

Comparing Interstate Regulation and Investment in US Gas and Electric Transmission

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Executive summary

While the U.S. electric and natural gas transmission sectors share some features, there substantial differences between them with respect to regulation and new investment. Both electric and gas networks are affected by economies of scale and lumpiness issues potentially affecting market-driven investment, but the complex flows on an unswitched electricity grid add additional complexity. In practice, most investment in U.S. electric transmission has continued to be centrally planned, with cost recovery from regulated transmission rates. On the natural gas side, the U.S. has relied on a contract carrier model in which gas shippers directly contract and pay for gas pipelines.

The U.S. gas and electric transmission sectors have seen substantial need for new investment. For the gas sector, this has arisen from the growth in unconventional shale production, which has shifted the patterns of gas supply. On the electric side, need for new investment has been driven by new generating resources (many of them renewables located far from load centers), and by the dearth of transmission capital investment in the last few decades. However, the U.S. natural gas pipeline industry has been much more flexible and quick to build new transmission capacity in response to new demands. The ability of pipeline developers to identify new transportation needs, contract with transportation customers, and directly recover investments through contract revenues has proved critical. The U.S. electric transmission sector has been much slower to respond to new needs.

Federal regulators and Congress have enacted a number of policies designed to encourage new electric transmission investment, including enhancing the role of the Federal Energy Regulatory Commission (FERC) in siting new transmission lines and offering additional return incentives. FERC's landmark Order 1000, issued in 2011, sought to reform electric transmission planning at a regional and inter-regional level, identifying the need for better coordination and planning and requiring transmission costs to be allocated "roughly commensurate" with benefits. Order 1000 also introduced provisions that create competition among developers to identify and build certain new regulated electric transmission lines.

The implementation of Order 1000 is still a work in progress. The first new competitive transmission lines are now being selected. Two issues continue to play a major role in the political acceptability of new electric transmission projects. First, cost allocation remains a major issue. Despite the legal mandate for mechanisms to allocate the costs of large regional transmission projects roughly in proportion to the benefits obtained, some regional markets have tried to apply formulaic cost allocation methods. This has created substantial political pushback from affected states and customer groups in some circumstances. Second, electric transmission

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rates in the United States have long been set on a historic cost accounting approach. This has advantages in terms of investor protection – ensuring investors get a return on a predictable future valuation (historic cost minus accumulated depreciation). Where there has been little recent investment, however, this regulatory accounting framework employed creates the scope for transmission price shocks as new assets are added to the ratebase of heavily depreciated assets. This mechanism creates the scope for these rapid increases in transmission rates.

The U.S. experience with gas and electric transmission investment and regulation offers important lessons for other countries. First and foremost, a contract carrier model can be highly effective in the natural gas sector, while it cannot be in electric transmission. Effective central planning of the electric transmission sector remains critical. Competition for building new regulated electric transmission lines may help identify new solutions and help control costs, but at the costs of some additional regulatory complexity.

Development of workable cost allocation mechanisms for large regional electric transmission projects is critical. Without a cost allocation mechanism that allocates costs to regional utilities and customers seeing benefits, political opposition can further slow transmission development. Finally, while the cost of service regulation framework used in the U.S. provides a strong legal basis for investment, the use of historic cost accounting in systems with little recent capital investment can lead to sharp rises in transmission rates as new lines are put in service.