
- ⁷ Ibid
- ⁸ Inter-regional planning and cost allocation must be addressed in the compliance filing due 11 April 2013.
- ⁹ At the FERC Technical Conference held 12-13 September 2011, FERC staff was asked by participants what was meant by public policy. Their response was current federal and state statutes and regulations although the door was left open for a regional planning process to include consideration of pending or proposed statutes and regulations.
- ¹⁰ This is partially laid out in Paragraphs 155-156 of Order 1000.
- ¹¹ There is an implicit assumption that construction of renewable resources in less load-remote resources may be more costly to construct and have lower output. The inclusion of energy efficiency also assumes that energy efficiency is accepted as a suitable substitute for a renewable generation resource.
- ¹² "Valuing Fuel Diversity in Power Markets," By Graham Shuttleworth and Sean Gammons, NERA Economic Consulting.
- ¹³ FERC News Release: 20 October 2011, Docket NO. ER10-1791-001.
- ¹⁴ The project must meet one of the following criteria: Criterion 1 requires that the project be developed through Midwest ISO's transmission expansion planning process for the purpose of enabling the transmission system to deliver energy in support of documented energy policy mandates or laws that have been adopted through state or federal legislation or regulatory requirement. Criterion 2 requires that the project provide multiple types of economic value across multiple pricing zones with a total project benefit-to-cost ratio of 1.0 or higher. Criterion 3 requires that the project address at least one transmission issue associated with a projected reliability violation and at least one economic-based transmission issue that provides economic value across multiple pricing zones and generates financially quantifiable benefits in excess of the total project cost.
- ¹⁵ Order on Rehearing, Issued 20 October 2011, Docket No. ER10-1069-001.

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