

Summary of Clifford M. Naeve's Testimony

Mr. Naeve discusses how and why the Federal Energy Regulatory Commission (FERC) took steps to introduce competition to wholesale natural gas and electric markets. He reviews the persistent regulatory failures that led FERC to reform the natural gas industry and describes the structural changes that were necessary to establish competitive markets.

Mr. Naeve then summarizes how FERC applied the lessons it learned to promote competition in wholesale electric markets. He describes the theoretical and practical reasons for expanding competition in wholesale electricity markets, the similarities between wholesale electricity and natural gas markets, and the important differences that complicate the task of restructuring electricity markets.

Testimony of Clifford M. Naeve

In my testimony I discuss how and why FERC took dramatic steps to transform wholesale energy markets by substituting competition for pervasive regulation. In the course of transforming wholesale markets, FERC also transformed itself, changing its understanding of when and how to regulate and its understanding of its statutory duties and powers.

FERC first was motivated to consider competitive solutions when it faced perplexing regulatory failures in natural gas markets. In the mid-1970's the nation had faced severe natural gas shortages in interstate markets. Lively disputes arose over how best to allocate scarce supplies as factories were shuttered and schools closed. The cause of the problem was flawed regulation by the Federal Power Commission, FERC's predecessor. At the time the FPC regulated gas producers as if they were utilities, and misguidedly set wellhead prices so low as to disincentivize new exploration and drilling. In contrast, intra-state gas markets, which were exempt from FPC regulation, generally enjoyed plentiful supplies.

Congress responded to the shortages by passing the Natural Gas Policy Act of 1978. The NGPA was highly prescriptive, mandating specific, inflation adjusted prices for both intra- and inter-state wellhead sales. In effect, Congress got into the business of dictating natural gas prices.

The higher statutory prices had the desired effect—by the early 1980's the gas shortage had been replaced by a rapidly expanding surplus. Oddly, the growing surplus did not cause

prices to fall. Instead, prices continued to increase. The law of supply and demand was being overridden by a mix of rigid regulations and archaic contracting practices.

Having the government set the market price for gas had created both shortages (when prices were set too low) and surpluses (when prices were set too high). FERC began to question the economic rationale for regulating wellhead production in the first place. Natural gas was essential to the public welfare, but the business of exploration and drilling for gas did not have the attributes of a natural monopoly. At the time there were 12,000 natural gas production companies—more than enough to sustain a competitive market.

FERC concluded that to rationalize the gas markets it had to replace utility-style regulation with competition so that floating prices could balance demand and efficiently allocate supplies between regional markets. The task, however, was not simple. The agency had to break down numerous entrenched barriers before competition could take root:

- Gas supplies had to be freed from prices set by the government.
- Producers and marketers had to be afforded direct access to the pipeline system so they could deliver their product to potential customers. FERC had to require pipelines to transport gas for their competitors.
- To ensure fair access, FERC had to issue and enforce rules to prevent pipelines from discriminating against their competitors in the price or quality of transportation service.

- FERC also had to abolish regulations that prevented producers from moving gas from one market to another. At the time, once a producer signed a gas sales contract with an interstate pipeline, FERC's rules required the producer to continue gas deliveries under the terms of the contract in perpetuity—even after the contract had expired.
- And ultimately, FERC had to address the transition cost of re-configuring an industry—costs which disproportionately fell on interstate pipeline operators.

FERC implemented these and other changes through dozens of rulemakings and cases. It is remarkable that FERC was able to implement these changes while working within the 50-year old statutory framework created by the 1938 Natural Gas Act (NGA). Although the NGA was passed in a different era, it delegated broad powers to the Commission which allowed FERC to adapt its approach to changing market conditions. In the mid-1980's FERC frequently revisited the statutory language to find new authority. In the Act's prohibition against undue discrimination, FERC found the power to require pipelines to transport their competitors' supplies. In the Act's commandment to set "just and reasonable" rates, FERC found flexibility to substitute competition for cost-based regulation. Fortunately, the courts gave FERC leeway to depart from precedent and, on occasion, the courts took the lead in finding new powers in the old statute. These regulatory changes, subsequently reinforced by the Natural Gas Wellhead Decontrol Act, transformed a troubled industry into the thriving industry we have today.

By the mid-1980's, FERC began to turn its attention to the electric power industry. As Susan Tomansky will discuss in more detail, at the time, wholesale power prices varied

tremendously from region to region. Would not broad competitive markets balance regional price disparities and encourage the most efficient use of generation resources?

Besides, FERC asked, what is the economic justification for regulating the power generation business? Is it a natural monopoly, or is it more like gas production? FERC already had witnessed the rapid birth of an independent generation industry in response to the incentives created by the Public Utilities Regulatory Policy Act of 1978 (PURPA). Although PURPA opened the door for independent power generation, it perpetrated the flaw of assigning regulators (in this case state regulators) the job of setting wholesale commodity prices. Often those prices were excessive, burdening consumers for decades to come.

Confronted with regulatory failures similar to those it had encountered in the gas industry, FERC began to apply the lessons it had learned to the wholesale electric power business. Unfortunately, however, fundamental differences between the electric and gas industries made FERC's job far more daunting:

- Unlike gas moving down a pipeline, the transmission of electric power does not follow a single path. Instead, when electricity is transmitted from Point A to Point B, the power flows are distributed across dozens, and maybe hundreds, of interconnected transmission lines that are part of the integrated transmission grid. Consequently, independent transactions on different parts of the grid can have overlapping and far-reaching consequences. A transaction scheduled on one part of the grid can burden remote grid elements, preventing other transactions from being scheduled.

- To further complicate matters, different pieces of the integrated grid are owned and operated by different companies, who also are injecting and withdrawing their own power. These grid operators may not have visibility into transactions being scheduled by other operators, and consequently may not be able to anticipate or control power flows on the segment of the integrated grid that they operate.
- Yet further complications arise from the difficulty of ensuring grid reliability. Basic differences between the gas and power industries make power reliability far more complicated than gas reliability. For one thing, the net input of power into the grid must at all times equal the net withdrawal of power from the grid to serve load. In the gas industry the need to balance gas pipeline injections and withdrawals is far less demanding. At times pipelines can accept more gas than they deliver, storing the surplus in what is known as line-pack. In addition, the pipeline industry has numerous supply-area and market-area storage fields that can be used to balance out temporal differences between supply and demand. The lack of storage on power systems requires system operators to keep significant amounts of generation resources at the ready to ramp up or down to follow moment-by-moment load changes and to provide emergency supplies when generation or transmission facilities unexpectedly fail.
- Moreover, due to the ability to inject surplus gas supplies into storage and to withdraw supplies in periods of excess demand, natural gas prices are less sensitive than power prices to short-term market perturbations. The volatility of gas prices is further dampened by the ability of many industrial gas users to switch to alternative fuels if gas supplies are either unavailable or too expensive. In contrast, very few power customers

can replace electricity with alternative energy supplies. Consequently, wholesale electricity prices are highly volatile.

- In addition, compared to wholesale gas prices, wholesale electricity prices are strongly affected by regulatory intervention by state and federal legislative and regulatory bodies. State resource and environmental programs such as renewable portfolio requirements, feed-in tariffs and net metering influence price formation in wholesale markets. Federal investment tax credits subsidize new market entry and influence capacity and energy prices. Production tax credits influence bidding behavior and energy market outcomes. Changes in federal environmental laws and regulations can change the composition of regional generation portfolios, affecting both market outcomes and reliability requirements.

The differences between the gas and power industries have complicated and prolonged the process of enhancing competition in power markets. That process is far from complete, both because of the complexity of the issues and because the industry operates in a constant state of flux due to changing environmental requirements, technological developments and state policies.

As I previously mentioned, in the course of transforming wholesale energy markets FERC also has transformed itself. FERC has moved from being an agency primarily focused on regulating rates and services, supported by an army of accountants and engineers, to an agency intent on protecting competition, so that wholesale market prices accurately reflect the balance between supply and demand. As FERC has changed its mission it also has changed the make-up of its staff, now employing large teams of economists and enforcement personnel who monitor

market behavior, help evaluate market design changes and work to curtail abusive market practices.

I will conclude by expressing admiration for the role FERC has played in reshaping the natural gas and electric power markets. Through both Republican and Democratic administrations, the Commission has been steadfast in its commitment to improving market efficiency and consumer welfare. Thank you for the opportunity to submit this testimony, and I would be pleased to respond to questions.