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New England's Electric System Planning Process Effectively Achieves Incremental Market Investment and Long-term Integrated Transmission

New England's electric system planning process is working well—and should be preserved and enhanced to meet the changing needs of the industry. It works because information about transmission and the markets is combined to form a *comprehensive system planning approach*. This approach is a successful one with a proven track record in developing supply and demand resources and transmission projects across the region. Approximately 14,000 megawatts (MW) of new supply resources and 3,000 MW of demand resources have been put into service in the past decade or committed through the Forward Capacity Market. Nearly \$4 billion in transmission projects for reliability have been put into service and more investment is in the pipeline – including a unique proposal to build a major new interconnection between Québec and New England devoted solely to accessing hydropower resources.

New England's regional system planning process strikes the appropriate balance between market responses and longer-term transmission solutions—and creates a transparent framework for the two to interact. The needs of the system are identified ten years into the future such that the market can respond and transmission projects can be proposed and developed. In New England, market-based responses are relied on first because they protect consumers from market and technology risk. These responses become inputs into the transmission development process and serve to either advance, slow, or modify the scope of needed transmission projects. Regulated transmission solutions are relied on only as a backstop to market-based proposals but, ultimately, these regulated solutions must be designed to keep the power system in compliance with mandatory reliability standards. Because of its long development lead times, transmission must be pursued on an ongoing basis and adapted to reflect and accommodate changing conditions such as declining demand, as experienced in 2009, or unexpected resource retirements.

New England's success in developing transmission is based to a great extent on the active participation of the states and funding certainty.

State participation in the regional system planning process, particularly from state economic regulators and siting authorities, has been essential for achieving results. This includes direct involvement in the detailed assumptions of needs assessments, planning analysis, and review of transmission solutions, cost estimates and alternatives. With this background, the states have a deep understanding of system needs from which to consider specific projects within their state and the region. Transmission funding is another critical element in implementing transmission projects. In New England, the cost of regional transmission projects to meet mandatory reliability standards is shared by consumers, based on a beneficiary pays principle. All transmission customers benefit when reliability improvements are made to a highly interconnected regional network.

New England’s model is flexible and scalable: It can work for the development of economic transmission proposed to interconnect large-scale renewables, and can be adapted for use in other regions. Recent authority provided by FERC Order 890 to conduct longer-term economic-based studies of the power system is a first step. However, additional authority, and clarity on objectives, will be required to plan and build transmission to meet renewable power requirements. The decision to start planning the system for a specific type of resource is not without issues. It has the potential to move the industry back to integrated resource planning. This could create market distortions that may require additional reliability services and, ultimately, the need to adjust existing market designs.

Last year, ISO New England used its existing Order 890 authority to conduct a major economic study at the request of the New England governors. A scenario analysis, or “what if” approach, was used to evaluate the economic and environmental performance of several resource scenarios. Different transmission investment scenarios were also studied to estimate the range of costs associated with integrating varying levels of on- and off-shore wind. Regional stakeholders benefited from the information that was produced, particularly from comparisons of the options available. However, the most valuable aspect of the study was the role played by the states in its development. They worked in close collaboration with the ISO in the study development process and ultimately approved its scope and assumptions. We believe this is an appropriate and effective model for designing economic and renewable transmission—and could be adopted in other regions and for interconnection-wide analysis.

There is an important role for broader planning, but it is not a substitute for regional planning and should not undermine effective regional electricity markets. The comprehensive regional system planning that is taking place in New England is an important input to broader planning efforts. In fact, broader, interconnection-wide and national planning will only work if it takes into account the status, needs, and future development of the underlying regional systems. A process that harmonizes regional plans with national energy policy goals will best serve the interests of the regions and the federal government.

Any multi-regional planning process will result in an initial plan that is imperfect and, therefore, it will have to be iterative, whether you take a “bottom-up” or “top-down” approach, in order to refine it. However, the starting point is very important—a “bottom-up” approach that creates a multi-regional plan based on the synthesis of existing regional plans has the significant advantage of being supported and understood by the local states and stakeholders—and this is what ultimately allows transmission infrastructure projects to move forward. New England’s experience has been that a robust process based on specific, mandatory requirements and transparent information is the quickest path to success.

Action on national energy policy is needed to resolve uncertainty about the level of renewables that will be required, carbon emissions limits and transmission funding mechanisms. Uncertainty about these requirements and mechanisms has the potential to paralyze market-based decisions and thwart progress. The industry will only be able to move forward—to consider the potential infrastructure options and assess the economics of renewable integration—if the federal government provides direction on these major issues. In market-based regions like New England this will provide assurances that competitive options will come forward and cost-effective solutions will be selected.