



Transmission Congestion And Investment Analysis



ICF International's wholesale power practice supports private- and public sector clients by providing economic and technical services and policy analyses that enhance our client's ability to make the best strategic and resource development decisions.

Our transmission services include the following:

- Transmission Congestion and Investment Analysis
- Optimal Power Flow Analysis
- Strategic Asset and Regulatory Services
- Power Generation and Transmission Asset Valuation and Due Diligence

Our Transmission Congestion and Investment Analysis Services include:

- Grid Impacts of Generation Injections and Bulk Power Transactions
- Optimal Power Flow Studies
- Contingency Analysis
- Transmission Congestion and Load Pocket Studies
- Plant Revenues from Voltage Support
- Plant Revenues from Operating Reserves
- Locational Marginal Pricing (LMP)
- Valuation of Transmission Assets
- Estimation of Transmission Interface Capacity

Transmission access is central to maintaining workably competitive power markets and to achieving expected returns on power plant investment. Declining investment in transmission capacity in recent years presents risks and opportunities in the power markets for the investors and owners of both generation and transmission assets. The winners will be those who are able to take a forward view of the marketplace and adopt strategies that will minimize risks and maximize value from the ownership and utilization of transmission. ICF International can help you to assess these factors in many ways.

Forecasting Congestion and Managing Congestion Risk

ICF helps clients avoid transmission congestion and minimize associated price risk by forecasting transmission congestion in Zonal or Locational Marginal Pricing (LMP) markets. On a node-by-node basis, we can help you determine what to pay for financial and physical access to the system. We also identify potential upsides for energy traders to maximize value from trading in energy derivative products.

Supporting Transmission Investment Decisions

We enable clients to identify size and time investments to ensure full-cost recovery plus a desired after-tax return-on-equity (ROE). ICF can help your firm make market entry and exit decisions by assessing new generation and transmission capacity, plant mothballing and retirement, plant retrofitting for environmental compliance, and demand response. We also address other key investment risks such as fuel markets, environmental regulations and allowance markets, and changes to existing transmission capacity.

Assessing the Grid Impact of New Generation, Loads and Wheeling Transactions

ICF evaluates the feasibility of new generation and large bulk power transactions and assesses the incremental impact of such transactions or investments on the grid. ICF provides clients with an assessment of grid interconnection options and cost estimates for greenfield development or existing capacity expansions.

Maximizing Locational Value in Resource Siting

ICF can identify advantageous locations in the power grid for siting power generation or large industrial load resources, taking transmission and market prices into account. We enable clients to optimally locate their resources and to maximize value by analyzing such factors as transmission availability; power flows; water resources; local, regional and national environmental regulations; fuel supplies; and market prices.

Estimating Voltage Support Revenues

ICF estimates the economic value of reactive power resources. We believe that some strategically located plants can earn more from providing voltage support than their lost opportunity cost from energy supply.

Extracting Value from Load Pockets

Congestion due to limited transmission can create a significant price divergence and presents an opportunity for market participants to extract value. ICF can identify such advantageous opportunities in the power markets to maximize investment value.

Market Assessment of Operating Reserves

ICF can forecast market prices for all classes of operating reserves for the integrated regional power markets in the United States to support market transactions and generation asset valuation. ICF forecasts prices for three classes of operating reserves i.e. Ten-Minute Spinning Reserves, Ten-Minute Non-Spinning Reserves and Thirty-Minute Supplemental Reserves.

The U.S. Eastern Interconnect Bulk Power Network



About ICF International

ICF International (Nasdaq: ICFI) partners with government and commercial clients to deliver consulting services and technology solutions in the energy, environment, transportation, social programs, defense, and homeland security markets. The firm combines passion for its work with industry expertise and innovative analytics to produce compelling results throughout the entire program life cycle, from analysis and design through implementation and improvement. Since 1969, ICF has been serving government at all levels, major corporations, and multilateral institutions. More than 2,000 employees serve these clients worldwide. ICF's Web site is <http://www.icfi.com>.

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