



Brief on Final FERC Ruling

Promoting Transmission Investment through Pricing Reform

Siemens PTI Can Help You Capture the Best Opportunities



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For about a decade now, industry players and observers alike have been rather preoccupied with the condition of the “aging transmission infrastructure” in the U.S. For example, in the opinion of some, the 2003 blackout event in the United States and Canada exposed the vulnerabilities of the transmission system in North America. Even President Bush concluded that the delivery system was “old and antiquated”. And the FERC stated that “underinvestment in the grid is a national problem.”

The above is indeed supported by fact. For example, a survey by the Edison Electric Institute (EEI)¹ shows that transmission investment declined in real dollar terms for 23 years, from 1975 to 1998, before increasing again, although investment for the most recent year available, 2003, is still below 1975 levels. Over the same time period, electric load more than doubled, resulting in a significant decrease in transmission capacity relative to load in every North American Electric Reliability Council region. Further, the EEI estimates that “... capital spending must increase by 25 percent, from \$4 billion annually to \$5 billion annually, to assure system reliability and to accommodate wholesale electric markets, and that the 2.5 percent growth rate in transmission mileage since 1999 is insufficient to meet the expected 50 percent growth in consumer demand for electricity over the next two decades.”

Partly in response to the above concerns, and for several years now, the Federal Energy Regulatory Commission (FERC) has attempted to promulgate rules to bolster investment in transmission, as well as to promote electric power reliability and lower costs for consumers, by reducing transmission congestion. For example, in January of 2003, FERC announced that it would offer up to three extra percentage points to encourage U.S. utilities to join a handful of regional transmission organizations planned across the nation. The new rules were to reward between 50 basis and 150 basis points to a utility's rate of return on equity if it agreed to join a regional grid, or sell transmission assets to an independent operator. A utility could earn up to a maximum of 300 extra basis points. Needless to say, this proposal did not achieve its intended consequences.

The latest attempt by the FERC in this respect is the recently-enacted final rule entitled “Promoting Transmission Investment through Pricing Reform.” This rule is a result of the Energy Policy Act of 2005 (2005 EPAct), which directed the FERC to develop incentive-based rate treatments for transmission of electric energy in interstate commerce, adding a new section 219 to the Federal Power Act. This new rule “provides increased regulatory certainty and procedural flexibility to encourage much-needed investment in all areas of the country.”

¹ Survey of Transmission Investment: Historical and Planned Capital Expenditures (1999-2008).

Key provisions of the rule include

- incentive rates of return on equity for new investment by public utilities (both traditional utilities and stand-alone transmission companies, or transcos);
- full recovery of prudently incurred construction work in progress;
- full recovery of prudently incurred pre-operations costs;
- full recovery of prudently incurred costs of abandoned facilities;
- use of hypothetical capital structures;
- accumulated deferred income taxes for transcos;
- adjustments to book value for transco sales/purchases;
- accelerated depreciation;
- deferred cost recovery for utilities with retail rate freezes; and
- a higher rate of return on equity for utilities that join and/or continue to be members of transmission organizations, such as (but not limited to) regional transmission organizations and independent system operators.

All rates approved under the rules would be subject to Federal Power Act rate filing standards, the FERC noted. The rule does not grant utilities all of the listed incentives, but rather allows utilities on a case-by-case basis to select and justify the package of incentives needed to support new investment. Additionally, the rule provides expedited procedures for the approval of incentives to provide utilities greater regulatory certainty and facilitate the financing of projects.

In addition, the FERC is adopting an annual reporting requirement, FERC Form 730, which will be required from utilities that have received incentive rate treatment for specific transmission projects. The annual reporting requirement would include projections and related information that detail the level of transmission investment.

In our opinion, this rule in combination with the repeal of PUHCA (also a result of the 2005 EPA Act), has the potential of truly accelerating investment in the transmission sector. Investment will most likely materialize in either (or both) of these ways: (i) non-traditional players (such as Babcock & Brown and KKR) taking an interest in the transmission segment of the industry, and/or (ii) traditional players building more transmission. It is not difficult to imagine what impact some of these actions will have on the equipment supply business. For one, the market of some suppliers will immediately shrink if, for example, a competitor happens to buy a transmission company.

What does the FERC ruling mean to our clients?

- Increased pressure to react quickly in order to capture the “best” transmission opportunities.
- Strain on planning and engineering departments to quickly develop - and constantly update – transmission expansion opportunities/solutions.
- Need to quickly become familiar with markets and regions that are beyond the traditional area of influence of the staff.
- Need to become familiar with transmission technologies (such as HVDC) which have not traditionally been considered by the staff.
- Transmission rate of build will increase placing strain on procurement departments.
- Developing merchant transmission will require the staff to become proficient in non-traditional areas, such as economic/financial and regulatory.
- Merchant transmission will turn up in our clients “back yard” and demand connections.
- New monitoring systems.
- New capacity for generation siting and operations.
- Trading/bidding/gaming in deregulated markets will change as the systems are altered.
- The need for training will increase.

The expectation is that the new initiatives at the FERC will open up numerous possibilities for Siemens PTI to provide additional services. Indeed, we are very well positioned to offer the technical, economic, and regulatory services that will be demanded by the various agents (including project sponsors, lenders, users, and regulators) as the electricity transmission sector learns how to take advantage of the new incentives being advanced in the U.S.

Some of these services include the following:

- When non-traditional players enter the market, it is generally the case that many transactions are project financed. Siemens PTI contributes significant experience with the provision of independent review/due diligence services for project-financed transactions in the power delivery industry. We can make recommendations regarding cost-effective options and plans that are profitable. In parallel, we evaluate the specific economic, political, and regulatory constraints to ensure that our recommendations are indeed feasible.
- We can identify new transmission opportunities from a technical, economic, and regulatory perspectives.
- We can estimate capital (i.e., CapEx), and/or operations and maintenance (i.e., OpEx) budgets and expenditures in order for power delivery companies to meet specific quality of service standards. We perform cost/benefit analysis of proposed budgets. We are unique in the sense that we are able to independently estimate the required expenditures of an electricity utility company on a going forward basis using either a top-down or a bottom-up approach, or both. Few other consulting firms can claim this ability.
- We help to identify the appropriate mechanism for private sector participation in the industry, including public-private partnerships (PPP), and can help make such partnerships work. We also provide guidance on the social and economic impacts of privatization, advice on regulatory and institutional reform, solicit investor interest, develop bidding documentation, and implement the restructuring strategy. We provide the assistance clients need to support the unbundling of vertically-integrated utilities into separate companies.
- Siemens PTI can also advise on whether a particular transmission project makes technical as well as economic sense. We have intimate familiarity and understand all transmission technologies, and can recommend the best solution (e.g., is it best to build AC or DC?) And the best technology is not only a technical decision. For example, most private developers choose DC over AC because the former reduces the uncertainty associated with project revenues on a going forward basis.

Technical Advice:

- Siemens PTI is the premier provider of transmission planning services in the U.S and internationally. We perform forward-looking assessments of transmission requirements, taking into account present industry structure, indicative generation development, demand expectations, and future uncertainties. In addition to detailed studies using advanced analytical techniques, we develop planning methodologies, reliability criteria, perform economic assessments, and review regulatory impacts. For this, we use the following analytical techniques: (i) load flow, (ii) short circuit, (iii) transient and dynamic stability, (iv) voltage stability, (v) load rejection, (vi) transfer capability, (vii) reliability assessment, (viii) probabilistic approaches, (ix) AC and DC transmission, (x) lightning protection, (xi) FACTS technology, (xii) sub-synchronous resonance, (xiii) loss evaluation, (xiv) relay protection, (xv) series and shunt compensation, (xvi) SVC applications, and (xvii) interconnected operations.
- We can review the existing and planned transmission system for capability to deliver power from potential generators to target markets. We offer a quick scoping or fatal flaw analysis to identify the best locations on a regional basis. We also offer broader scope assessments taking into account fuel availability, environment considerations, regulatory and reliability issues, and transmission provider requirements.
- We can prepare electricity demand forecasts with the help of trend or econometric models that correlate electricity demand to the major drivers of electricity consumption, including macroeconomic

variables and electricity prices. We can also apply planning-under-uncertainty methodologies to prepare integrated resource plans.

Economic/Financial Advice:

- We can prepare detailed economic models of the power delivery business in order to: (1) assess the future viability of the enterprise, (2) understand its past financial performance, (3) determine the potential value drivers, (4) uncover areas of hidden value to the business, and (5) perform sensitivity analysis to determine the impact of the value drivers and other key variables on the profitability of the business. We test the financial viability of the companies under various scenarios and financial and operational targets.

Regulatory Advice:

- We can apply different methodologies for price control and regulation (such as rate of return, performance based, and price/revenue cap). Additionally, we have significant experience in the determination of revenue requirements and allowed revenues and rates of return, in the inventory and valuation of assets, in assigning revenue requirements in tariff design, in unbundling of tariffs, in analysis of fuel and PPA charges, and in the reduction of operational losses. We are at the vanguard of the application of this work around the world in developed and developing countries. In addition, Siemens PTI is able to provide expert economic and financial analysis of proposed policy reforms, and develop frameworks and modeling tools for in-depth analysis of tariff levels and structures. The analyses and models assist in evaluating the level of tariffs necessary to cover costs (actual, prudent, or efficient) under different operational and economic scenarios. Models are also developed to assist in decision making regarding the level and structure of charges for different customer groups where there are requirements for cost-reflectivity and tariff re-balancing.
- Siemens PTI can provide expert economic and financial analysis of proposed policy reforms, and provide formal and on-the-job training to strengthen the regulators' capacity to carry out their mandate. In situations where the private sector plays a role, we provide practical advice on the compatibility of proposed forms of regulation and private sector participation.

Please contact Siemens PTI for:

- Professional Consulting Services from a USA team of 25 consultants with experience and access to many tools such as PSSTME, PSSTMMUST, Aspen Oneliner, PSLF, and PSSTMSINCAL.
- Professional Training and Education Services – taught by experienced consultants, attend and access to influencing software product development, preview of latest products showing trends in the global market of power engineering.
- World Leading Software Solutions – 44,000+ licenses serving users 124 Countries, ranging from Transmission planning (PSSTME) through to LMP Market modeling and Data Integration (PSSTMODMS).

For more information on the above please visit www.usa.siemens.com/PTI.