Regional Transmission Planning and Economic Analysis Solutions
Siemens PTI offers FERC Order 1000 Requirements Support

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The Federal Energy Regulatory Commission (FERC) issued Order No. 1000 on July 21, 2011 to reform the Commission’s electric transmission planning and cost allocation requirements for public utility transmission providers. The Order ensures that competitive regional transmission planning processes are in place for producing efficient and cost-effective transmission plans, as well as ensuring that the costs of regional transmission solutions are allocated fairly to beneficiaries¹.

The Order has four primary components:

1. Regional transmission planning requirements. Public utility transmission providers are required to participate in a regional transmission planning process that produces a regional transmission plan.
2. Interregional transmission planning requirements. Neighboring transmission planning regions must identify and evaluate interregional transmission facilities that may be more efficient or cost-effective solutions to regional needs.
3. Transmission cost allocation principles. The regional transmission planning process must have a regional cost allocation method for new transmission facilities selected in the regional transmission plan for purposes of cost allocation.
4. Elimination of the federal right of first refusal (ROFR) for facilities subject to regional cost allocation. Regions must develop a process for transmission project submission, evaluation and selection. This component removes any ROFR from commission-approved tariffs and agreements with respect to new transmission facilities selected in a regional transmission plan, and allows any non-incumbent developer of a transmission facility selected in the regional transmission plan to allocate the cost of such transmission facility through the regional cost allocation method.

The changes brought about through Order 1000 are altering the competitive landscape for ISOs, RTOs, investor-owned utilities, transmission companies and transmission developers alike. In preparation for increased competition, these organizations should be equipped for:

• Identifying regional reliability, economic and public policy needs
• Developing transmission projects that are optimized to meet regional needs
• Technical evaluation of alternative projects
• Energy market evaluation (production cost modeling) of alternative projects
• Transmission project submittal to the planning coordinator
• Cost allocation of projects submitted to meet regional needs

Addressing these opportunities and challenges requires a range of technical capabilities including experience evaluating regional needs, developing regional transmission projects, and determining transmission project benefits and costs.

Siemens PTI brings our capabilities in reliability and market analysis together to cohesively develop and analyze transmission projects. Our comprehensive power system consulting expertise, combined with our familiarity with the various United States planning regions make us an ideal partner for FERC Order 1000 support.

Siemens PTI's available scope of services include all relevant aspects in the field of power system engineering, and we provide system modeling and analysis capabilities comparable to those of regional planning coordinators. With these capabilities we provide insight into how the planning coordinator looks at transmission projects, and we facilitate development of projects that maximize the likelihood the project will be selected.

Development of regional transmission projects starts with identification of relevant technical, economic and public policy requirements. The planning coordinator will typically define the minimum requirements, such as integrating a certain amount of renewable generation or mitigating a specific reliability concern. However, inclusion of additional requirements in the problem statement may result in solutions that provide higher value at little or no extra cost; Siemens PTI can help identify those opportunities.

Market or production cost analysis is also imperative to identifying critical issues on the system such as areas where the system is constrained and how generation can impact the transmission system over time. Siemens PTI utilizes PROMOD®IV for market simulations and marginal cost calculations. Benefit-to-cost ratios can be determined for transmission projects after achieving reliability, economic or policy requirements. At the outset, the "standard" benefits for a transmission project, which include adjusted production cost savings, transfer capability improvements, loss reduction, and reduced emissions will be identified. These elements will be integrated to deliver benefit-to-cost ratios for the array of potential solutions.

With our local system knowledge and energy market analysis capabilities, Siemens PTI can assist in analyzing project alternatives. With regional offices across the United States, Siemens PTI can provide local knowledge in each planning region.