

**STATEMENT OF PROFESSOR WILLIAM W. HOGAN<sup>1</sup>**  
**BEFORE THE SUBCOMMITTEE ON ENERGY POLICY,**  
**NATURAL RESOURCES AND REGULATORY AFFAIRS**  
**UNITED STATES HOUSE OF REPRESENTATIVES**

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Thank you for the opportunity to participate in these hearings today. The Federal Energy Regulatory Commission (FERC) faces significant challenges in developing and monitoring restructured energy markets. This committee is to determine if FERC is able to meet the challenge and, where necessary, help craft new tools and authorities to address identified problems.

The Commission has related responsibilities for natural gas and electricity regulation. However, in these summary remarks, I will focus on restructured electricity markets. The case of electricity is important on its own, the issues are complicated, and a great deal is still unsettled. Furthermore, the unhappy experience with the California electricity market has raised many new questions and doubts that extend to the consideration of present efforts to restructure electricity markets in other parts of the country, and the rest of the world.

A competitive electricity market can be a vehicle for pursuing the public interest, but only if the market structure addresses the particular characteristics of the electricity system with its complex mix of essential facilities and large network externalities. The changes required are not well described as "deregulation." For electricity markets, "restructuring" is the better term where

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introducing competition leads not to less regulation, only different regulation.

Any evaluation of FERC's ability to monitor the performance of restructured electricity markets must begin with a view of the nature of the market and the extent of FERC's responsibilities. One view might be that the market can essentially create itself, such that FERC's role in establishing market design and rules should be relatively limited. A few basic principles of open access and non-discrimination would be enough. Within this framework, through the give and take among market participants, new market structures would evolve as needed. Different regions would pursue different designs, and any of a number of market models might suit. By this view, the broad principles and functions defined by FERC in Order 2000 should be enough, a thousand flowers should bloom, and the principal task remaining would be to make a few policy calls to preclude egregious deviations from the basic principles.

An alternative view would be that the special characteristics of electricity, with its complex networks and limited storage, require a more deliberate approach to market design to have an effective competitive electricity market. The existing technology for production and delivery of electricity operates under conditions that dictate the need for close coordination by a system operator. A fully decentralized electricity market is not possible. Evolutionary development through give and take among market participants can only take us so far, because in the end an electricity system must be coordinated to keep the lights on, and that reality requires that market actions and incentives be consistent with this necessary coordination function. As counterintuitive as it may seem, an electricity market requires central coordination and consistent market pricing in order to support decentralized competition. By this view, Order 2000 was only the beginning of a far-reaching set of policy decisions working towards a standard market design.

The choice matters for the issues being considered by this committee. As I have described at length in supporting papers, the logic of the case and the evidence of both successful and failed experiments indicate the need for a standard market design that provides certain essential ingredients for the competitive market. It is not possible to avoid the requirements for central coordination. Hence, the principal matter at issue is whether or not the rules for the coordinated

market support efficient and effective competition.

The most fundamental assumption of electricity restructuring has been validated beyond dispute. Market participants respond to incentives. Electricity markets with poorly designed institutions have provided the wrong incentives, and market participants have responded. The mistakes, once made, have been costly and difficult to fix. However, the mistakes have revealed what doesn't work, and the successes have reinforced the analysis of what should appear in a standard market design.

From this perspective, failure to adopt a standard market design founded on the need for a consistent market and system coordination would greatly complicate the task of monitoring market performance. With flawed designs, perverse incentives and a lack of transparency, it is very difficult to monitor market performance or analyze the behavior of market participants. The case of California illustrates the point. There is little doubt that the flowers that bloomed in California produced what FERC has repeatedly described as "seriously flawed" structure and design. High prices and other evidence suggested a pattern of market manipulation, but FERC has said that it has not had a record to "support findings of specific exercise of market power." My colleagues and I have argued that FERC's caution is justified because the California market design is so convoluted that it is difficult to tell what is an exercise of market power and what is simply a competitive response to bad market signals. There is little doubt that FERC is not up to the task of monitoring a market so badly designed.

The priority, therefore, should be to get a good market design in place and then consider the means and mechanism for market monitoring. Where is FERC in this debate?

Based on their orders and other public statements, it would be fair to say that FERC reflects the diverse positions presented to it. These different positions arise from competing interests as well as parties at different stages along the learning curve. However, FERC has a broad mandate to pursue the public interest, and it should be further along the learning curve. It appears that FERC is rethinking its approach. It is clear that FERC recognizes now that some flowers that sprouted were actually weeds choking off an effective competitive market. Further,

its recent orders regarding the size and scope of regional transmission organizations (RTO) were a major break with FERC's past pattern of exceptional deference to regional preferences. But FERC has not yet taken the next step of defining in more detail how market institutions should work within and among these RTOs. This may be coming, but further delay only complicates the transition and increases costs.

The experience is now sufficient for FERC to go beyond its previous deferential approach to markets created by stakeholders without regard to a set of detailed standard design principles. The good experience is concentrated in New York and in PJM, which serves the Mid-Atlantic region. These two markets now function under independent system operators (ISO) who employ a standardized spot market design for system coordination. New England recently decided to embrace this standard market design. The common elements of this standard design include a bid-based, security-constrained, economic dispatch with locational prices, bilateral schedules, financial transmission rights, license-plate access charges and a broad scope for market-driven investment. Efficient pricing consistent with the ISO coordination functions then permits maximum commercial freedom without undermining reliability. The market monitoring and market power mitigation rules follow from the design. The details of this approach are readily available, theoretically sound, well understood, and bolstered by successful experience covering the same period of operation as the California failure. The precise implementation may differ slightly to recognize best practices or local reliability requirements, but the principles go further in the direction established by Order 2000.

These principles would include:

1. The ISO must operate, and provide open access to, short-run markets to maintain short-run reliability and to provide a foundation for a workable market.
2. An ISO should be allowed to operate integrated short-run forward markets for energy and transmission.
3. An ISO should use locational marginal pricing to price and settle all purchases and sales of energy in its forward and real-time markets and to define comparable congestion (transmission usage) charges for bilateral transactions between locations.

4. An ISO should offer tradable point-to-point financial transmission rights that allow market participants to hedge the locational differences in energy prices.
5. An ISO should simultaneously optimize its ancillary service markets and energy markets.
6. The ISO should collaborate in rapidly expanding the capability to include demand side response for energy and ancillary services.

I would be happy to discuss these principles further.

Adopting and articulating these principles would be a major step forward. It would make clear that FERC accepts responsibility for doing what needs to be done to create effective institutions in support of a competitive market. It would make clear that FERC recognizes that defining the essentials of a standard market design is a task that only government can perform in its role of setting the rules under which markets can do their magic. And it would set limits on the scope of government action to supporting the market rather than dictating the outcomes.

Given this major step in establishing a presumption of a standard market design, it would be possible to consider further the requirements of market monitoring. The emphasis on market design and institutions would place a great premium on developing people and procedures that focussed on market analysis and the special complexities of the case of electricity. There are economists at the ISOs who have been developing the tools and data systems to do analysis and report to FERC. There are economists at FERC who have the skills and understanding that would be needed to monitor markets designed along the lines of those in New York and PJM. However, at FERC these economists are too few, and the commitment to the standard market design too tentative, to yet be effective in managing the task.

But this is not an insurmountable problem. The requirement for market monitoring can be met. The means are available through the FERC's powers to create regional transmission organizations. Through the creation of effective RTOs with a standard market design, the FERC has the opportunity and the responsibility to act. If competitive electricity markets are to work, FERC must act soon. Time is running out on further experimentation.

Supporting papers attached or available at:

www.whogan.com or <http://www.ksg.harvard.edu/whogan>

William W. Hogan, "Electricity Market Restructuring: Reforms of Reforms," May 2001.

Scott M. Harvey and William W. Hogan, "On the Exercise of Market Power Through Strategic Withholding in California." April 2001.

John Chandley, Scott M. Harvey, and William W. Hogan, "Electricity Market Reform in California," November 2000.