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Report to Congressional Requesters

June 2002

# ENERGY MARKETS

# Concerted Actions Needed by FERC to Confront Challenges That Impede Effective Oversight

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## Abbreviations

| | |
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| AFMC | Air Force Materiel Command |
| EPACT | Energy Policy Act |
| ERCOT | Electric Reliability Council of Texas |
| EWG | exempt wholesale generator |
| FERC | Federal Energy Regulatory Commission |
| ICE | Intercontinental Exchange |
| IRS | Internal Revenue Service |
| ISO | independent system operator |
| MMU | market monitoring unit |
| MOR | Market Observation Resource |
| NYMEX | New York Mercantile Exchange |
| OASIS | Open Access Same-Time Information System |
| OMB | Office of Management and Budget |
| OMTR | Office of Markets, Tariffs, and Rates |
| OPM | Office of Personnel Management |
| PJM | Pennsylvania, New Jersey, Maryland |
| PUHCA | Public Utility Holding Company Act |
| PURPA | Public Utilities Regulatory Policies Act |
| QF | qualifying facility |
| RTO | regional transmission organization |

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**United States General Accounting Office**
**Washington, DC 20548**

June 14, 2002

The Honorable Joseph I. Lieberman
Chairman, Committee on Governmental Affairs
United States Senate

The Honorable Jean Carnahan
United States Senate

As requested, we are reporting on the Federal Energy Regulatory Commission's (FERC) efforts to revise its approach to regulating and overseeing the nation's natural gas and electric power industries in light of these industries' evolution from highly regulated monopolies to competitive energy markets. This report contains recommendations to the Chairman of FERC on developing and implementing an effective regulatory and oversight approach for these markets. The report also contains a matter for congressional consideration on the need to review FERC's legal authorities to determine whether revisions are warranted in view of the change to competitive energy markets.

As agreed with your offices, unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days from the date of this letter. We will then send copies to other appropriate congressional committees; the Chairman, FERC; and the Director, Office of Management and Budget. We will also make copies available to others upon request. In addition, the report will be available at no charge on the GAO web site at http://www.gao.gov.

If you or your staff have any questions concerning this report, please call me at (202) 512-3841. Key contributors to this report are listed in appendix IV.

Jim Wells
Director, Natural Resources
and Environment

# Executive Summary

## Purpose

Consumers in various parts of the United States have experienced substantial fluctuations in the prices they pay for natural gas and electricity as these industries make the transition from regulated monopolies to competitive markets. These fluctuations—the most notable in California during the summer of 2000—have caused some consumers and state officials to question the wisdom of moving to competitive energy markets. They have also raised concerns about the ability of the federal government to adequately regulate and oversee these new markets. The responsibility for ensuring that wholesale prices for natural gas and electricity, sold and transported in interstate commerce, are "just and reasonable," generally rests with the Federal Energy Regulatory Commission (FERC).

The Chairman of the Senate Committee on Governmental Affairs and Senator Carnahan asked GAO to determine (1) how FERC has revised its regulatory and oversight approach in response to the new energy markets and (2) what management challenges FERC faces in effectively regulating and overseeing these markets. To respond to the request, GAO reviewed relevant legislation, regulations, studies, and documents pertaining to FERC's regulation and oversight of these industries. GAO also interviewed a wide range of current and former FERC Chairmen, Commissioners, and officials. In addition, GAO surveyed FERC staff in the Office of Markets, Tariffs and Rates and related sections of the Office of the General Counsel who have primary responsibility for regulating the natural gas and electricity industries. About 71 percent, or 271, of these 384 staff responded to GAO's survey. Furthermore, GAO obtained information from a wide range of FERC's stakeholders—including state and industry representatives—and other industry experts. For example, GAO surveyed the chairmen of the state public utility commissions or boards. Thirty of the 49 commissions or boards responded to GAO's survey. (See ch. 1 for GAO's detailed scope and methodology and app. II for a copy of the FERC employee survey with the quantitative results.)

## Background

FERC was established in 1977 as a successor to the Federal Power Commission. FERC is an independent federal agency of about 1,200 employees. Five Commissioners, each appointed by the President to a 5-year term, and confirmed by the Senate, lead the agency. The President designates one of the Commissioners as the Chairman, who is responsible for the agency's administrative operations. In addition to regulating and overseeing interstate transportation and wholesale sales of natural gas and electricity, FERC regulates transmission of oil by pipelines, licenses hydroelectric projects, and approves site choices for interstate pipelines

and related facilities. Jurisdiction over other aspects of the natural gas and electric industries, such as retail sales, construction of electric power plants and transmission lines, and intrastate transportation, belongs to state and local governments.

For nearly a century, the natural gas and electricity industries were regulated as natural monopolies and dominated by a relatively few, large public utilities that produced, transported, and sold natural gas and electricity to the ultimate users.[1] This monopoly structure controlled the entry, prices, and profits of industry participants. With technological, economic, and policy developments over the past 25 years, these industries have undergone a transition from this highly regulated environment to one that places greater reliance on competition to determine entry, prices, and profits. Natural gas was first to make the shift, facilitated by passage of the Natural Gas Policy Act of 1978 and subsequent FERC orders in 1985 and 1992 that opened pipeline transportation to all on equal terms and required pipeline companies to completely separate or "unbundle" their transportation, storage, and sales services. As a result, natural gas became a commodity bought and sold separately from its transportation.

The electricity industry has experienced similar developments, starting about the same time but evolving more slowly than the natural gas industry. The Public Utility Regulatory Policies Act in 1978 introduced competition by requiring electric utilities to buy electricity produced by nonutility, electric power generators. Then in 1992, the Congress passed the Energy Policy Act, authorizing FERC to require utilities, on a case-by-case basis, to allow competitors to use their transmission lines for wholesale sales of electricity. In 1996, FERC ordered that electric transmission systems be opened to all qualified wholesale buyers and sellers of electric energy. FERC also required utilities to "functionally unbundle" their generation and transmission businesses to prevent discriminatory practices, such as not allowing competitors equal access to transmission lines. One option FERC provided the utilities to help them achieve unbundling was to transfer management of their transmission lines to an independent system operator that would manage the system without any special interests and for all users' benefit. In 1999, FERC

[1] A natural monopoly is a company that becomes the only supplier of a product or service because the nature of that product or service makes a single supplier more efficient than competing ones.

issued an order asking all utilities to transfer control of their transmission lines to regional transmission organizations. FERC is in the process of establishing these organizations to cover the continental United States.

Under the traditional regulatory framework, FERC established individual utilities' terms, conditions, and rates for transportation and wholesale sale of natural gas and electricity in interstate commerce. To ensure that the rates these utilities charged were just and reasonable, FERC based the rates on the utilities' cost to provide the service plus a fair return on investment, which is generally referred to as cost-of-service regulation. With the opening of pipelines and transmission lines, other energy producers and marketers began to compete with the traditional utilities to the point that a complex structure of formal and informal primary and secondary energy markets has evolved. As competition has increased, FERC has allowed more and more producers and marketers to sell their energy at prices determined in the marketplace.

## Results in Brief

FERC has not yet adequately revised its regulatory and oversight approach to respond to the transition to competitive energy markets. The agency recognizes that the change from highly regulated monopolies to competitive markets requires it to fundamentally change how it does business. However, it has struggled through various strategic planning and other efforts to define the specific strategies, processes, and activities that it will use to regulate and oversee these markets. Specifically, GAO found the following:

- An ambitious, 2-year reengineering effort begun in 1997 was intended to position the agency to operate within the new market realities, but the effort achieved little more than superficial changes to FERC's organizational structure.

- To date, FERC's initiatives to monitor competitive markets have served more to help educate FERC's staff about the new markets than produce effective oversight efforts. For example, the agency's Market Observation Resource room makes a substantial amount of market data available to staff in a readily usable format; however, this information has not yet been used to initiate an enforcement action or to confirm or refute a problem identified elsewhere in the agency.

- FERC's difficulties with developing an effective approach for monitoring competitive markets are compounded by the need to continue to carry out

its traditional cost-of-service regulation as the industry makes the transition to competitive markets.

- FERC is attempting to develop an approach for competitive markets using legal authorities that were enacted primarily when the energy industries were regulated monopolies. For example, FERC generally does not have the authority to levy meaningful civil penalties. While this authority may not have been necessary for cost-of-service regulation, it is important if FERC is to pose a credible threat and deter anticompetitive behavior or violations of market rules by market participants.

  Absent an effective regulatory and oversight approach, FERC lacks assurance that today's energy markets are producing interstate wholesale natural gas and electricity prices that are just and reasonable. Although many details remain to be decided, FERC's current thinking is that the regional transmission organizations will be required to establish independent units to serve as the agency's frontline monitors for the new markets. However, it is likely to be several years before these units will be fully operational. Therefore, GAO is making recommendations to the Chairman, FERC, aimed at improving the interim regulation and oversight of these markets until a long-term, comprehensive approach can be established. In addition, GAO is suggesting that the Congress may want to review and revise FERC's authorities in the context of competitive market structures, such as the need to levy meaningful civil monetary penalties.

  Under any future scenario, FERC must overcome significant human capital and organizational structure challenges to effectively regulate and oversee the evolving energy marketplace. Although its staff will continue to do some cost-of-service regulation, FERC needs more staff knowledgeable about competitive energy markets and skilled in regulating and overseeing them. FERC is taking steps to transform its workforce so that it will be able to successfully regulate in a competitive market environment. However, GAO found that FERC

- has had difficulty recruiting such staff, in large part, because it has trouble competing with private sector salaries;

- faces the impending retirement of a large portion of its staff—over one-quarter of its employees will be eligible to retire by 2005;

- has used recruitment bonuses, retention allowances, tuition reimbursement, and flexible work schedules to attract new staff and to retain current employees, but it has not taken advantage of the full range

of personnel flexibilities and tools available to federal agencies, such as special salary rates; and

- has not developed a strategic human capital management plan to assess its specific workforce needs and to develop strategies to address them.

Furthermore, FERC's current organizational structure diffuses its market oversight function, making it more difficult to provide the communication, focus, and management attention needed to successfully implement a new regulatory and oversight approach. FERC plans to establish an Office of Market Oversight and Investigation reporting to the Chairman to provide this communication, focus, and management attention, although many details are yet to be resolved. GAO is making recommendations to the Chairman, FERC, to help address the agency's serious human capital concerns.

In commenting on a draft of this report, FERC agreed with GAO's conclusions that the agency has not done all that it could to oversee energy markets and with the report's recommendations to improve market oversight and to address the human capital challenges faced by FERC. The agency also provided technical comments that GAO incorporated as appropriate.

## Principal Findings

### FERC Has Not Yet Defined and Implemented an Effective Regulatory and Oversight Approach for Competitive Energy Markets

As competitive energy markets started to develop in the early 1990s, FERC recognized that it would need a new approach to ensure just and reasonable energy prices. Its first strategic plan, which was completed in September 1997, confirmed the need for this new approach but did not delineate the strategies needed to put such an approach into place. Instead FERC, in 1997, launched a 2-year, $20-million project to reengineer itself to operate in this competitive-market environment. One of the more significant results of this project, which is referred to as FERC First, was to combine the agency's staff responsible for natural gas and electricity regulation into a new Office of Markets, Tariffs and Rates. This new office was to be responsible for regulating and overseeing competitive energy markets. FERC First, however, did not bring about the fundamental changes that were anticipated and needed to implement a new regulatory approach. For example, 74 percent of the employees responding to GAO's survey believed that FERC First had improved the agency's ability to effectively monitor or regulate energy markets to little or no extent. The

agency has subsequently continued to struggle to define the specific strategies, processes, and activities that it will use to regulate and oversee the emerging energy markets. For example, although FERC made improvements to its strategic plan in 2000 and 2001, the plan still lacks outcome-oriented goals and objectives and important details on how FERC will monitor these markets. The agency has yet to decide what market monitoring means in the context of FERC's responsibility to ensure that energy prices are just and reasonable.

FERC has also tried various efforts to oversee energy markets, including a staff investigation in 2000 of the nation's wholesale electricity markets and the development of a Market Observation Resource room that serves as a central source of market data that FERC staff can view electronically using various software packages. These efforts to date, however, have served more as educational opportunities for FERC staff than as effective oversight tools. For example, in commenting on the staff investigation of wholesale electricity markets, FERC management concluded that the investigation made it clear that the agency did not have enough people who could analyze market information. Similarly, the major products of the Market Observation Resource room have been daily and monthly informational newsletters prepared for FERC's Commissioners and managers on energy market events and conditions, such as business news, natural gas supply levels, electricity price trends, and power plant outages.

Moreover, because FERC's legal authorities for natural gas and electricity are mostly derived from laws enacted when the industries comprised highly regulated monopolies, FERC has been attempting to develop and implement a regulatory and oversight approach for competitive markets, with an outdated legislative framework and using authorities that may not be adequate for today's competitive markets. For example, the potential for a company to engage in anticompetitive behavior and charge excessive prices for electricity is a significant concern when rates are determined by the marketplace instead of cost-of-service regulation, especially when the markets are still evolving. However, FERC's authority to levy civil penalties if it identifies this type of behavior is limited, because its authority is derived from laws that were enacted in a cost-of-service environment. Without a meaningful range of penalties, FERC lacks adequate enforcement "bite" to deter anticompetitive behavior or other violations of market rules. Such deterrence is an important part of an effective oversight approach, especially because FERC will likely not be able to review all the transactions in detail to identify such behavior or violations.

Finally, frequent changes in FERC's leadership have been another contributing factor to FERC's slow progress in developing and implementing a new approach. FERC has had four different Chairs over the past 5 years. As the agency's chief administrator, the Chair sets the agenda and priorities. Making fundamental changes in an agency's operations, such as implementing a new regulatory and oversight approach, can take a sustained effort over several years. This can be difficult to achieve with significant shifts in an agency's agenda and priorities caused by continuous change in its top leadership.

To address these issues, GAO recommends that the Chairman, FERC, take the following actions:

- Update the agency's strategic plan to include outcome measures that can be used to assess how well FERC is doing in achieving its strategic goals and objectives for overseeing competitive energy markets. This plan should also include specific strategies for achieving the goals and objectives that set out explicitly how FERC will work with market participants to provide comprehensive oversight of the markets.

- FERC should examine how the bulk power studies and the data sources currently available through the Market Observation Resource room can be used as effective market monitoring tools in the interim, until a more comprehensive approach for overseeing energy markets is developed.

In addition, GAO is suggesting that the Congress may wish to convene public hearings to review FERC's authorizing legislation and determine, in consultation with FERC Commissioners, whether FERC's authorities need to be revised in light of the changing energy markets. The Congress may also want to consider providing FERC with the appropriate range of authorities to levy civil penalties against market participants that engage in anticompetitive behavior and violate market rules.

## FERC Faces Significant Human Capital and Organizational Structure Challenges to Effectively Regulate and Oversee Competitive Energy Markets

FERC does not currently have enough staff with the skills and knowledge of competitive energy markets to effectively regulate and oversee these industries. FERC's employees were mostly recruited and trained for cost-of-service regulation, and the agency has not yet conducted the training and hiring necessary to adapt its workforce to a competitive market environment. FERC has been providing its current staff with increased training opportunities to enhance their knowledge of energy markets. For example, the Office of Markets, Tariffs and Rates doubled its training budget from 2000 to 2001. Despite these efforts, the general feeling among

FERC staff responsible for regulating and overseeing energy markets is that they still need additional, focused training on how energy markets work. Over 80 percent of the staff in the Office of Markets, Tariffs and Rates and the related sections of the Office of the General Counsel who responded to GAO's survey said that they needed more training in market functions and market structures.

Moreover, successfully recruiting staff at the mid- and upper-levels who already have knowledge and experience with competitive markets is critical to FERC's efforts to quickly adapt its workforce. However, FERC has had limited success with hiring these types of employees. According to FERC, the salary differentials between government positions and those in the private sector have made it difficult for the agency to attract highly skilled and knowledgeable professionals away from the private sector. For example, FERC has advertised an "Energy Industry Analyst—(Energy Trader)" position at the GS-15, step 10, level—which currently pays about $120,000—three different times with little success in finding a qualified candidate.

In addition, over one-quarter of FERC's employees will be eligible to retire by 2005, creating an opportunity for FERC to refocus its workforce competencies to those more geared toward regulating and overseeing competitive markets. However, this large-scale retirement will also create a dearth of institutional knowledge, because FERC will continue to perform some traditional cost-of-service regulatory work as the industries transition to competitive markets, and for some time it will continue to need highly qualified and experienced staff to perform these functions.

Nonetheless, FERC has not taken full advantage of the personnel flexibilities and tools available to federal agencies to help it address recruitment and employee retention challenges. Although FERC has used recruitment bonuses, retention allowances, tuition reimbursement, and alternative work schedules, it has not yet used other available tools, such as special pay rates, to help it address its human capital challenges.

FERC's efforts to address its human capital issues have also been hampered by its lack of a strategic human capital management plan. FERC has not yet undertaken a systematic strategic human capital planning process to identify the specific staff competencies it needs and develop the strategies that it will use to meet these needs. For example, FERC has not completed a detailed assessment and plan that will help the agency address its potential loss of leadership continuity, institutional knowledge, and expertise from the impending retirement of many of its employees.

Furthermore, FERC's market oversight function currently is dispersed across various parts of the agency. This organizational structure makes it more difficult for this function to receive the priority and attention that is needed to bring about fundamental change. FERC's recently announced plans to create a new Office of Market Oversight and Investigation, which will focus on analyzing and monitoring energy markets, may address this issue. For example, this new office is expected to report directly to the Chairman, thereby elevating the attention of the market oversight function within the agency. However, many details about the office and how it will carry out its responsibilities have not yet been determined.

To address its serious human capital challenges, GAO is recommending that the Chairman, FERC, in the short term, identify and formally assess the personnel tools, flexibilities, and strategies available to federal agencies to recruit and retain employees. The Chairman should also develop an action plan to identify and target additional training and development opportunities for current staff involved or potentially involved in carrying out FERC's market oversight functions.

In the longer term, GAO recommends that the Chairman, FERC, develop a comprehensive strategic human capital management plan to guide FERC's efforts to recruit, develop, train, and retain staff knowledgeable in regulating competitive markets. The plan should be linked to FERC's strategic and business plans.

## Agency Comments

We provided FERC with a draft of this report for review and comment. FERC agreed with GAO's conclusions, noting that its internal restructuring to support its new market oversight role has not kept pace with the speed of the energy industry's restructuring. The agency also commented that GAO's recommendations are consistent with its current direction. FERC said that its recent aggressive measures to address its key challenges are paying off. According to FERC, it has developed preliminary plans on how its new Office of Market Oversight and Investigation will work and the office will be operational in August 2002. FERC also said that it has recently made significant progress in hiring new employees and will explore all of the hiring flexibility available to it as it focuses on the skill sets needed for market oversight and investigation. FERC further said that it is reviewing existing budget allocations across the agency for additional resources and working to craft more focused training programs to build its staff's technical and leadership capabilities. FERC also agreed that its ability to develop, regulate, and oversee competitive energy markets could be enhanced with additional statutory authority, particularly for assessing

civil penalties, and with guidance from the Congress on the agency's appropriate role in these markets.

FERC's written comments are presented in appendix III. The comments contain an attachment summarizing the agency's current efforts to address issues of energy market oversight and human capital, and the need for additional legislative authority. FERC also provided a draft of the mission and function statement and organizational design for its new Office of Market Oversight and Investigation, and a list of the services and products the office is to provide. In addition, FERC provided us with some technical changes, which we incorporated into the report as appropriate.

# Chapter 1: Introduction

Consumers in various parts of the United States have recently experienced large fluctuations in energy prices as the natural gas and electric power industries undergo a major restructuring from regulated monopolies to competitive markets. The price spikes and supply disruptions that occurred in California and other parts of the West during 2000 and into 2001 are examples of the complications that have arisen for these industries and government regulatory agencies during this shift from regulated prices based on utilities' cost of providing service to market-based prices. The Federal Energy Regulatory Commission (FERC) has both prompted and reacted to the fundamental changes that the energy industries are undergoing. Established to regulate energy monopolies, FERC first encouraged the restructuring of the natural gas industry and today is doing the same for electricity. The price spikes in California and elsewhere have fueled debate about the wisdom of restructuring these industries and have drawn wider attention than ever before to FERC and its ability to carry out its legislative responsibilities for ensuring that natural gas and electricity prices are just and reasonable. In response to these concerns, the Congress is currently debating comprehensive energy legislation.

## FERC Is the Principal Federal Agency Regulating and Overseeing the Natural Gas and Electricity Industries

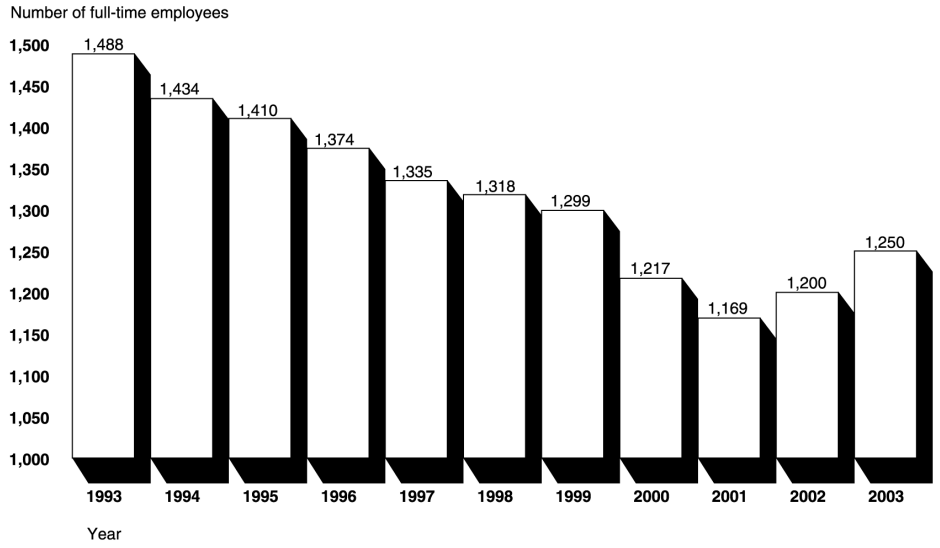
The natural gas and electricity industries perform three primary functions in delivering energy to consumers: (1) producing the basic energy commodity, (2) transporting the commodity through pipelines or over power lines, and (3) distributing the commodity to the final consumer. A range of federal, state, and local entities regulate different aspects of these functions. While generation siting, intrastate transportation, and retail sales are generally regulated by state or local entities, wholesale sales and interstate transportation generally fall under federal regulation, primarily by FERC. Under federal law, FERC is responsible for regulating the terms, conditions, and rates for the interstate transportation and sale for resale of natural gas and electricity. FERC is charged with ensuring that the terms, conditions, and rates are just and reasonable.

FERC was established in 1977 as a successor to the Federal Power Commission and is an independent regulatory agency. In addition to regulating and overseeing the interstate transmission and interstate wholesale sales of natural gas and electricity, FERC regulates the interstate transmission of oil by pipeline; licenses and inspects private, municipal, and state hydroelectric projects; and approves site choices as well as decisions to abandon interstate pipelines and related facilities no longer in use.

## FERC's Resources and Organizational Structure

FERC's estimated budget for fiscal year 2002 is about $192 million and provides funding for 1,200 staff years.[1] For fiscal year 2003, FERC has requested a budget of about $200 million and 1,250 staff years. While FERC has requested an increase for fiscal year 2003, its staffing levels have generally decreased over the last decade. For example, the 1,250 staff years requested for next fiscal year are 238 fewer than FERC had in fiscal year 1993 (see fig. 1). According to FERC managers, these staff reductions have occurred while the agency's workload has increased in both volume and complexity. Although the Congress sets FERC's budget, FERC recovers the full cost of operations through annual charges and filing fees assessed on the industries it regulates.

**Figure 1: FERC Staff Years, 1993-2003**




Note: 1993-2001 staff years are actual figures. The 2002 and 2003 figures are estimates based on the budget requests for those years.

Source: GAO's analysis of FERC budget data.

Five Commissioners, each appointed to a 5-year term by the President, and confirmed by the Senate, lead FERC. The President designates one of the five Commissioners as the Chair, who also serves as the administrative head of the agency and directs its staff. FERC's staff are currently

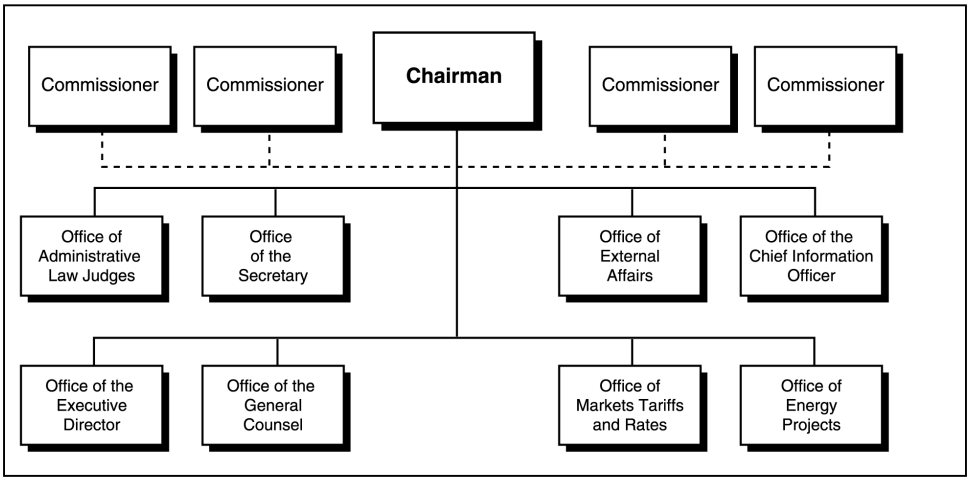
[1] Staff resources are measured in this report in terms of full-time-equivalent staff years.

organized around the agency's two major program or responsibility areas—energy markets and energy projects—with their supporting administrative and management functions. About 35 percent of FERC's staff focus on energy markets. These staff are predominantly located in the Office of Markets, Tariffs and Rates (OMTR) and the Office of the General Counsel. OMTR was created in 1998 to integrate the agency's regulation of the electric, natural gas, and oil pipeline industries. It plays a lead role in monitoring, promoting, and maintaining competitive natural gas and electricity markets, while regulating and overseeing the terms and conditions for energy transactions that continue to be regulated on the traditional cost-of-service basis. The Office of the General Counsel provides legal services and is responsible for the legal phases of the Commission's activities.

Forty percent of FERC's staff focus on energy projects, an area that includes the physical infrastructure of pipelines, dams, and related facilities. These staff are primarily located in the Office of the General Counsel and the Office of Energy Projects. The Office of Energy Projects authorizes nonfederal hydroelectric projects and ensures that dams under its jurisdiction are properly constructed, operated, and maintained. This office also certifies the construction and operation of natural gas pipelines and approves the abandonment of pipelines no longer being used. In addition, the office reviews hydropower and natural gas projects to ensure their compliance with environmental laws.

The remaining 25 percent of FERC's staff are located mostly in administrative and management support offices. These offices are responsible for the agency's planning, budgeting, human capital, information technology, financial management, and related processes. (See fig. 2.)

**Figure 2: FERC's Organization**




Source: FERC.

## FERC's Legislative Authorities for Natural Gas Regulation

Natural gas companies were initially locally franchised monopolies, many of which manufactured natural gas locally from coal. With the discovery of large natural gas reserves in the Southwest in the early 1900s, large interstate pipeline companies soon became a major sector of the natural gas industry, which nonetheless retained strong features of a natural monopoly.[2] In 1938, the Congress passed the Natural Gas Act, which gave the Federal Power Commission (and now FERC) jurisdiction over interstate transportation and sales for resale of natural gas. The act also gave the agency jurisdiction over new construction and abandonment of natural gas pipelines and related facilities.

Under this regulatory scheme, producers located natural gas reserves, drilled wells, gathered the gas, and put it in marketable condition for sale to interstate pipeline companies. After purchasing the natural gas, pipeline companies generally transported and sold the gas to local distribution companies for final sale and distribution to the ultimate consumers, such as homeowners. The interstate pipeline companies also sold some natural gas directly to consumers. FERC regulated the pipeline companies' terms, conditions, and rates for interstate transportation and sale for resale of the natural gas to ensure that they were just and reasonable. State and local

[2] A natural monopoly is a company that becomes the only supplier of a product or service because the nature of that product or service makes a single supplier more efficient than competing ones.

authorities generally set the transportation rates that the local distribution companies charged consumers. FERC and the state and local governments generally set rates on the basis of the companies' cost of providing these services, plus a reasonable rate of return on their investment.

A 1954 Supreme Court decision interpreted the Natural Gas Act as also requiring the Federal Power Commission to regulate the prices that producers charged to pipeline companies in the production area (wellhead) for the natural gas sold in interstate commerce.[3] However, comprehensive regulation of natural gas wellhead prices proved a failure. By the mid-1970s, severe gas shortages occurred as a result of artificially low prices. During cold winters, such as 1976-77, these shortages translated into delivery curtailments for many customers in the northern United States. Responding to these supply problems, the Congress passed the Natural Gas Policy Act of 1978 to begin the phased deregulation of wellhead prices. For the phase-out period, the act established a pricing scheme that encouraged increased natural gas production. Producer price deregulation was completed with the Natural Gas Wellhead Decontrol Act of 1989, which mandated that federal controls over natural gas producer prices end by 1993, when prices would be freely set in the marketplace.

In response to the Natural Gas Policy Act of 1978, FERC reduced regulation of natural gas supplies transported between intrastate and interstate pipeline systems. According to FERC, this breaking down of barriers between the intrastate and interstate markets accelerated a fundamental change in the natural gas industry, leading to marketing natural gas as a commodity distinct from its transportation. Additional changes have occurred in the restructured natural gas marketplace as a result of FERC regulatory action and other developments that are discussed later in this chapter.

## FERC's Legislative Authorities for Electricity Regulation

The Public Utility Holding Company Act of 1935 (PUHCA) and the Federal Power Act of 1935 established the basic framework for electric utility regulation for over 40 years.[4] PUHCA was enacted to eliminate unfair practices by large interstate electricity and natural gas holding companies, which evolved and dominated the industry in the 1910s and 1920s, by requiring federal control and regulation of these companies. In 1935, the

[3] *Phillips Petroleum v. Wisconsin*, 347 U.S. 672 (1954).

[4] PUHCA and the Federal Power Act were enacted as part of the Public Utility Act of 1935.

Federal Power Act created the Federal Power Commission, FERC's predecessor, and charged it with overseeing the rates, terms, and conditions of wholesale sales and transmission of electric energy in interstate commerce by public utilities.

This basic legislative framework for electricity went largely unchanged until 1978 when, primarily in response to the oil embargoes and higher energy prices of that time, the Congress passed laws to encourage the development of alternative sources of power and energy efficiency. The Public Utility Regulatory Policies Act of 1978 (PURPA) was enacted, in part, to augment electric utility generation with more efficiently produced electricity and conserve natural gas. The act required all utilities to buy electricity produced by nonutility power production facilities, known as "qualifying facilities." To facilitate entry of these entities into the electric generating market, the Congress exempted them from most regulation under the Federal Power Act and PUHCA, but they had to meet specific ownership and operating requirements.[5] More significantly, by opening wholesale power markets to nonutility producers of electricity, PURPA laid the groundwork for increased competition and a shift in the way that wholesale electricity rates were set. Before implementation of PURPA, wholesale interstate electricity prices were set by FERC on the basis of the seller's costs to generate and transmit the power—known as cost-of-service pricing. Subsequently, under PURPA, states set rates, pursuant to general regulations enacted by FERC, for nonutility qualifying facilities (QF) based on the buyer's "avoided" cost.[6] PURPA allowed these facilities to sell at avoided cost rates because, unlike the utilities, these QFs did not have a large enough market presence to be able to unduly influence prices.

Electricity regulation was significantly changed again with the passage of the Energy Policy Act of 1992 (EPACT). EPACT created a new category of power sellers called exempt wholesale generators (EWG) that are exempt

[5] Qualifying facilities fit into one of two categories: (1) cogenerator qualifying facilities, in which electric energy and another form of energy, such as heat or steam, are produced sequentially using the same fuel source and (2) small power producer qualifying facilities, in which at least 75 percent of energy source inputs are from renewable resources. Both cogenerating and small power producing qualifying facilities cannot have more than 50 percent of their equity interest held by an electric utility.

[6] Avoided costs are the energy and facilities costs that would have been incurred by the purchasing utility if that utility had to provide its own generating capacity. According to FERC, while it certifies and provides general avoided cost QF regulations, states set the QF rates that are often above market rates.

from FERC regulation under PUHCA. In addition, EPACT authorized FERC to require utilities, on a case-by-case basis, to allow competitors to use their transmission lines to sell wholesale electricity, setting the stage for the open-access transmission that exists today. Unlike QFs, these EWGs did not have to meet the same operating requirements, such as having to meet cogeneration and renewable fuel limitations. In addition, utilities are not required to purchase power from EWGs, as they are with QFs. By making it easier for nonutility generators to enter the wholesale market for electricity, EPACT not only expanded competition but also facilitated the shift in how electricity prices were set, since utilities could purchase electricity from EWGs at market-based rates, traditional cost-of-service prices, or a combination of both.

For the electric power industry, FERC does not have legislative authority over electricity generation, construction of transmission lines, intrastate transmission, or retail sales, all of which fall under state or local jurisdiction. FERC also has no direct authority over system reliability—that is, ensuring that consumers can obtain electricity from the system when, and in the amount, they want. This reliability has largely been the responsibility of electric utilities, and, since its creation in 1965, of the North American Electric Reliability Council and member organizations. Currently, an estimated 30 voluntary utility groups are working to improve reliability. Adherence to the standards established by these groups is largely voluntary and therefore subject to the willingness of the utilities to comply.

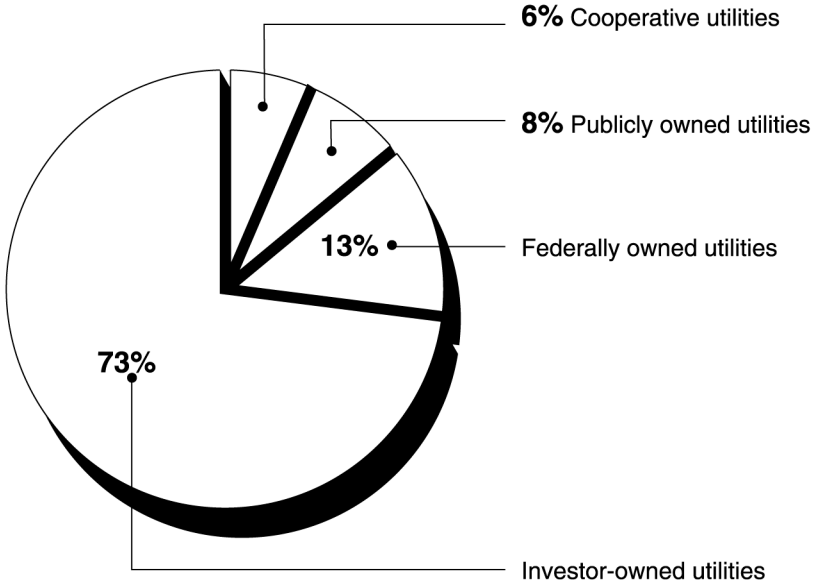
Furthermore, FERC's jurisdiction extends primarily to investor-owned utilities. FERC does not have jurisdiction over federally owned utilities,[7] publicly owned utilities, or most cooperatively owned utilities.[8] These

[7] Although the commission has jurisdiction under sections 211 and 212 of the Federal Power Act to order federally owned utilities to provide transmission in certain circumstances, this jurisdiction is limited. The commission also has limited authority to approve the Bonneville Power Administration's power and transmission rates and, by delegation from the Secretary of Energy, to review the rates charged by other power marketing administrations.

[8] There are nine federal electric utilities: Tennessee Valley Authority, Bonneville Power Administration, Western Area Power Administration, Southwestern Power Administration, Southeastern Power Administration, U.S. Army Corps of Engineers, U.S. Bureau of Reclamation, U.S. Bureau of Indian Affairs, and the International Water and Boundary Commission. Publicly owned utilities include municipal authorities, state authorities, public power districts, and irrigation districts. Cooperatively owned utilities are formed and owned by groups of residents, often in rural areas, and provide service mostly to members.

nonjurisdictional utilities own 27 percent of the U.S. electric transmission system (see fig. 3).

**Figure 3: Transmission Ownership in the United States**




Source: Energy Information Administration, *The Changing Structure of the Electric Power Industry 2000: An Update*, DOE/EIA-0562(00) (Washington, D.C.: October 2000).

## The Nation's Natural Gas and Electricity Industries Are Evolving

For almost a century, the energy industries were regulated as natural monopolies and the entry, prices, and profits of industry participants were controlled. However, during the last 25 years, because of technological and economic developments, these industries, along with other regulated industries such as telecommunications, airlines, and banking, have come under pressure to restructure and move toward greater reliance on competition rather than regulation. A key expectation for restructuring these industries from a regulated environment to competition-based markets was that it would result in improved efficiencies that, in turn, would lead to lower costs and ultimately lower prices for consumers. About two decades ago, the natural gas industry began restructuring. Currently, the focus is on the electricity industry.

## The Natural Gas Industry Has Substantially Restructured

The U.S. natural gas industry has evolved from a collection of regulated monopolies to a national system of producers; pipeline, storage, and local distribution companies; marketers; and consumers. In the past two decades since the Congress passed the Natural Gas Policy Act of 1978 to deregulate federal controls over wellhead prices, FERC has issued orders to encourage further competition in the industry. The result of these orders is that the natural gas industry's restructuring is several years ahead of that of the electricity industry.

FERC issued a series of orders during the 1980s and early 1990s to address what it believed was the biggest obstacle to competitive natural gas markets: the inability of natural gas users to gain access through the pipeline systems to competitive natural gas suppliers. These orders—the most notable of which were Orders 436 and 636—opened pipeline transportation to natural gas producers, suppliers, and users on equal terms and eventually resulted in interstate pipeline companies relinquishing their traditional merchant function. FERC issued Order 436 in 1985 to institute open-access, nondiscriminatory pipeline transportation. As a result, natural gas users could buy directly from natural gas merchants in the production area and ship that gas via the interstate pipelines. The pipeline companies could still make bundled sales of the natural gas and its transportation and storage to local distribution companies. Order 636, which was issued in 1992, required the pipeline companies to completely separate or "unbundle" their transportation, storage, and sales services. As a result, natural gas as a commodity was decoupled from gas transportation. Pipeline companies were required to treat other parties wishing to use the pipeline to transport natural gas the same as they would their own affiliated sales services, if they continued to have any. Order 636 also allowed shippers to release to other shippers unneeded pipeline transportation capacity, on either a temporary or a permanent basis, leading to the creation of a secondary capacity market designed to compete with the primary pipeline market.

As a result of this restructuring, producers sell natural gas to a variety of consumers, as well as to brokers/traders and resellers of natural gas. With the removal of federal price controls, producers' prices are determined in the marketplace. In addition, natural gas that is ultimately sold to consumers moves via the pipelines under a variety of contractual arrangements. Natural gas may be sold under contract or on the spot market, where an owner auctions a package of natural gas at a specific location for the price prevailing at that time and place. Buyers and sellers arrange for pipeline capacity to transport their natural gas to market. The purchaser pays the pipeline company for transportation and may also

contract for ancillary services, such as storage, en route. In some transactions, pipeline companies deliver natural gas to customers located directly along the pipeline right-of-way or near enough to a customer-owned pipeline. In other cases, natural gas is delivered to a local distribution company from the pipeline drop-off point, often referred to as the "city gate." The local distribution company operates an intrastate utility regulated by the state public utility commission that delivers natural gas from the city gate to residential, commercial, and industrial users along its route. For residential users, the local distribution company usually purchases the natural gas for resale to them. For commercial and industrial users, the local distribution company is usually delivering natural gas that the users have purchased directly from producers. However, generally speaking, commercial and industrial customers may also choose to buy natural gas from the local distribution company.

For competitive markets, the wholesale price of natural gas sold in interstate commerce is generally determined by the marketplace, subject to FERC's review to ensure that the rates are just and reasonable. For pipelines without competition, FERC sets the rates using the traditional cost-of-service regulatory format.

Natural gas pricing is becoming increasingly complex. One outgrowth of FERC's orders was the creation of new market centers to provide central pipeline interconnections where individuals and companies could come together to buy and sell natural gas. Today, natural gas prices are set at dozens of distribution "hubs" and at 16 city gates. For example, spot-market prices are set for the Henry Hub, a distribution center for natural gas, in Louisiana. In 1990, futures contracts for natural gas delivered at the Henry Hub were first traded on the New York Mercantile Exchange (NYMEX).[9] Since then, NYMEX has created contracts for swapping natural gas at other hubs with gas priced at the Henry Hub. Options contracts are

[9] A futures contract is a risk management tool used in agricultural, metal, and energy commodities markets designed to manage the risk of price changes.

traded on the price spread of Henry Hub gas between different delivery dates.[10]

Another development is the natural gas industry's increasing convergence with the electricity industry. As restructuring of the electricity industry takes place and natural gas has become a major fuel for generating electricity, electric power producers are buying interests in natural gas reserves and/or pipelines as a way to ensure gas supplies for electricity generation. In addition, natural gas producers, pipeline companies, and marketers are also buying interests in the electricity industry, such as in electric power generating plants. The growing complexity and intertwining of these industries further complicates the regulation and oversight of these markets.

## The Electricity Industry Is Changing Significantly

When the Federal Power Act was enacted in 1935, the fundamental structure of the electricity industry was based on "vertically integrated" electric utilities, which were single entities that owned generation, transmission, and distribution facilities and sold electricity as part of a "bundled" service to wholesale and retail customers within their geographic area. Most electric utilities built their own power plants and transmission systems, entering into interconnection arrangements with neighboring utilities. Because the utilities operated as monopolies, wholesale and retail electricity pricing was regulated. Rates were derived from a utility's costs plus a fair rate of return on the utility's investment.

As previously described, this industry arrangement of tightly regulated, vertically integrated monopolies and cost-of-service pricing continued relatively unaffected until the late 1970s when the enactment of PURPA began the transition to a more competitive format in which generators of electricity compete for customers and prices are established by the market. In the 1970s, rapid price increases in some parts of the country and significant technological changes in power generation led the Congress to pass PURPA, which requires utilities to purchase power from

[10] Options contracts are unilateral contracts that give buyers and sellers the right to buy or sell a specified quantity of a commodity at a specific price within a specified period of time, regardless of the market price of that commodity. On publicly regulated exchanges such as NYMEX, buyers and sellers are revealed once the transaction is complete. This is different from sales made in nonregulated forums, such as "over-the-counter" or in Internet markets, where the parties are known only to one another or to Internet-service subscribers and the market's operators. These over-the-counter prices (but not the buyers and sellers) are aggregated and reported the next day in the energy trade press.

qualifying facilities and to sell them backup power. As nontraditional power producers, such as qualifying facilities, began to compete in electricity markets, FERC encouraged these new entities by authorizing market-based rates for their electric power sales on a case-by-case basis.

The Energy Policy Act of 1992 authorized FERC to require utilities, on a case-by-case basis, to provide other wholesale buyers and sellers access to their transmission lines and created exempt wholesale generators to further compete with the utilities. FERC began to require utilities to open access to their transmission lines as a condition of approving utility mergers or market-based rates for their power sales. Since the late 1980s, FERC has approved more than 850 applications to sell power competitively in wholesale markets.

In April 1996, FERC issued Orders 888 and 889, opening the transmission systems of public utilities to all qualified wholesale buyers and sellers of electricity. Commonly known as the "open access rule," Order 888 required that transmission line owners offer other transmission users point-to-point and network transmission services under comparable terms and conditions that they provide for themselves. The vertically integrated nature of utilities in the past had not allowed independent power suppliers equal access to transmission systems. By limiting the extent to which independent power suppliers could provide service to electricity customers, growth of competitive power generation markets had been hindered. Order 888 also required that utilities "functionally unbundle" their generation and transmission businesses to prevent favoritism and discriminatory practices in providing transmission services, such as not allowing competitors equal access to transmission lines. This was accomplished by requiring utilities to separate their transmission service functions from other business activities. Order 888 also encouraged utilities to form independent system operators (ISO),[11] to which they could transfer operating control (but not ownership) of their transmission facilities. This could be one solution to the unbundling requirement

[11] An ISO is an entity encouraged by FERC to manage the transmission system as the electric industry in the United States is restructured. An ISO is to control the power system or grid without special interest, and is to own no generation, transmission or load. Therefore, the ISO is intended to run the system fairly, for the benefit of all market participants.

contained in the order. Since Order 888 was issued, six ISOs have been formed and are now operating.[12]

To effectively ensure nondiscriminatory access to the transmission system, up-to-date information about transmission must be unrestricted and public to all transmission users. To meet this need, FERC issued Order 889 requiring all investor-owned utilities to participate in the Open Access Same-Time Information System (OASIS). OASIS is an interactive Internet-based database containing information on available transmission capacity, capacity reservations, and transmission prices. By providing timely access to all qualified users regarding transmission market information, the goal of OASIS was to facilitate the functioning of competitive electricity markets.

In December 1999, FERC issued Order 2000, which asked all transmission-owning utilities, including nonpublic utilities, to voluntarily place their transmission facilities under the control of an appropriate regional transmission organization (RTO). ISOs created under Order 888 would be supplanted by larger RTOs covering the entire nation. FERC's thinking underlying RTOs is that the nation's transmission systems should be brought under regional control in order to eliminate the remaining discriminatory practices in use, better meet the increasing demands placed on the transmission system, improve management of system congestion and reliability, and achieve fully competitive wholesale power markets. Order 2000 does not specifically require RTO participation; however, if a utility opts not to join an RTO, it is required to prove why doing so would harm it.

Since issuing Order 2000, FERC has taken a more aggressive stance on developing RTOs. For example, on July 12, 2001, FERC issued several orders requiring utilities to enter into discussions to form four large RTOs covering the continental United States. FERC subsequently issued an order on November 7, 2001, that reiterated FERC's goals and process for

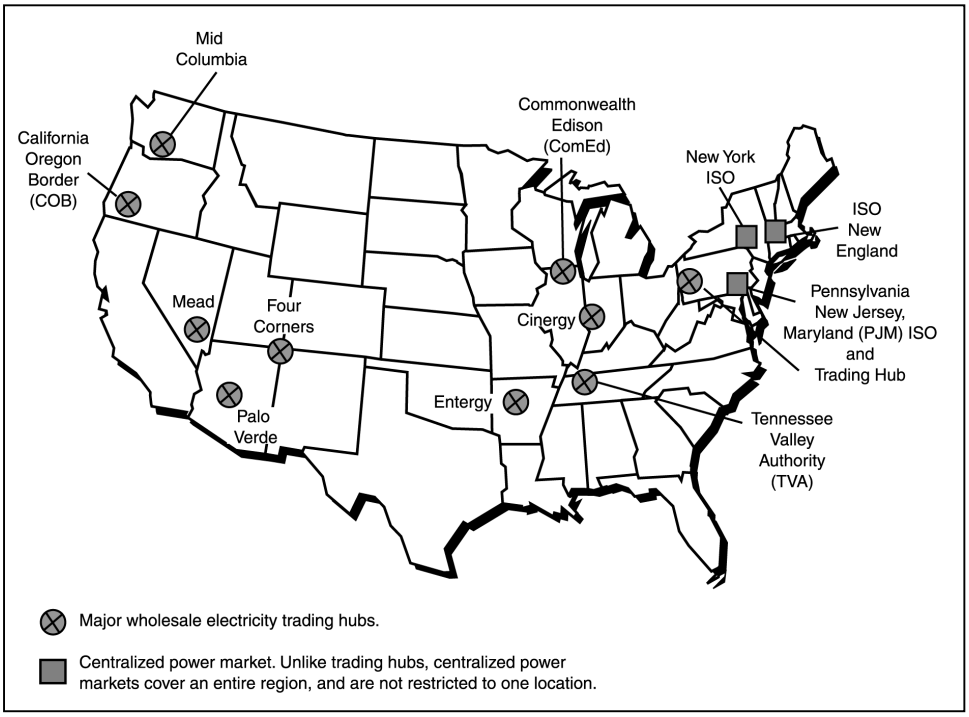
[12] These ISOs are California ISO; ISO New England; Midwest ISO; New York ISO; Pennsylvania, New Jersey, Maryland (PJM) ISO; and Electric Reliability Council of Texas (ERCOT) ISO. FERC approved the Midwest ISO as the first regional transmission organization in December 2001. ERCOT established an ISO in 1996 to satisfy the requirements of the Public Utility Commission of Texas for deregulating the wholesale electricity market in the state. The wholesale market in the ERCOT region is basically isolated from other U.S. markets because its power grid or transmission system has only minor connections to other U.S. transmission systems. FERC has limited jurisdiction over the region because the ERCOT market is essentially intrastate.

creating RTOs. FERC approved the formation of the first RTO—to include the Midwest ISO—on December 20, 2001. This RTO will operate in some 20 states, stretching from New Mexico to the Canadian province of Manitoba. FERC also encouraged another group, the Alliance Companies, to explore joining the Midwest RTO, potentially expanding its scope even further. To address state and industry concerns regarding the merits of forming RTOs, FERC commissioned a study to examine their potential economic costs and benefits. This study, released on February 26, 2002, found that substantial economic benefits, from $1 billion to $10 billion per year, could result from instituting RTOs. However, the study found only minor differences in savings between larger and smaller RTOs.

FERC is also developing a notice of proposed rulemaking to provide a standardized market design for all electric transmission providers. In October 2001, FERC held workshops to discuss core issues related to RTO development, including market monitoring, reliability standards, and market design and structure. FERC subsequently held technical conferences relating to market design for wholesale electric power markets, as well as how responsibility for performing wholesale market functions would be allocated within an RTO region.

With the restructuring that has taken place and FERC's approval of market-based rates for electricity sales, the industry has experienced a significant change in the way power is sold across state lines. Four ISOs—California; Pennsylvania, New Jersey, Maryland; New York; and New England—are currently operating centralized power markets where electricity suppliers submit bids to sell power in regional markets. In these markets, the ISO evaluates the bids and selects the most economical bid to meet energy demand in the region. Another recent development outside of these markets is electricity trading hubs. A hub is a location on the power grid representing a delivery point where power is sold and ownership changes hands. Although each control area on the power grid could become a trading hub, only a few hubs account for the bulk of power trading. Development of electricity futures contracts at NYMEX and the Chicago Board of Trade has contributed to the emergence of these hubs. (See fig. 4 for these major hubs and centralized power markets.)

**Figure 4: Major Wholesale Electricity Trading Hubs and Centralized Power Markets**




Note: Power trading also occurs at locations not indicated on the map. NYMEX has established electricity futures contracts for the Cinergy, COB, Entergy, Palo Verde, and PJM trading hubs. The Chicago Board of Trade has established electricity futures contracts for the ComEd and TVA trading hubs.

Source: Energy Information Administration, *The Changing Structure of the Electric Power Industry 2000: An Update*, DOE/EIA-0562(00) (Washington, D.C.: October 2000).

Finally, development of Internet-based trading systems, such as EnronOnline, Dynegy*direct*, and Intercontinental Exchange, has further changed the way in which electric power is sold. These systems provide a platform for both physical energy (electricity and natural gas products) and energy derivatives to be bought and sold.[13]

Table 1 describes the major events and milestones that have occurred during the restructuring of the natural gas and electricity industries.

[13] Derivatives are financial instruments based on the value of one or more underlying stocks, bonds, commodities, or other items, such as contracts for future natural gas sale or distribution. Derivatives involve the trading of rights or obligations based on the underlying product but do not directly transfer property.

**Table 1: Major Events and Milestones in Restructuring the Natural Gas and Electricity Industries**

| Event | Natural gas industry | Electric industry |
|---|---|---|
| Early steps toward competition | Some large consumers in the interstate market started purchasing gas and pipeline transportation separately—mid 1970s. | Utilities file FERC rates with "up to" cost based formulas—early 1980s.<br>Public Utility Regulatory Policies Act mandates purchases from qualifying facilities—1978. |
| Exceptions to cost-of-services rates | Natural Gas Policy Act gradually removes some natural gas price ceilings—1978. | PURPA exempted qualifying facilities from cost-of-service regulation.<br>FERC recognizes competitive bidding for new capacity—1988. |
| Transmission access proposed to dampen anticompetitive behavior and encourage competition | FERC encourages pipelines to provide open-access transportation—1985. | FERC initiates transmission access conditions for market-priced power sales—1990.<br>Energy Policy Act authorizes FERC to order transmission access to encourage competition—1992. |
| Standards to mitigate monopoly control in transmission announced | Order 636 issued in 1992:<br>• Comparable transmission and storage open-access required.<br>• Functional unbundling of product and transportation sales required.<br>• Pipeline companies allowed to make market-priced gas sales through affiliates.<br>• Firm transportation customers get flexible receipt and delivery points. | Orders 888 and 889 issued in 1996:<br>• Nondiscriminatory, comparable open access required.<br>• Functional unbundling generation and transmission businesses.<br>• Investor-owned utilities required to participate in OASIS.<br>Order 2000 issued in 1999:<br>• Transmission owning utilities encouraged to place transmission facilities under the control of RTO. |
| Access to information to support market functions | Trade press publishes spot gas prices—1989.<br>FERC mandates individual pipeline electronic bulletin boards—1992.<br>FERC mandates standardized Internet communication protocol—1997. | Market-based pricing includes requirements for electronic bulletin boards—1992.<br>Energy Policy Act requires public capacity reporting—1992.<br>FERC orders OASIS—1996. |
| Market characteristics evolve | Company consolidation starts—mid 1980s.<br>Product markets active; prices transparent—1987.<br>Gas marketing evolves as an unregulated industry—1987.<br>NYMEX futures contract for Henry Hub gas—1990.<br>Robust market centers/hubs for physical trade—1993.<br>Futures markets mature with large consumer access to transportation available in most states—1994.<br>Internet trading of gas and transmission rights—1999. | Company consolidation starts—late 1980s.<br>Spot and forward markets still largely restricted to utilities—1995.<br>Neither transportation nor product prices are transparent yet—1995.<br>Development of a futures market hindered by a lack of a standardized spot market for benchmarking. New entrants are trying to find/produce niches. Innovators hope to combine gas and electric market instruments for added value—1995. |

Source: Adapted by GAO from Energy Information Administration, *Restructuring Energy Industries: Lessons from Natural Gas*, Natural Gas Monthly (Washington, D.C.: May 1997).

## Objectives, Scope, and Methodology

The Chairman of the Senate Committee on Governmental Affairs and Senator Carnahan asked us to determine how FERC has revised its approach to regulating and overseeing the natural gas and electricity industries in response to the transition to more competitive markets and identify the major management challenges that FERC faces to effectively regulate and oversee these competitive markets.

To address both these objectives, we reviewed pertinent documents and obtained information and views from a wide range of FERC officials and stakeholder representatives. We obtained information and views from FERC and stakeholder representatives through a variety of means, including interviews and surveys. We interviewed the Chairman of FERC and the other current Commissioners, as well as three former Commissioners/Chairs who served at FERC within the past 5 years. In OMTR, we interviewed all the managers at the division head level and above, including the director and deputy director of the office. We also interviewed the group managers of the office's Divisions of Market Development and Market Information. For the Office of the General Counsel, we interviewed the general counsel, deputy general counsel, and the lead counsels for the Market Oversight and Enforcement section and the Markets, Tariffs, and Rates section. The two sections directed by these lead councils advise OMTR and the Commissioners on regulation of the natural gas and electric industries. In addition, we interviewed the team leaders and various members of the joint OMTR and Office of the General Counsel teams that FERC formed in 2000 to review the nation's wholesale electricity (bulk power) markets. Furthermore, we interviewed the deputy director for FERC's Office of Strategy and Organizational Management and the agency's director for human resources management.

In addition to our interviews, we conducted a survey of the staff in OMTR, and staff in the Office of the General Counsel's sections for Markets, Tariffs, and Rates and Market Oversight and Enforcement, up to and including those at the division or section director level. The survey was conducted using a self-administered electronic questionnaire posted on the World Wide Web. We sent e-mail notifications to 384 FERC staff beginning on December 14, 2001. We then sent each employee who was surveyed a unique password by e-mail to ensure that only members of the target population could participate in our survey. We closed the survey on February 8, 2002, having received a total of 271 responses, for an overall response rate of 71 percent. A copy of this survey with the quantitative results can be found in appendix II.

The practical difficulties of conducting surveys may introduce errors into the results. Although we administered our survey to all known members of the population of employees, and thus our results are not subject to sampling error, nonresponse to the entire survey or individual questions can introduce a similar type of variability or bias into our results—to the extent that those not responding differ from those who do respond in how they would have answered our survey questions. We took steps in the design, data collection, and analysis phases of our survey to minimize population coverage, measurement, and data-processing errors, such as checking our population lists against known totals of employees, pretesting and expert review of questionnaire questions, and follow-up with those not reachable at original addresses or otherwise not immediately responding.

We also spoke with representatives of a wide range of FERC stakeholders, including the National Energy Marketers Association, the National Association of Regulatory Utility Commissioners, the Electric Power Supply Association, and the American Public Gas Association. In addition, we interviewed representatives, primarily from the market monitoring units, of the New York ISO, ISO New England, the California ISO, and PJM ISO. We did not interview representatives of the Midwest ISO because it had just begun operations toward the end of our review. Furthermore, we visited three major energy trading companies to discuss the information they use in making energy trades.

We also surveyed the chairs of the state regulatory commissions or boards from 48 states and the District of Columbia via e-mail to ask them for comments, from their states' perspective, on FERC's regulation and oversight of the natural gas and electricity industries.[14] The initial e-mail was sent on November 15, 2001, with a follow-up reminder sent on December 10, 2001. The final deadline for submissions was December 21, 2001. We received responses from 30 of the 49 state commissions or boards surveyed.

In addition, we reviewed laws and regulations pertaining to FERC's responsibilities for regulating and overseeing the natural gas and electricity industries. We reviewed pertinent FERC documents, including annual reports; budget requests; strategic and annual performance plans;

[14] We did not survey Hawaii, where FERC does not have regulatory jurisdiction, nor did we survey Nebraska, where no state regulatory body exists.

orders; case filings; studies; reports; human capital analyses; speeches and congressional testimony by FERC Chairmen, Commissioners, and other officials; and staff research papers. We also reviewed appropriate documents from outside sources, including the Department of Energy's Energy Information Administration, the North American Electric Reliability Council, the Congressional Research Service, ISOs, academia, and other natural gas and electricity industry experts. Furthermore, we drew on our prior work in the areas of electricity, natural gas, and human capital management.

We conducted our work from June 2001 through April 2002 in accordance with generally accepted government auditing standards.

# Chapter 2: FERC Has Not Yet Defined and Implemented an Effective Approach to Monitor Competitive Energy Markets

FERC has recognized, since the early 1990s, that it needs to change its approach for regulating and overseeing the natural gas and electricity industries in response to their evolution from regulated monopolies to competitive markets. However, FERC has struggled to define and implement a comprehensive regulatory and oversight approach, and its efforts to monitor these markets, to date, have been incomplete or of limited effectiveness. Moreover, the agency's outdated legislative framework and frequent leadership changes over the last few years have contributed to further limiting its progress in developing and implementing an effective approach.

## FERC Recognizes That It Needs a New Approach for Competitive Energy Markets

For nearly a decade, FERC has recognized that it needs a new approach for regulating and overseeing the emerging competitive energy markets. With the evolution to market-based rates for natural gas and electricity, FERC has concluded that its approach to ensuring just and reasonable prices needs to change: from one of reviewing individual companies' rate requests and supporting cost data to one of proactively monitoring energy markets to ensure that they are working well to produce competitive prices. From 1994 to the present, the need for this change has been a reoccurring theme in a variety of key FERC documents, such as its annual budget requests, strategic plans, and performance reports.

For example, we found that as early as February 1994, in its fiscal year 1995 budget request to the Congress, FERC stated that the centerpiece of its strategy for the natural gas and electricity industries was to encourage competitive market processes wherever appropriate. In this document FERC noted that while competitive forces could benefit energy customers all over the country, harnessing the benefits of competition without allowing abuses of market power required many regulatory innovations, including many new approaches to oversight. FERC concluded that the electricity industry would see significant changes under the Energy Policy Act of 1992, largely through increasing competition among electric power producers and more open transmission access, and that these changes would inevitably require new long-term policy development as well.

The need for a new regulatory and oversight approach has been reiterated by FERC throughout the last several years in a variety of other key documents, such as the following:

- In its fiscal year 1996 budget request, dated February 1995, FERC stated that its goal was to find ways to regulate natural gas and electric utilities effectively in order to protect consumers while working with competitive commodity markets. FERC stated that it expected to continue the shift in emphasis away from its traditional routine casework of reviewing companies' rate filings and more toward monitoring and compliance. It stated that increasingly, its approach to regulation would be to monitor the industries it regulates and act only when there is a clear need to do so.

- In its first strategic plan for fiscal years 1997 through 2002, issued in September 1997, FERC again stated that, at the most basic level, the agency was moving away from a traditional command and control approach of setting individual companies' rates to economic regulation.[1] The plan anticipated the need to respond to the evolving natural gas and electric power industries with increased flexibility and speed. FERC placed particular importance on the convergence of the natural gas and electric industries and on the need to coordinate with other federal agencies and states. The plan also noted that as the need for regulation in the industries changed, the agency must change to respond in "real time" to these needs.

- In its State of the Agency report for fiscal year 2000,[2] FERC noted that like all regulatory agencies, it faced uncertainty about its resources and its future mission. The report concluded that to ensure consumer confidence in competitive energy markets, FERC must adapt the way it does business to address the real-time needs of market participants and changing market dynamics, while still maintaining the integrity of its regulatory functions.

- In its most recent budget request for fiscal year 2003, dated February 2002, FERC again stated that it needs a much stronger ability to recognize and respond to problems in the markets. FERC further stated that it needs to recognize problems when or before they happen and craft solutions

[1] The Government Performance and Results Act of 1993 required almost all federal agencies to, among other things, develop strategic plans covering a period of at least 5 years. These strategic plans were to include the agency's mission statement, long-term general goals, and the strategies that the agencies will use to achieve these goals. Agencies were to submit their first strategic plans to the Office of Management and Budget and the Congress by September 30, 1997.

[2] Federal Energy Regulatory Commission, *First Annual State of the Agency Report*, *Fiscal Year 2000* (Washington, D.C.: October 2000). FERC has not issued similar reports for subsequent fiscal years.

quickly and also be able to police individual behavior in markets much more effectively than in the past.

## FERC Has Struggled to Define and Implement a New Approach

Despite its long-standing awareness of the need for a new regulatory approach, FERC has struggled to define the specific strategies, information, processes, and activities that it will use to regulate and oversee competitive energy markets. Various planning and reengineering initiatives that FERC has recently undertaken have not been successful in defining and implementing a comprehensive approach for these markets. Moreover, while California's energy problems in 2000 provided a "wake up call" for the agency and the impetus for a greater focus on market oversight functions, they also delayed the agency's efforts to establish an effective market oversight program by diverting substantial management attention and resources.

### FERC's Strategic Planning Process Has Not Provided the Goals, Strategies, and Milestones to Implement a New Approach

FERC's strategic planning process helped lay the groundwork for the agency to begin revising its regulatory and oversight approach. However, the process has not produced the specific goals, strategies, and milestones to effectively make the change. FERC first issued its strategic plan in September 1997, and has since revised it twice, once in September 2000 and again in September 2001. The overall direction of the strategic or general goals and objectives set out for natural gas and electricity in these versions has essentially remained the same. Although the 2001 version of the plan provides greater and more explicit focus on FERC's oversight and monitoring of the markets than earlier versions, it still lacks key details on how the strategic goals and objectives will be accomplished and how progress in achieving them will be assessed.

#### FERC Has Been Slow to Explicitly Incorporate Energy Market Oversight into Its Mission Statement

An agency's statement of its mission is a critical element of its strategic plan. It is intended to bring the agency into focus, explain why the agency exists, and tell what it does. FERC's mission statement has only very recently explicitly recognized oversight of the energy industries as an important part of its mission. The mission statement in FERC's 1997 version of its strategic plan essentially stated that the agency regulates the energy industries to ensure that the rates, terms, and conditions of service for the industries are just and reasonable. The 2000 version of the mission statement provided a more direct focus on markets by stating that the agency, in regulating key interstate aspects of the energy industries, chooses regulatory approaches that foster competitive markets whenever possible and ensures access to reliable service at a reasonable price. However, it did not explicitly mention oversight of the industries or markets. The 2001 version does not refer to competitive markets but

instead states that FERC's mission is to regulate and oversee the energy industries in the economic and environmental interest of the American public. (See table 2.) According to FERC, "[t]he California crisis showed that the need for good oversight and investigation is not only important but also far more urgent than we (or most others) had fully understood."

**Table 2: FERC's Statement of Its Mission in the 1997, 2000, and 2001 Versions of Its Strategic Plan**

| Version | Mission statement |
|---|---|
| 1997 | The Commission regulates, in the public interest, essential aspects of four of the nation's critical energy industries: electric power transmission and sales for resale, natural gas transportation and sales for resale, oil pipeline transportation, and nonfederal hydroelectric power. The Commission ensures that the rates, terms, and conditions of service for the electric power, natural gas, and oil industries are just and reasonable and not unduly discriminatory or preferential, and that licensing, administration, and safety actions for the hydropower industry and other approvals for all four industries are consistent with the public interest. |
| 2000 | The Commission regulates key interstate aspects of the electric power, natural gas, oil pipeline and hydroelectric industries. The Commission chooses regulatory approaches that foster competitive markets whenever possible, assures access to reliable service at a reasonable price, and gives full and fair consideration to environmental and community impacts in assessing the public interest of energy projects. |
| 2001 | The Federal Energy Regulatory Commission regulates and oversees energy industries in the economic and environmental interest of the American public. |

## FERC's Strategic Goals and Objectives Have Focused More on Market Development Than Market Oversight

The goals and objectives that FERC has set out in the initial versions of its strategic plan have focused more on efforts to foster the development of competitive markets than on their oversight. For example, the 1997 version of the plan contained no strategic goals and one strategic objective specifically addressing oversight of market rules and behavior. (See app. I for FERC's principal strategic goals and objectives relating to energy markets.) That objective—for constraining market power—states that market participants will have confidence that natural gas markets, electric markets, and all transportation services are working efficiently and fairly and that market participants are not subject to abuses of market power. The plan stated that FERC would monitor the electric utilities and assess whether they can exercise market power that could adversely affect wholesale electric prices. In addition, FERC would respond appropriately to market power issues in the context of market-based pricing and in reviewing the effects of mergers on competition. However, the plan offered no details about how FERC would monitor energy markets beyond

its approval of individual companies to sell electricity at market-based rates and review of proposed mergers of energy companies.

Similarly, FERC's 2000 version of its strategic plan contained one goal for energy markets. That goal—to benefit consumers by providing a fair, open, and efficient regulatory foundation for competition—had four objectives. As with the 1997 version of the plan, one objective was to constrain market power. In addition, monitoring energy markets was included as a subobjective under the general objective to nurture competitive market institutions. FERC stated that it must be able to monitor markets so that it can follow events, such as significant price spikes, and react appropriately. To fulfill its market monitoring strategy, the plan stated that FERC would (1) develop up-to-date, flexible information systems, (2) use investigations and audits as valuable market monitoring tools, and (3) begin to publish an annual report on the state of the markets. According to the plan, to constrain market power, FERC would detect and respond to all forms of market power and use enforcement and litigation as necessary to remedy anticompetitive behavior. The plan also stated that market monitoring could help FERC detect potential or actual market power abuse and that FERC would try to limit operations of existing and emerging entities that may possess market power. Although the 2000 version provides more results-oriented goals and objectives and a greater elaboration of strategies than the 1997 version, it does not provide the details and measures to allow the agency and the Congress to assess whether the goals and objectives were achieved and the strategies were effective.

Only recently, in its 2001 revision, has FERC increased the strategic plan's emphasis on market oversight and improved its description of the strategies that will be used to achieve the goals and objectives.[3] The Chairman of FERC told us that making competitive energy markets work well depends on (1) an adequate delivery or transmission infrastructure to ensure that sufficient supplies of energy are available to create an environment where competition can succeed, (2) a market structure and market rules that ensure competition, and (3) effective oversight to identify market structures and rules that do not work well and market participants that engage in anticompetitive actions. The Chairman said that when he arrived at FERC in the summer of 2001, he found that FERC

[3] FERC's 2001 revision was not a complete update of the strategic plan document. Instead, new strategic goals and objectives were developed and made available on FERC's Internet Web site, and the agency's fiscal year 2003 budget request provides information on the new strategic goals and objectives and the strategies to achieve them.

had been working on the first two items—the infrastructure and the market structure and rules—but was doing little in the way of effective market oversight. As a result, he revised the strategic plan to provide a balanced approach that covers all three factors.

While the 2001 version provides more information than earlier versions on the strategies to be used to achieve the agency's goals and objectives, the plan still provides few details on how FERC will work with market participants to accomplish the goals and objectives. The plan also does not have quantifiable outcome measures that can be used to assess FERC's progress in achieving the goals and objectives over the period of the plan. For example, to protect consumers, the plan states that FERC will detect abuses of market power quickly. To do this, FERC will pay close attention to complaints as it receives them and will also develop its analytical capabilities. However, there is no information on what new actions FERC will take to pay close attention to the complaints or what actions it will take to develop its analytical capabilities. There are also no quantifiable outcome measures to evaluate FERC's success in achieving this goal and its related objectives.

## FERC's Major Reengineering Project Did Not Address Fundamental Oversight Issues

In December 1997, FERC launched a major management review and reengineering project, referred to as "FERC First." According to FERC documents, the project was undertaken as a result of the 1997 strategic planning process, during which the agency concluded that it would have to move away from traditional command and control approaches and move toward economic regulation of the evolving energy markets. The project was to assess the external influences affecting the agency's operations, as well as the adequacy of the agency's processes, employee development practices, information technology infrastructure, communication, and other business practices. According to FERC, the project's costs from February 2, 1998, to March 31, 2000, totaled $20.1 million, including about $7.5 million in agency personnel costs and about $7.7 million for the two principal consulting firms that it used.

FERC First resulted in a number of changes, including the following:

- a new organizational structure for the agency, including the creation of the Office of Markets, Tariffs and Rates (OMTR) to focus on energy markets;
- a formal process for strategic planning and management with a focus on energy markets, energy projects, and the management services needed to support them;

- the combination of responsibilities and personnel for natural gas and electricity to reflect the convergence under way in these industries;
- the modification of work processes to minimize hand-offs from one person to another and one office to another, reduce the number of reviews, and integrate them with information technology;
- the increased use of teaming of staff, within and across groups, to perform the agency's work; and
- new criteria for selecting and training managers that emphasized leadership qualities over technical expertise.

Although well intentioned, FERC First is generally considered by most FERC employees that we contacted to have failed in achieving its objectives. For example, 74 percent of the employees responding to our survey believed that FERC First had improved the agency's ability to effectively monitor or regulate energy markets to little or no extent. In contrast, 4 percent of those responding said that it improved FERC's ability to a great or very great extent. Furthermore, 80 percent of them believed that FERC First had improved their ability to perform their job duties to little or no extent. In contrast, 6 percent of those responding said it improved their ability to a great or very great extent. While many employees that we contacted told us that overall FERC First was a failure, several stated that it was a "disaster." Common concerns cited by employees included (1) the project took too long and diverted too many agency resources for the limited number of changes that resulted and (2) it made the agency less effective rather than more effective.

Moreover, FERC First did not bring about the fundamental changes needed to implement a new regulatory and oversight approach for competitive energy markets. For example, although FERC First established OMTR to give more priority to developing and monitoring competitive energy markets, OMTR has had difficulty defining the specific strategies, information, processes, and activities that it will use to oversee these markets. In October 1999, the director of OMTR said "[w]e have to decide what we want to do with markets, how much resources we want to devote to the different views, what information will we need from outside the building to do our job, what type of IT [information technology] hardware and software will we need to do that, what type of skill sets of people will we need." In August 2000, when FERC hired a director for OMTR's Division of Energy Markets, these details had still not been determined. At that time, the California energy problem had occurred and,

according to FERC officials, the Markets Division devoted most of its attention and resources to responding to the California problem over the next year.

California's energy problems in 2000 forcefully demonstrated what could result when markets do not work as intended. Ironically, while the California problem was, in the words of several FERC officials, a "wake up call" for the agency, it also delayed the agency's efforts to establish an effective market oversight program by diverting substantial management attention and resources away from this task. The California problem was shortly followed by the bankruptcy of the Enron Corporation, again causing OMTR and its Markets Division staff to become involved in addressing concerns related to this new crisis.

Consequently, although it has been almost 4 years since the creation of OMTR was announced, FERC has not been able to devote the time and attention needed to resolve the fundamental issues relating to its market oversight function. FERC currently has two task forces working to determine its information needs for market oversight and is still in the process of developing a working definition for market power. According to industry experts that we spoke to, FERC's lack of progress in clearly defining its market oversight function has eroded their confidence in the ability of the agency to provide the level of regulation and oversight needed for the emerging energy markets.

## FERC's Market Oversight Initiatives Have Been Incomplete or Ineffective

FERC has initiated several actions to enhance its oversight of competitive energy markets; however, most of these actions have been incomplete or limited in their effectiveness. Recent FERC oversight initiatives have included (1) creating a Market Observation Resource (MOR) room to collate information on energy markets in a user-friendly format, (2) conducting a series of studies to assess the state of the wholesale electricity (bulk power) markets, and (3) requiring independent system operators (ISO) to establish market monitoring units. However, to date, the MOR room and the bulk power studies have had limited results beyond increasing FERC staff's knowledge about competitive markets, and the ISOs' market monitoring units provide only limited coverage of the nation's energy markets.

## The Market Observation Resource Room Has Yet to Fulfill Its Potential

To more effectively monitor increasingly competitive energy markets, in mid-2001 FERC established the MOR room at its Washington, D.C., headquarters. This room, which was patterned after market operation centers or rooms of ISOs and major energy trading companies, uses computers and various software packages to make large amounts of data on natural gas and electricity markets available in a useable format. FERC created the MOR room to serve as a central data source, an education center for the agency's staff, and a regulatory and oversight tool. Since establishing the room, FERC has been acquiring and testing market reporting services and software programs while building an easily retrievable database. However, FERC has not yet been able to use the MOR room to its full regulatory and oversight potential because (1) the data available through the facility are mainly limited to those that are available free of charge, (2) additional data needs for the agency have not yet been determined, and (3) an overall regulatory approach has not been developed. Instead, the MOR room serves principally as a technical learning resource for data analysts in OMTR and as a convenient market information resource for the agency's staff.

### The MOR Room Is Becoming a Central Data Source but Currently Lacks Data on Critical Aspects of Energy Markets

While the MOR room is becoming a central data source for FERC, the information that it contains is limited for effective monitoring and oversight of energy markets. Currently, the MOR room provides FERC staff with both commercial and proprietary information services, ranging from Bloomberg Professional Energy service to the PJM E-Data for the Pennsylvania, New Jersey, Maryland (PJM) ISO's mid-Atlantic electricity markets. Electricity market data provided by these services include prices on the spot market and for futures contracts, plant outage information, business news, and historical data for trend analysis. For example, FERC subscribes to FriedWire, which tracks supply, demand, price, and transmission data. Natural gas market data include spot and futures prices and market commentary, storage levels, imports and exports, and supply/demand statistics. The MOR room receives detailed and timely reports about energy prices on regulated exchanges, such as natural gas futures contracts for the Henry Hub traded on the New York Mercantile Exchange (NYMEX). In addition, several weather services are available to monitor changing conditions nationwide, as weather and climate affect energy supply and demand in both spot and futures markets.

However, the MOR data do not yet include detailed information about energy prices on "exempt" commercial markets, such as the UBS-Warburg,

Dynegy*direct*, and Intercontinental Exchange (ICE).[4] Although FERC staff can view natural gas and electricity prices free of charge from the UBS-Warburg, Dynegy*direct*, and ICE Web sites to track general market behavior, FERC would need to become a paying subscriber for these services to routinely obtain the names and other details of the parties trading in these exempt markets. This information would be necessary, for example, if FERC needed to identify instances of power companies or traders exercising excessive market power. Similarly, the MOR room does not receive timely information about over-the-counter markets—where informal dealings that are not federally regulated occur. Some over-the-counter sales in which two parties buy and sell natural gas contracts privately, and offsetting trades known as "swaps," are aggregated and reported the next day in the energy trade press; others are aggregated from a NYMEX report. In commenting on a draft of our report, FERC said it may not have jurisdictions over these trades and, therefore, may not have access to this information. However, we believe that unless FERC staff can regularly track these reports and then compare them to simultaneous behaviors by participants in other markets, it would be difficult to identify instances of market manipulation.

## FERC Is Identifying Additional Market Information Needs, but Its Progress Has Been Slow

Since the summer of 2001, FERC has established two teams—the Review of Information Collection Team and the Comprehensive Information Assessment Team—to take stock of the agency's current and future market information needs. These teams were tasked to identify information that FERC currently collects and additional information that it might need. To date, neither team has completed its work, although their initial findings highlight some of the difficulties FERC faces in obtaining additional data.

For example, the Review of Information Collection Team is seeking to learn precisely what data the agency now collects. As of January 31, 2002, the team has determined that FERC has more than 50 active information collection and reporting requirements for the energy companies it regulates and oversees, and that FERC receives about 33,600 industry

[4] UBS Warburg and Dynegy*direct* are "bilateral" electronic traders that, like the once dominant market-maker Enron, always take one side of a buy or sell transaction. ICE is a "multilateral" electronic trader, which invites and matches buy and sell orders for other customers.

responses annually.[5] According to the team's supervisor, the team's effort has not been considered a high priority within FERC. He predicts that it may be several more months until the team completes its detailed assessments of the data, and more than a year until proposed regulations to collect these data can be developed.

Similarly, the Comprehensive Information Assessment Team is identifying the information that the agency will need in order to more effectively regulate and oversee emerging energy markets. The team has already identified about 80 information "needs" for FERC. A critical challenge, according to FERC officials, is to transform this list of needs into a practical set of data requirements. To do this, FERC must first decide how aggressively it will be monitoring energy markets; however, this decision has yet to be made by the agency.

A key feature of FERC's data collection plans is to have other organizations such as federal and state agencies, commercial sources, trade associations, and regional transmission organizations provide FERC access to much of the information needed to monitor energy markets. However, at this point, it is unclear how FERC will ensure that these data are accurate and reliable. Nor is it clear how FERC and its data sources will standardize the data and pay for their collection. Another issue to be addressed is how FERC will integrate these new data requirements with the data already available in the MOR room.

FERC plans to review the results of the two information teams later this spring, and then hold meetings and workshops with market participants. More than likely, any new data identified as important to FERC's market monitoring efforts will not be formally required from market participants until 2003. Moreover, as required by the Office of Management and Budget, FERC will have to offset any new information requests from the industry by eliminating existing ones. One FERC official told us the agency can fulfill this requirement by eliminating certain filings required under the cost-of-service regulation that may no longer be relevant.

[5] In 2000, FERC set a goal to reduce paper filings by 90 percent within 2 years, although currently only four of its forms must be filed electronically and another four may be at the filer's discretion.

## The MOR Room's Use as a Regulatory and Oversight Tool Is Largely Undecided

When first created, the MOR room was expected to showcase "the important function of monitoring and assessing the energy market." However, because FERC has not determined how it will regulate and oversee competitive energy markets, the MOR room's use, as a regulatory and oversight tool, remains largely undecided and untapped. For example, FERC officials that we spoke with were not aware of any enforcement actions that had been initiated through use of the MOR room or any market problems detected elsewhere in the agency that had been confirmed or refuted with MOR room data. Currently, the MOR room serves principally as a technical learning resource for data analysts in OMTR and as a convenient resource for the agency staff who prepare the daily *Energy Market Report* and monthly *Energy Markets Review*. These publications keep FERC Commissioners and senior staff aware of news and market events, such as energy trading companies' financial problems, power-plant outages, and energy supply and price trends.

Nonetheless, one energy data analyst who helped design and now operates the MOR room told us that it is likely to become an integral part of FERC's proposed new Office of Market Oversight and Investigation, which is intended to concentrate FERC's market-monitoring resources in one work group (see ch. 3 for more detailed information on this new office). But just how the MOR room will assist the new office has yet to be decided. The extent to which the MOR room can contribute to FERC's regulation and oversight of energy markets also depends on how FERC decides to divide market monitoring responsibilities with other entities, such as the regional transmission organizations. These decisions also have yet to be made.

## FERC's Bulk Power Studies Were Not an Effective Oversight Tool

As another oversight initiative, on July 26, 2000, FERC issued an order directing its staff to undertake an investigation of the nation's wholesale electricity (bulk power) markets and report the results by November 1, 2000. The investigation was ordered because the nation's bulk power markets were in different stages of transition, and some areas of the country had experienced extreme price fluctuations. By reviewing technical or operational factors, federal or state regulatory prohibitions or rules, market or behavioral rules, and other factors affecting the reliability or competitive pricing of electricity in these markets, the investigation was to determine whether the nation's bulk power markets were working efficiently.

FERC assigned a study team for each of the five regions covering the continental United States: the northeast, southeast, midwest, west, and Electric Reliability Council of Texas (ERCOT) regions.[6] The teams took about 2 to 3 months to conduct the investigations and write their reports. They reviewed publicly available data and reports and, with the exception of the ERCOT study, obtained input from market participants and others, such as ISOs and state public utility commissions, and also requested specific market information, such as market participants' data on bids during the period.

The final reports from each team generally included data on electricity supply and demand, transmission systems, the regulatory and institutional environment, market design, prices during the summer of 2000, factors affecting these prices, and issues relating to inefficiencies or improvements needed in the markets' design or operations.[7] In addition, the reports generally provided policy options for the Commission, such as potential ways to correct the conditions that led to price spikes, improve market rules, or improve access to the transmission systems to increase competition.

Instead of serving as an effective oversight tool, however, these studies mostly provided FERC staff an opportunity to learn about electricity markets. The study teams were not allocated much time and lacked the expertise and data to provide the depth of investigation needed. According to many of the study team leaders that we talked to, when the studies started the teams knew little about the markets they were examining and they had only about 3 months to complete the work and prepare the reports. Most of the team leaders and members said that more time, more data, and/or staff with different skills or expertise would have been needed to perform in-depth studies. The types of staff skills or expertise cited as being needed included more knowledge of economics and market

[6] ERCOT established an independent system operator in 1996 to satisfy the requirements of the Public Utility Commission of Texas for deregulating the wholesale electricity market in the state. The wholesale market in the ERCOT region is basically isolated from other U.S. markets because its power grid or transmission system has only minor connections to other U.S. transmission systems. FERC has limited jurisdiction over the region because the ERCOT market is essentially intrastate.

[7] On February 1, 2001, FERC staff issued a report on the bulk power markets in the Northwest during November and December 2000. This report, which was an extension of the November 1, 2000, report on the west region, focused on the rapid increase in electric power prices during these 2 months.

operations and skills in compiling and analyzing large amounts of data. According to FERC management, it became clear during these investigations, that the agency did not have enough staff who could analyze the relevant market information. This shortage related both to skills in finding, manipulating, and analyzing large data sets and to economic and other expertise in focusing information analyses on critical market questions and interpreting the results.

Most of the study team leaders and members we spoke to indicated that periodic bulk power studies could be a useful oversight tool for FERC if they were done in more depth. While the studies provide some important baseline data on these markets, FERC has no plans to update the bulk power studies. As an alternative, it proposes to conduct periodic assessments of market performance, supplemented by other reports. In its fiscal year 2003 budget request to the Congress, FERC stated that it plans to publish semiannual seasonal market assessments of major regional markets for both natural gas and electric power. These assessments are to report on a series of objective measurements for each market, such as basic supply-demand balances and the degree of market concentration. They are to also report on the markets' experience with current market rules and on major vulnerabilities, if any, that might threaten to disrupt the markets in the future. FERC plans to supplement these assessments with other periodic reports, including bulletins that analyze fast-breaking market developments. According to FERC, information will come from its MOR room, industry contacts, and close coordination with the market monitoring units (MMU) of the yet-to-be formed regional transmission organizations. These supplemental reports will also include analyses of apparent market anomalies—for example, instances of high prices seen in unexpected places or apparently abnormal volumes of trading transactions.

However, it is likely to be some time before FERC can fully implement these plans. FERC anticipates that the market performance measurements to be used for the seasonal assessments will be finalized during 2003. In addition, the MMUs of the regional transmission organizations (RTO) may not be operational for up to 3 years. FERC is depending on these units to provide much of the data and analysis that it will use for the seasonal assessments and the other reports. As a result, until these new analyses are available, it appears that FERC will not be conducting detailed evaluations of the markets.

## ISOs' Market Monitoring Units Provide Oversight Support but Do Not Cover All the Markets

The formation of ISOs provided FERC additional market monitoring support for certain energy markets. Under Order 888, FERC gave public utilities the option to create ISOs to independently operate their electric transmission systems and thereby meet the requirement for separating, or unbundling, interstate wholesale power service from transmission. In approving their formation and use, FERC required ISOs to, among other things, establish a market monitoring unit. MMUs are required to develop market monitoring plans, which must be approved by FERC, and periodically report on their monitoring activities.

Although MMUs play an important market oversight function, their coverage of the nation's electricity markets is limited. Because FERC made the formation of ISOs voluntary, most of the nation is not covered by an ISO, and therefore is not subject to monitoring by an MMU. Currently, FERC has approved five ISOs that cover only parts of the United States. These include the New York ISO; ISO New England; and PJM ISO in the Northeast and the California ISO in the West. The Midwest ISO, covering at least parts of several states in the Midwest from Canada to Kentucky, began selling transmission service in February 2002 but had not yet established an MMU. There are no ISOs operating in the Southeast, the West outside of California, and much of the Midwest. Therefore, market monitoring responsibilities for these areas fall to FERC.

Moreover, the MMUs we contacted—California, New York, New England, and PJM—primarily focused their monitoring activities on reviewing market transactions for abuses of market power by market participants and for market design problems within their particular markets. According to these MMU officials, the strength and value of an MMU's market monitoring activity is in its ability to review minute-by-minute transactions looking for anomalies in market behavior. They believe that FERC's market monitoring role is better suited to evaluating overall market performance at the national or regional level. According to an official from PJM's MMU, FERC has the luxury to look at the overall market picture from a policy perspective, whereas MMUs are down in the trenches dealing with detailed information. The MMUs told us that FERC should leave the responsibility for monitoring daily market transactions to MMUs and concentrate on the larger policy issues.

Finally, MMUs employ different strategies and techniques in reviewing market transactions, which may limit the usefulness of the information they provide to FERC. FERC requires that the MMUs independently and objectively monitor and report on the markets operated by ISOs and that the MMUs' market monitoring plans be designed to ensure competition,

prevent any undue influence by market participants, and correct any design flaws. FERC allows MMUs flexibility with respect to the scope of their monitoring and how it is carried out. As a result, the four MMUs we contacted varied in their size, operations, and focus. For example, the MMUs of the New York and PJM ISOs take different avenues to identifying and mitigating or correcting market power abuse.[8]

Because of these differences in operation, the information provided to FERC by MMUs may not be comparable and may make it significantly more difficult for the agency to develop a comprehensive nationwide analysis of energy markets. This issue will become more important as FERC approves the creation of the larger RTOs under Order 2000 to replace ISOs. FERC is currently developing a standardized design for the RTOs' market monitoring function and the types of market monitoring information that they will be required to provide the agency.

## FERC's Outdated Legislative Framework and Frequent Leadership Changes Have Contributed to Its Difficulty in Developing a New Regulatory Approach

FERC's legislative framework of regulatory and oversight authorities has remained essentially the same, even as the energy industries have undergone substantial restructuring. As a result, FERC is struggling to develop and implement a new regulatory and oversight approach for these emerging markets because it is using authorities that were designed when the industries operated as regulated monopolies and their rates were based on the cost of service. In recent years, FERC has also been subjected to frequent changes in its leadership. These changes have caused the agency to experience substantial shifts in policy direction and priorities, which may have directly affected its progress in developing a new regulatory approach.

[8] The PJM ISO uses the presence of congestion on the transmission lines to determine that, during the period of congestion, competition is reduced and market-based bids or offerings of electricity for sale should be replaced by cost-based bids. In contrast, the New York ISO looks directly at bidding behavior and resulting price effects to determine if market power exists that warrants mitigation.

## Transition to Competitive Markets Has Been Occurring Without Substantial Changes to FERC's Regulatory and Oversight Authorities

To some extent, FERC's lack of specific legislative authority for competitive energy markets, and especially for electricity markets, may have delayed development of its new regulatory approach. This is because FERC derives much of its legislative authority, for electricity, from mandates that were enacted almost 75 years ago, when the industry was structured as a regulated monopoly and rates were based on the cost of service. As a result, FERC has had to force fit changes that it would like to accomplish within the framework of these outdated statutes. This has led market participants to contest FERC's legal authority to direct change in these industries.

For example, in Order 888, FERC invoked its authority under section 206 of the Federal Power Act when it ordered "functional unbundling" of wholesale generation and transmission services, imposed a similar open access requirement on unbundled retail transmissions in interstate commerce, and declined to extend the open access requirement to the transmission component of bundled retail sales. Market participants, however, challenged FERC's authority to order these changes. In response to a number of review petitions, in 2001, the District of Columbia Circuit Court upheld most of FERC's jurisdiction to issue Order 888.[9] That decision was appealed in the Supreme Court. Last year the Court agreed to hear argument on two issues: FERC's jurisdiction over unbundled retail transmissions and its refusal to assert jurisdiction over bundled retail transmissions.[10] The Supreme Court agreed with FERC on both issues. Specifically, the Court stated that because the Federal Power Act unambiguously gives FERC jurisdiction over the "transmission of electric energy in interstate commerce," without regard to whether the transmissions are sold to a reseller or directly to a consumer, FERC's exercise of this power is valid. Similarly, FERC's decision not to regulate bundled retail transmissions was accepted as a statutorily permissible policy choice by the Supreme Court.

FERC's efforts to guide or direct restructuring of the electricity industry without legislation explicitly mandating the change have also resulted in debate, within and outside the agency, about its specific authorities over these new competitive markets. In some instances, this uncertainty may have contributed to FERC's hesitation in clearly defining how it would apply its authorities to the emerging electricity markets. An example of

[9] *TAPS v. FERC*, 225 F.3d 667 (D.C. Cir. 2000).

[10] *New York v. FERC*, 535 U.S. 1 (2002).

this is FERC's recent attempts to create RTOs. Questions about FERC's authority to require the formation of RTOs led the agency to initially make participation in RTOs voluntary, as it had done in the past for ISOs. Despite outreach efforts to convince the industry about the advantages of participating in RTOs, FERC made little progress in getting RTOs formed. Although its legislative authorities did not change, FERC recently determined that it did have adequate authority to require RTO formation, and there was a significant policy shift within the agency to require participation in RTOs by the industry. Industry participants not joining an RTO now have to prove to FERC why doing so would harm them. Although the Chairman of FERC believes that the agency has the general authority to take this new course of action, he has stated that it would be helpful if the Congress gave FERC the explicit authority to create RTOs.

Moreover, some of FERC's legislative authorities with regard to refunds of excessive rates and penalties for violations of market rules may not be adequate for regulating in a competitive environment, where there is greater potential for market power abuse. Under its current legislative framework, FERC is limited by the extent to which it can order refunds, and it does not have adequate authority to levy meaningful penalties for market violations. As a result, it is difficult for FERC to curb and respond effectively and firmly to anticompetitive behavior, particularly for electricity markets. For example, under sections 205 and 206 of the Federal Power Act, FERC has the authority to review whether new or existing electricity rates filed with the agency are just and reasonable. If an existing rate is found to be unjust or unreasonable, FERC may set a new rate and may order a refund for the amount charged in excess of the just and reasonable rate. However, refunds may only be ordered for the period following the refund "effective" date. The earliest the refund effective date can be is 60 days after a complaint is filed with FERC or after a notice of Commission-initiated investigation is issued. As a result, this limitation provides no remedy for instances where market participants have charged unjust or unreasonable rates during the period before the refund effective date. In addition, under the Natural Gas Act, FERC is even more limited in ordering refunds than it is under the Federal Power Act. For example, under section 5 of the Natural Gas Act, FERC cannot set a refund effective date but can only change rates prospectively from the date that the Commission finds an existing rate to be unjust and unreasonable.

In addition, FERC does not have a meaningful range of penalties to levy against violators of energy market rules. The Federal Power Act provides FERC with the authority to assess civil penalties for violations of certain regulated activities but not for violation of the just and reasonable rate

requirement. For example, section 31(c) of the Federal Power Act authorizes penalties for violations relating to hydropower generation, and section 316A provides FERC with the authority to levy penalties for violations relating to the transmission of electricity and sales by exempt wholesale generators.[11] No section of the act allows FERC to levy monetary penalties against market participants who charge unjust or unreasonable rates for electricity. Although the Natural Gas Policy Act of 1978 gave FERC some authority to levy civil penalties, this authority applies only to a limited number of natural gas transactions in interstate commerce.

In today's competitive energy markets, the lack of adequate refund and penalty authorities may be a significant handicap to FERC's ability to fulfill its regulatory mandate because market participants have the opportunity to profit by millions of dollars within a very short time through exercising market power and engaging in other anticompetitive behavior. For example, in response to filings made after the recent electricity price spikes in California, FERC determined that it had no authority to order refunds for unjust and unreasonable rates charged prior to the refund effective date. If FERC does not have the authority to curb anticompetitive behavior by ordering refunds or levying meaningful penalties against market violators, the risk of engaging in this type of behavior for market participants is severely diminished. Many FERC officials that we spoke to believe that FERC's credibility as an effective regulator of competitive electricity markets is limited without the authority to levy meaningful penalties. They believe that industry participants do not perceive FERC as a forceful regulator because it does not have adequate "bite" to go after market abusers and therefore cannot deter future violations.

## FERC Has Experienced Frequent Leadership Changes as It Has Attempted to Develop a New Approach

Over the past 5 years, FERC has had four different Chairs. Such a high level of leadership turnover may have had a significant impact on the ability of the agency to develop a new regulatory approach for emerging energy markets because the Chair of the Commission also serves as the agency's leader and as the chief administrator of FERC's staff. The Chair, in effect, sets the agency's agenda and controls its strategic plan and outcomes.

[11] 16 U.S.C. 824j, 16 U.S.C. 824k, 16 U.S.C. 824l, 16 U.S.C. 824m.

Our reviews of high-performing public and private sector organizations have shown that fundamental changes in operations and culture can take years to achieve and usually require long-term commitment on the part of agency leaders. When agencies such as FERC experience a high level of turnover in their top leadership, their efforts to effect change are often hampered. For example, the Health Care Financing Administration, which administered the multibillion-dollar Medicare program, had 19 administrators or acting administrators in its 24 years of existence. We found that this high rate of leadership turnover was an inhibiting factor in the implementation of long-term Medicare initiatives and the pursuit of a consistent management strategy for this agency.[12]

Similarly, the lack of continuity in FERC's top leadership may have directly contributed to the agency's lack of progress in developing and implementing a new regulatory approach for competitive energy markets, especially over the last 5 years. Some senior FERC staff told us that the seemingly constant transition caused by recent changes in FERC leadership, coupled with the intense pressure created by the California energy crisis and the bankruptcy of the Enron Corporation, has resulted in a lack of consistent management and direction for the agency. Several agency officials told us that every new Chair brings a different direction to the agency and that when there is a change in the chairmanship, the progress made under a past Chair often becomes irrelevant as everyone's attention shifts to the new Chair's priorities and agenda. Consequently, steps taken to develop a new organizational structure or regulatory approach under a past Chair are often jettisoned, and the staff start the process all over again under the direction of the new leader.

## Conclusions

The longer FERC struggles to define and implement an effective approach for the emerging energy markets, the longer these markets will continue to develop and operate without adequate oversight and, potentially, without adequate regulation. At the current time, FERC is not adequately performing the oversight that is needed to ensure that the prices produced by these markets are just and reasonable and therefore, it is not fulfilling its regulatory mandate. While FERC has taken some tentative steps in the right direction, more decisive action must be taken to define and

[12] U.S. General Accounting Office, *Major Management Challenges and Program Risks: Department of Health and Human Services*, GAO-01-247 (Washington, D.C.: January 1, 2001).

implement an effective regulatory and oversight approach. To accomplish the mammoth undertaking posed by the rapidly evolving and increasingly complex energy markets, FERC will have to place the highest priority on developing its oversight function and devote significant management attention and adequate resources to this task.

FERC has not yet developed a detailed oversight approach for competitive energy markets. Market participants need this specificity if they are to view FERC as an effective market monitor and regulator. Although FERC has recently revised its strategic plan to place more emphasis on its oversight of competitive energy markets, the plan still lacks specifics about how the agency will monitor these markets. The revised plan does not include outcome measures for its goals and objectives so that the agency's progress in achieving them can be assessed. The plan also does not clearly and explicitly state how FERC will work with market participants to comprehensively oversee the markets. For example, it appears that FERC plans to rely on the RTOs' MMUs to serve as its frontline for monitoring wholesale electricity markets. The agency, however, has not yet set out expectations for how these units will monitor the markets and how FERC will evaluate their effectiveness.

Moreover, FERC needs to recognize that a new regulatory and oversight approach will require both interim and long-term measures. The agency cannot continue its current policy of waiting for the market structures to be fully in place before developing monitoring actions. For example, FERC does not have the luxury to wait for the RTO structures to be in place, which may take several more years, before detailed monitoring of the markets begins. As the California energy crisis has made adequately clear, FERC simply cannot let the markets continue to go unmonitored for this length of time. Nonetheless, FERC does not have an action plan for oversight of the markets for the interim period before the RTOs' market monitoring units are functioning and the agency can put a comprehensive market oversight approach into place.

Finally, FERC's difficulties in developing and implementing a comprehensive regulatory and oversight approach for competitive energy markets can be attributed, at least in part, to its attempts to help create and to regulate and oversee these markets without explicit direction and guidance from the Congress as to the agency's appropriate role in these markets. FERC has been attempting to design a regulatory and oversight approach for these markets around legal authorities, such as those for ordering refunds and assessing penalties, which were generally enacted when the natural gas and electric industries were subject to cost-of-service

regulation. As part of its current debate in formulating the Energy Policy Act of 2002, the Congress has started to review FERC's legislative framework.

## Recommendations for Executive Action

To help ensure that FERC can effectively carry out its responsibilities for overseeing interstate wholesale natural gas and electricity markets, we recommend that the Chairman, FERC, take the following actions:

- Update the agency's strategic plan to include outcome measures that can be used to assess how well FERC is doing in achieving its strategic goals and objectives for overseeing competitive energy markets. This plan should also include specific strategies for achieving the goals and objectives that set out explicitly how FERC will work with market participants to provide comprehensive oversight of the markets. Because of their significant role in FERC's oversight approach, the plan should set out clear expectations for how transmission organizations will monitor energy markets and how FERC will evaluate the effectiveness of their MMUs. These expectations should be made part of FERC's approval of these transmission organizations.

- Develop an action plan for overseeing energy markets, in particular for electricity, until the transmission organizations' market monitoring units become fully operational and FERC can implement a comprehensive oversight approach for these markets. In developing the action plan, FERC should examine how it can use the bulk power studies and the data sources currently available through the MOR room as more effective market monitoring tools.

## Matters for Congressional Consideration

To help ensure that FERC can effectively carry out its oversight role with respect to energy markets, the Congress may wish to convene public hearings to review FERC's authorizing legislation and determine, in consultation with FERC Commissioners, whether FERC's authorities need to be revised in light of the changing energy markets. In addition, to help FERC deter improper market behavior, the Congress may want to consider providing FERC with the appropriate range of authorities to levy civil penalties against market participants that engage in anticompetitive behavior and violate market rules.

## Agency Comments

In its written comments on a draft of this report, FERC agreed that it had not yet done all that it could to oversee energy markets. The agency stated that, despite a long-standing recognition that it needed to develop the

information, procedures, and staffing to oversee energy markets, it had not previously focused its efforts clearly enough to succeed. According to FERC, this situation is now changing with the launching, in January 2002, of the new Office of Market Oversight and Investigation to oversee and assess the fair and efficient operations of electric and natural gas markets. The new office, according to FERC, will be up and running in August 2002. FERC stated that the office's job will be to understand energy markets and risk management, measure market performance and analyze market data with an eye to recommending market improvements, investigating compliance violations, and, where necessary, pursuing enforcement actions. FERC also stated that the office will report to the Chairman and other Commissioners, bring together all of the staff devoted to oversight and enforcement in one place, and receive the resources it needs to restore and maintain the integrity of the nation's energy markets. FERC further stated that the agency has developed preliminary plans on how the office will work, including a draft mission and function statement, an organizational design, and a comprehensive list of the services and products the office will provide.

We are encouraged and hopeful that FERC's creation of this new office will provide the focus needed to succeed where prior efforts, as described in our report, have not. However, we do not believe that a reorganization alone will be enough to bring about the fundamental changes needed in FERC's regulation and oversight of energy markets. Sustained leadership and top management attention will be necessary to guide and direct the agency through these changes. Many details of the new office's operations are yet to be worked out, and FERC still needs to overcome significant challenges to provide the office with the information, tools, and staff with the skills and knowledge to effectively oversee competitive energy markets.

FERC also agreed with our conclusion that its ability to develop, regulate, and oversee competitive energy markets could be enhanced with new statutory authority and guidance from the Congress on the agency's appropriate role in these markets. FERC agreed that it has often struggled to find market solutions while operating under legislative authority designed for regulated monopolies with cost-of-service rates. The agency noted that additional statutory authority is needed, particularly in providing FERC with the ability to assess civil penalties for violations of the law or FERC rules. FERC further said that the Congress could strengthen the agency's ability to create competitive wholesale energy markets by clarifying the Commission's authority to order the formation of

RTOs. As pointed out in our report, FERC has currently approved the formation of only one RTO.

Separately from its written comments, FERC provided us with some technical changes, which we incorporated into the report where appropriate. FERC's written comments are presented in appendix III.

# Chapter 3: FERC Faces Significant Management Challenges to Effectively Monitor Competitive Energy Markets

As FERC develops a new regulatory approach to respond to the restructured energy industry, it will have to overcome significant human capital and organizational challenges. FERC's workforce, which was largely recruited and trained for cost-of-service regulation, currently lacks the knowledge and mix of skills needed to effectively regulate and oversee competitive markets. Although FERC has taken steps to train its current staff and recruit new staff, it has made limited progress in adapting its workforce to the new regulatory environment. In addition, FERC has not fully explored all the personnel tools and flexibilities—such as establishing special pay rates—that are available to federal agencies for responding to workforce recruitment and retention challenges. FERC also has not conducted systematic strategic human capital planning to recruit, develop, train, and retain the type of workforce that can effectively regulate and oversee competitive energy markets. Moreover, FERC's current organizational structure diffuses its market monitoring responsibilities and does not provide the focus and attention that this function needs in the changing regulatory environment.

## FERC Has Taken Some Steps to Address Its Human Capital Needs, but Significant Challenges Remain

FERC has been unable to adapt its workforce to meet the challenges of the new competitive markets. Its current staff skill mix is inadequate and training of current staff and recruitment of new staff have not yet occurred at a level that would alleviate gaps in the staff's skill mix. In addition, many experienced and highly trained FERC staff will soon be eligible for retirement and could depart from the agency over the next 3 years. While these retirements provide FERC the opportunity to bring in new staff to fill gaps in its skill mix, the departures will also result in the loss of traditional skills and knowledge that the agency continues to need. Although FERC management has been aware of these issues and has taken some steps to address them, its progress has been limited. Moreover, FERC has not fully explored the use of all the personnel tools and flexibilities available to federal agencies to help them attract, motivate, and retain employees, and FERC has not performed the systematic and comprehensive planning that is needed to resolve its human capital challenges.

### FERC Faces Daunting Human Capital Challenges

FERC's current workforce will need to undergo a substantial and rapid transformation if it is to effectively meet the challenges of regulating and overseeing competitive energy markets. Historically, FERC staff operated in a highly regulated environment, setting rates for wholesale electricity sales based on a utility's cost to provide the service. The competencies required to perform this task are markedly different from the

competencies needed to effectively monitor dynamic energy markets. For example, to perform cost-of-service rate setting, FERC traditionally employed staff with knowledge and skills in finance, economics, engineering, and the operations of regulated industries. However, to support its responsibilities for regulating and monitoring competitive markets, correcting anticompetitive situations, and promoting fair and open competition, the Commission needs employees with knowledge and skills in the collection and analysis of market data; information technology; and market operations, including expertise in market rules and structures, competitive pricing, commodity trading, and risk management. According to senior FERC officials, the agency lacks adequate numbers of staff with these competencies and has had trouble attracting and retaining such staff. Energy market participants and state regulators told us that they are also concerned that FERC staff do not have the depth of knowledge and understanding of competitive markets that are needed to effectively regulate and oversee the evolving energy industry. For example, one former FERC Commissioner now working in the energy industry said the skills of FERC staff have fallen behind those of the companies that they regulate. Additionally, many of the state regulatory bodies that we surveyed expressed a lack of confidence in FERC staff's ability to fully understand the complexities of the markets it regulates.

In an effort to increase its staff's knowledge of energy market issues, FERC has been providing additional training opportunities. For example, FERC more than doubled the training budget for the Office of Markets, Tariffs and Rates (OMTR) from fiscal year 2000 to fiscal year 2001 and has used contractors to provide staff training on market-related subjects, such as derivatives. Despite this increased emphasis on training, the general feeling among the staff that we surveyed in OMTR and the Office of the General Counsel is that additional, focused training is needed. Our survey found that over 80 percent of FERC employees responsible for regulating and overseeing energy markets expressed a need for more training in market functions and market structures—in particular, they need a better understanding of how financial markets interact with energy markets and of such issues as trading, hedging, derivatives, and financial instruments. In addition, over half of these staff stated that additional training in basic economic principles and definitions, economic theory and models, and regulatory theory would help them perform their duties (see table 3).

**Table 3: Percentage of FERC Staff Indicating That Additional Training Would Help Them Better Monitor and Regulate Energy Markets, by Type of Training**

| Type of training | Additional training would assist me | Already proficient in this area | Does not apply or no basis to judge |
|---|---|---|---|
| How financial markets interact with energy markets (including trading, hedging, derivatives, and financial instruments) | 86% | 3% | 11% |
| Market structures | 84 | 9 | 7 |
| Market functions | 81 | 12 | 7 |
| Economic theory/models | 60 | 25 | 16 |
| Regulatory theory | 55 | 40 | 6 |
| Basic economic principles/definitions | 52 | 39 | 9 |
| Statistical software packages | 41 | 7 | 52 |

Note: Some rows do not total 100 percent because of rounding.

Source: GAO's survey of FERC employees.

FERC has also tried to fill the gaps in its workforce skills by recruiting new employees. However, it has been largely unsuccessful in recruiting and retaining the highly skilled staff it needs. For example, over the last 2 years, FERC has tried to fill a total of 49 nonadministrative positions in OMTR. However, FERC was only able to fill 25, or 51 percent, of these 49 positions, and of the positions filled, the majority represented reassignments of employees within FERC. There were only 10 new hires from outside the agency. Most of these were at the GS-11 level or lower. Several higher level positions remained unfilled.

According to FERC officials and energy industry experts, the Commission is unable to recruit the qualified employees it needs mainly because of the significant difference between government pay scales and compensation in the private sector. Consequently, FERC has historically had trouble getting qualified individuals to apply for jobs and subsequently hiring them into key market regulation and oversight positions at the mid- and upper levels. For example, in fiscal year 2001, FERC advertised an "Energy Industry Analyst–(Energy Trader)" position at the GS-15, step 10, level, which is the highest pay grade and step level available under civil service rules and currently pays about $120,000. The position was first listed from October 31 to November 30, 2000, but garnered only three applicants meeting initial qualifications, and FERC hiring officials did not find any of these applicants suitable to meet the agency's needs. When the position was re-listed from December 11, 2000, to January 11, 2001, only one

qualified person applied, who was also considered unsuitable for the agency's needs. After listing the position a third time from January 22 to February 20, 2001, advertising heavily in key markets such as Houston, New York, and Washington, D.C., and accepting electronic applications, FERC received information from 16 qualified applicants. However, as of February 12, 2002, the position remained unfilled because, according to FERC's human resource staff, after the interview process the hiring officials determined that none of the interviewed applicants met the needs of the position. This example clearly illustrates the difficulty that FERC has had in hiring people with "real world" experience in competitive energy markets, particularly former energy traders.

To help address its recruitment challenges, FERC has started various initiatives to enhance entry-level recruitment. One such initiative is FERC's summer intern program, which began in fiscal year 2001. Of a total of 27 interns who participated in the program, 5 were offered permanent positions and 4 had accepted as of February 2002. FERC plans to expand participation in the program to 40 interns and increase to 12 the number of interns hired into permanent positions for fiscal year 2003. While these positions will help build a future FERC workforce, they do not address the immediate and compelling need that the agency has for experienced and trained market regulation and oversight staff at mid- and upper levels.

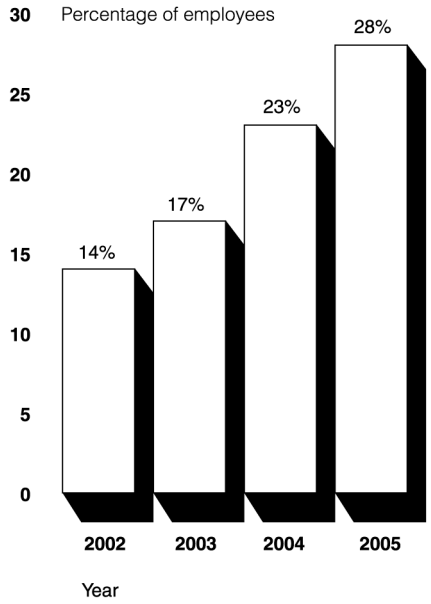
FERC is taking extra steps to retain its newly hired staff by helping them to more quickly become familiar with their duties and responsibilities and the agency's operations. Recently, FERC implemented a mentoring program designed to guide new employees in their career development and enable them to more quickly gain institutional knowledge from more experienced staff. Additionally, new employees in several offices participate in a series of orientation sessions, offered first by human resources staff and later by their program office. These sessions help new employees understand how FERC functions, what its regulatory priorities are, and what is expected of them.

FERC is also challenged in retaining its highly skilled and experienced employees. Although FERC has an overall low rate of attrition (an average of 7 percent per year since 1995), some managers said that key employees are leaving to join private sector energy firms. They said that FERC employees are attractive to the industry because of their knowledge of the regulatory process. In fiscal years 2000 and 2001, OMTR had 15 separations, 13 of which were in upper level positions; of these, 7 staff listed "taking a job in the private sector" as the reason for their resignation. Of the remaining six employees, three said that they were

relocating or transferring to other federal agencies, and three did not give a reason for leaving.

Another human capital challenge for FERC is the impending retirement of a large portion of its staff (see fig. 5). Over one-quarter of FERC's employees will be eligible for retirement by 2005. Many of the employees who will be eligible to retire by 2005 have 20 years or more of government service; are highly educated and trained; and are knowledgeable about the Commission's policies, procedures, and workload. While the departure of so many staff creates opportunities for FERC to realign its workforce skills to better match its needs for the future, it also poses a significant loss of institutional knowledge. FERC has to fulfill a dual responsibility: It must monitor the emerging competitive energy markets while it continues to provide traditional cost-of-service regulation for those areas of the country that are not undergoing energy industry restructuring. According to FERC, this en masse departure of highly qualified and experienced staff may adversely affect the agency's ability to continue to perform high-quality traditional regulatory work.

**Figure 5: Percentage of Employees in Mainstream Occupations Eligible to Retire in Fiscal Years 2002-2005**




Source: FERC.

Note: Chart reflects retirement eligibility of mainstream occupations as categorized by FERC and includes biologists, accountants/auditors, attorneys, energy industry analysts, and engineers. The percentages for any given year reflect staff that became eligible to retire in prior years, as well as those newly eligible in the year listed.

## FERC Has Not Explored the Use of All Available Civil Service Flexibilities

All federal agencies, including FERC, have flexibilities and tools available to them to help overcome workforce recruitment and retention issues, including flexibilities and tools that (1) can be initiated by federal agencies on their own, such as the use of signing and retention bonuses and alternative work schedules; (2) require approval from the Office of Personnel Management (OPM) or the Office of Management and Budget (OMB), such as special salary rates; and (3) require legislative approval, such as excepted service positions.[1] Of these special tools, FERC has used recruitment bonuses, retention allowances, tuition reimbursement, and alternative work schedules to help resolve some of its human capital challenges. For example, according to a senior official in FERC's Office of

[1] A handbook entitled *Human Resource Flexibilities and Authorities in the Federal Government* is available from OPM and provides information on the various human resource flexibilities and authorities available to federal agencies.

the General Counsel, FERC has had recent success in offering recruitment bonuses and tuition reimbursement to attract new attorneys. FERC may be able to further expand the use of these flexibilities by reviewing the experiences of other agencies. For example, the State Department is using retention allowances to create incentives for learning. It pays retention allowances ranging from 5 to 15 percent to certain information technology workers who obtain job-related degrees and certifications. OPM reported that after 1 year of operation, these retention allowances have helped to significantly reduce turnover and increase the skills base of the State Department's information technology workforce.

According to FERC's human resource manager, the agency has not yet requested any of the other flexibilities and tools available from OPM, OMB, or the Congress. For example, FERC has not requested OPM approval to establish special pay rates for critical occupations. Special pay rates allow an agency to offer rates that may be higher than basic pay rates for an occupation or group of occupations. These rates can be established nationwide or in specific local areas if it is determined that the government's recruitment or retention efforts would be significantly handicapped without these higher rates. Similarly, FERC has not asked OMB to establish critical pay authority for its staff. This authority can increase the rate of basic pay for a specific position and may be authorized for positions that require extremely high-level expertise in a scientific, technical, professional, or administrative field or one that is critical to the agency's successful accomplishment of an important mission.[2] However, critical pay may be granted only to the extent necessary to recruit or retain an individual exceptionally well qualified for the position.

As a final option, federal agencies may also request legislative approval to create excepted service positions, which are exempt from the provisions of general civil service requirements. However, FERC has not yet fully examined the need for excepted service positions and is still in the early stages of developing the supporting documentation for this authority. Excepted service authority allows agencies to hire staff through a non-competitive selection process and provides greater flexibility in setting compensation rates. Exceptions may be granted for entire agencies, such as the Federal Bureau of Investigation, or for specific positions, such as members of the State Department's Foreign Service. Some agencies, such

[2] This is subject to the limit on aggregate compensation established by 5 U.S.C. 5307 and 5 CFR part 530, subpart B.

as the Internal Revenue Service, have used flexibilities available within the existing personnel system in concert with excepted service authority to better tailor their human capital policies and practices to their needs.[3]

To better determine how to apply these tools and flexibilities to resolve their workforce issues, some agencies have undertaken formal internal assessments. For example, the U.S. Mint's Office of the Chief Financial Officer formed a Human Resources Flexibilities Team and conducted a two-phase study of the various flexibilities and tools available to, and used by, the agency. Phase one of the study included an extensive review of all human capital flexibilities available to the U.S. Mint under existing laws and regulations. Phase two included an analysis of the U.S. Mint's use of these flexibilities and the development of recommendations to agency leadership for increasing the effective use of these flexibilities as recruitment and retention tools. FERC management has yet to conduct such an assessment for the Commission.

## FERC Lacks a Plan for Addressing Its Substantial, but Not Unique, Human Capital Challenges

While FERC's human capital problems appear to be overwhelming, they are not unique and are, in fact, quite similar to issues affecting other federal agencies. As we recently reported in our Performance and Accountability Series, serious human capital shortfalls are eroding the ability of many federal agencies, and threatening the ability of others, to economically, efficiently, and effectively perform their missions.[4] Our past work has shown that agencies such as the Department of Defense, the National Aeronautics and Space Administration, and the Nuclear Regulatory Commission are struggling as FERC is to maintain the workforce skills that they need to fulfill their regulatory responsibilities and missions. These struggles are due to problems such as recruiting qualified employees, downsizing, and pending retirements by many current employees. Given the seriousness of the human capital problem facing agencies throughout the federal government, we added this issue to our list of federal programs and operations that are at high risk in 2001.

[3] The Congress, in the Internal Revenue Service (IRS) Restructuring and Reform Act, authorized IRS to establish up to 40 critical pay positions to attract senior managers with special knowledge and skill that IRS would otherwise have been unable to attract. IRS also created a broadbanded personnel classification and pay system to increase its flexibility in rewarding and utilizing managers.

[4] U.S. General Accounting Office, *Performance and Accountability Series: Major Management Challenges and Program Risks: A Governmentwide Perspective*, GAO-01-241 (Washington, D.C.: January 2001).

Some agencies with human capital challenges comparable to FERC's are beginning to take steps to resolve these issues, and an important first step is the development of a comprehensive strategic human capital management plan that is linked to the organization's strategic and business plans. For example, the Air Force Materiel Command (AFMC) has taken steps toward improving its human capital situation by developing comprehensive plans to reshape its workforce and meet its future business needs. In light of this detailed effort, AFMC gained a better understanding of current and potential workforce gaps and was better able to successfully transform its workforce. However, FERC has yet to undertake a systematic strategic human capital management planning process that can help guide its efforts to recruit, develop, train, and retain the type of workforce that can effectively regulate competitive energy markets.

We have also found that high-performing organizations in the public and private sectors identify their current and future human capital needs—including the appropriate number of employees, the key competencies for mission accomplishment, and the appropriate deployment of staff across the organization—and then create strategies for filling any gaps that are identified from this process. Moreover, high-performing agencies aggressively pursue comprehensive succession planning and executive development actions to address the potential loss of leadership continuity, institutional knowledge, and expertise. This kind of systematic planning process is essential to address the breadth and complexity of human capital challenges and succession planning issues that are looming at FERC. Although FERC senior managers have begun to discuss the issue, to date, FERC has not embarked on such systematic planning efforts. The only related analysis that FERC has conducted is its June 2001 Workforce Analysis, prepared in response to a request from OMB (OMB Bulletin 01-07). While this analysis provides both a "snapshot" of FERC's current workforce and some observations on future issues of concern to FERC management, it falls short of the detailed planning and assessment that effective strategic human capital planning entails.

As we have recently reported,[5] many needed improvements in human capital management can be achieved if federal agencies take a more strategic and performance-based approach to managing their workforce.

[5] U.S. General Accounting Office, *Managing For Results: Building on the Momentum for Strategic Human Capital Reform*, GAO-02-528T (Washington, D.C: March 2002).

Such an approach would include performing effective workforce planning, developing performance goals and measures to address workforce challenges, and linking employee performance to results. We recently developed a model of strategic human capital management to help federal agency leaders better manage their organizations' most important asset—their people. The model is designed to help agency leaders effectively use their people and determine how well they integrate human capital considerations into daily decision-making and planning for the program results they seek to achieve.

Because the transition to modern performance management will require changes in management systems and organizational cultures that often take years to implement, it will also require long-term commitment on the part of agency leaders and managers. To accomplish this, agency leaders need to commit their organizations to valuing and investing in their employees, empowering and providing the employees with the tools to do their best, and implementing modern performance management and incentive systems to focus their efforts on achieving agency missions and goals. However, we have found that the lack of continuity in leadership often hampers these efforts at many agencies. As discussed earlier in this report, FERC has had four different Chairs in the past 5 years. This constant change in leadership, coupled with the demands for management attention to resolve other issues such as the California energy crisis, has diverted FERC's attention from aggressively addressing its human capital challenges.

## FERC's Organizational Structure Limits Its Effectiveness

FERC's current organizational structure cannot ensure that the emerging energy markets are adequately monitored, because the structure does not give adequate priority and attention to FERC's market monitoring function. At FERC, the market monitoring function is currently assigned to two of the nine divisions within OMTR. These two divisions—Market Development and Market Information—compete for resources and management attention with the other seven, which are mostly responsible for analyzing case filings and applications from the electricity and natural gas industries. This casework has historically been, and continues to be, FERC's principal mechanism for regulating the activities of energy industry participants. FERC is required to complete its work on most of these cases within legislatively set time frames, such as 30 or 60 days. Consequently, casework demands may receive a higher priority than general market monitoring activities.

In addition, having the market monitoring and casework functions within the same office hampers effective communication between FERC's market monitoring staff and industry participants. Under FERC's rules to ensure independence of its process for resolving cases before the agency (known as ex parte rules), staff are prohibited from private discussions with parties involved in a case pending before FERC. However, many companies or organizations (such as ISOs) from which the market monitoring staff need to obtain information are likely to have cases before FERC at any given time. Consequently, the market monitoring staff may be limited in their ability to hold discussions with these companies or organizations, as well as with other FERC staff who may be involved in case resolution. For example, the Director of Market Analysis for the California ISO told us that because of ex parte rules and FERC's organizational structure it was very difficult for her office to communicate directly with FERC's market monitoring staff during the California energy crisis. Instead, she was forced to communicate with FERC staff in other offices and hope that they would accurately relay her concerns to the appropriate parties within the agency. A former Commissioner also noted this barrier, commenting that ex parte concerns hindered information flow at FERC and inhibited the agency's ability to gather market monitoring data.

FERC has recently created a new Office of Market Oversight and Investigation that will report directly to the Chairman and will be staffed by a multidisciplinary team. The functions of the new office will include understanding energy markets and risk management issues, measuring market performance, investigating compliance violations, and analyzing market data. According to FERC, the new office will have a total of about 100 staff. About 50 staff members will be transferred to this new office from OMTR and the Office of the General Counsel. FERC is requesting funding in its fiscal year 2003 budget proposal to hire the other 50 staff members. FERC stated that many functions of the new Office of Market Oversight and Investigation require expertise that is currently limited at the agency. FERC further stated that in order to fulfill its responsibilities, the new office will need to augment the agency's capabilities in several areas, including conducting intensive market investigations and performing sophisticated market information analysis. However, according to a FERC manager, many details about the office and how it will carry out its responsibilities have not yet been determined.

## Conclusions

As the energy industry has evolved, the resources and structures that FERC has in place are no longer adequate to fulfill the agency's new

responsibilities for regulating and overseeing competitive markets. The challenge for FERC is further complicated by the fact that while the agency needs to transform its workforce rapidly and revamp its organizational structure decisively to meet the needs of the new energy markets, it must also maintain the ability to fulfill some traditional regulatory responsibilities. Having staff in place with the requisite competencies to regulate and oversee traditional and emerging competitive markets is essential for FERC to be able to detect and head off service disruptions, price spikes, and market abuses similar to those that occurred in California and other parts of the West in 2000 and 2001. While FERC has taken steps to address its organizational challenges by creating a new Office of Market Oversight and Investigation, much remains to be done to address the agency's persistent human capital challenges.

FERC has struggled to recruit and retain highly qualified and experienced employees in order to be able to regulate and oversee evolving competitive energy markets. However, without having explored the full range of personnel tools and flexibilities that could help address these issues, FERC cannot determine which of the available tools may be best suited to help it achieve its staffing goals. Furthermore, without enhanced training, FERC cannot ensure that its staff will have the knowledge and skills required to understand and adequately regulate and oversee the increasingly complex energy markets. Because of the impending loss of institutional knowledge possessed by the large number of staff soon eligible to retire, it is also questionable whether FERC will be able to effectively provide the traditional regulatory work for which the agency is still responsible.

On a broader scale, without a comprehensive and systematic strategic human capital planning process to guide the agency's efforts to recruit, develop, train, and retain staff, FERC will be unable to effectively regulate and oversee competitive markets. Although this type of planning takes a substantial amount of time and commitment from any agency's top leadership and management, without this high level of attention and commitment, FERC will be unable to effectively resolve its human capital problems. Our model of strategic human capital management should prove helpful to FERC as it moves forward in its planning efforts.

## Recommendations for Executive Action

To help ensure that FERC has the mix of staff skills and expertise that it needs to effectively carry out its regulatory and oversight responsibilities for emerging competitive energy markets, we recommend that the Chairman, FERC, identify the personnel tools, flexibilities, and strategies, other than those already in use by FERC, available to federal agencies to recruit and retain employees. A formal internal assessment of the effectiveness and applicability of these to FERC, especially for the new Office of Market Oversight and Investigation, should be conducted. On the basis of this analysis, the Chairman should develop an action plan to use the appropriate tools, flexibilities, and strategies to begin to recruit and hire needed expertise. The Chairman should also develop an action plan to identify and target additional training and development opportunities for current staff involved or potentially involved in carrying out FERC's market oversight functions.

In the longer term, we recommend that the Chairman, FERC, develop a comprehensive strategic human capital management plan to guide FERC's efforts to recruit, develop, train, and retain staff knowledgeable in regulating competitive markets. The plan should be linked to FERC's strategic and business plans and should include the following:

- a skills assessment program that would identify gaps in skills currently held by the workforce that are necessary to carry out the agency's evolving regulatory and oversight responsibilities;
- a recruitment and retention initiative, based on priorities for meeting future regulatory and oversight staffing needs, which addresses filling skill gaps in the current workforce;
- a training effort targeted at increasing staff knowledge in the areas of market functions and market structures, so that FERC staff will be better prepared to regulate and oversee competitive energy markets; and
- a comprehensive succession plan for solving challenges posed by the large number of impending retirements within the agency, including reliable projections of the number of eligible staff who may actually retire.

## Agency Comments

In its written comments on a draft of this report, FERC stated that the report accurately addresses the human capital challenges that the agency faces. It noted that its staff today is better suited to regulate cost-of-service rates rather than market-based rates. The agency stated that how it replaces the large number of its employees retiring in the near future will

have a profound effect on its future capabilities. FERC also stated that it has made significant progress recently in hiring new employees through an aggressive recruitment program and is focusing on the skill sets needed for market oversight and investigation. The agency further stated that it will explore all the hiring flexibility available to the agency to build a world-class oversight staff, drawing ideas from agencies with similar regulatory responsibilities over complex and rapidly evolving markets. According to FERC, it has already received congressional authorization to hire five new senior positions for market oversight and investigation and has requested congressional authorization for 50 new positions and $5 million in additional funding. FERC said that it is presently reviewing existing budget allocations across the agency for further resources. Finally, FERC stated that the agency has implemented training programs for existing staff and is working to craft more focused training programs to build technical and leadership capabilities. While all of these steps will help FERC address some of its human capital challenges, we believe that it is important for the Commission to have a comprehensive human capital management plan to guide these efforts over the longer term.

# Appendix I: FERC's Principal Strategic Goals and Objectives for Energy Markets

Table 4 shows the Federal Energy Regulatory Commission's (FERC) principal goals and objectives relating to its regulation and oversight of energy markets, as contained in the 1997, 2000, and 2001 versions of its strategic plan.

**Table 4: FERC's Principal Strategic Goals and Objectives for Energy Markets**

| Version | Strategic goals | Strategic objectives |
|---|---|---|
| 1997 | Regulate electric transmission and bulk power markets to<br>• foster the growth of efficient, competitive commodity markets and<br>• protect customers from excessive transmission rates and service discrimination.<br><br>Regulate natural gas pipelines to<br>• ensure that pipeline transportation service supports efficient, competitive commodity markets and<br>• protect consumers from excessive transportation rates and service discrimination. | Efficient, competitive markets: Customers will have more new products and a reasonable range of suppliers from which to choose in both the electric and natural gas industries.<br><br>Efficient, competitive markets: Natural gas and electric power prices will become more responsive to market conditions—that is, prices will reflect changing supply and demand conditions more clearly and more quickly.<br><br>Efficient, competitive markets: Natural gas prices within each trading region will tend to converge, except to the extent that there are demonstrable transportation constraints or costs. Wholesale electricity price differences will also tend to narrow.<br><br>Efficient, competitive markets: It will be less costly, administratively, to transact business on the interstate natural gas transportation grid.<br><br>Constraining market power: Market participants will have confidence that natural gas markets, electric markets, and all transportation services are working efficiently and fairly and that market participants are not subject to abuses of market power. |
| 2000 | Benefit consumers by providing a fair, open, and efficient regulatory foundation for competition. | Increase pricing efficiency.<br>• Promote innovative, efficiently priced services.<br>• Promote reliability by using market pricing to encourage capacity expansion.<br><br>Nurture competitive market institutions.<br>• Increase transportation system integration through regulatory reform.<br>• Increase transparency of Commission policies and availability of market-related information<br>• Monitor energy markets.<br><br>Constrain market power.<br>• Detect and respond to all forms of market power.<br>• Use enforcement and litigation as necessary to remedy anti-competitive behavior. |

| Version | Strategic goals | Strategic objectives |
|---|---|---|
| | | Resolve disputes quickly and fairly.<br>• Promote informal procedures to resolve issues, especially the use of alternative dispute resolution.<br>• Target litigation for those cases where it makes sense. |
| 2001 | Promote a secure, high-quality, environmentally-responsive energy infrastructure through consistent policies. | Remove roadblocks impeding market investment.<br><br>Provide clarity of cost recovery to infrastructure investors.<br><br>Proactively address landowner, safety and environmental concerns.<br><br>Stimulate use of new technology.<br><br>Promote measures which improve the security and reliability of the energy infrastructure. |
| | Foster nationwide competitive energy markets as a substitute for traditional regulation. | Advance competitive market institutions across the entire country.<br><br>Establish balanced, self-enforcing market rules. |
| | Protect customers and market participants through vigilant and fair oversight of the transitioning energy markets. | Improve our understanding of energy market operations.<br><br>Assure pro-competitive market structures.<br><br>Remedy individual market participant behavior as needed to ensure just and reasonable market outcomes. |
| | Efficiently administer the agency's resources to accomplish the agency's goals. | Attract, train, and retain staff to fulfill the strategic plan.<br><br>Manage information technology to better serve the public and streamline work processes.<br><br>Communicate our activities more clearly with customers, elected officials, and industry.<br><br>Integrate agency business planning and budgeting processes.<br><br>Build strong partnerships with all stakeholders, particularly with governors and states. |

# Appendix II: GAO Survey of Current FERC Employees in Selected Offices

This appendix contains the questions and responses from our survey of FERC employees in the Office of Markets, Tariffs and Rates and staff in the Office of the General Counsel's sections for Markets, Tariffs, and Rates and Market Oversight and Enforcement. Responses are expressed as a percentage of those responding to the survey.

United States General Accounting Office

# Survey of Federal Energy Regulatory Commission Employees

**Introduction**

The U.S. General Accounting Office (GAO), an independent agency of Congress, is conducting a review of management issues at the Federal Energy Regulatory Commission (FERC). As part of our study, we are soliciting the views of the FERC staff in the Office of Markets, Tariffs, and Rates and related sections of the Office of General Counsel to obtain their opinions about a variety of topics relating to the work of the FERC.

Most of the questions in this questionnaire can be answered by checking boxes or filling in blanks. Space has been provided at the end of the survey for any additional comments. The survey should take about 30 minutes to complete.

GAO will take steps to prevent the disclosure of individually identified data from this survey. Only GAO staff assigned to this study can access and view your responses. **No one at the FERC will see your individual responses.** The PIN number associated with the survey is included only to allow you to access the survey and enter your responses, and to aid us in our follow-up efforts. Survey results will be reported in summary form. If individual answers are discussed in our report, no information will be included that could be used to identify individual respondents.

If you have any questions, please call Elizabeth Erdmann at (202) 512-8113 or send e-mail to erdmanne@gao.gov.

Your participation is very important and we urge you to complete this survey. We cannot provide meaningful information to the Congress on these issues without your frank and honest answers.

Thank you for your time and assistance.

**Please refer to the following definitions when completing this survey:**

**FERC** - Refers to the agency as a whole, not any particular office, division, group, or team, or the Office of General Counsel.

**Office** - Refers to the Office of Markets, Tariffs, and Rates (OMTR) or the Office of General Counsel (OGC).

**Division/Section** - Refers to a division within the Office of Markets, Tariffs, and Rates, such as the Division of Tariffs and Rates, the Division of Market Information, or the Division of Market Development or a section within the Office of General Counsel such as Markets, Tariffs, and Rates or Market Oversight and Enforcement.

**Group** - Refers to the group within a single division of the Office of Markets, Tariffs, and Rates, such as the West Group 1, the Market Development Group, or the Information Analysis Group.

1

**BACKGROUND INFORMATION**

The objective of this section is to obtain general information about your current position with FERC.

1. How long have you been employed by FERC, including its predecessor, the Federal Power Commission? *(enter number of years. If less than 6 months, enter 0.)*

   Mean = 14.91 years

2. In which division in OMTR or section in OGC do you work now? *(Check one.)*

   43% Division of Tariffs and Rates
   9% Division of Market Development
   6% Division of Market Information
   10% Division of Litigation
   6% Division of Policy, Innovation, and Communication
   3% Office of the Chief Economic Advisor
   3% Division of Issue Identification and Resolution Management
   6% OGC Section of Market Oversight and Enforcement
   14% OGC Section of Markets, Tariffs, and rates

3. In which office did you work before the FERC First reorganization, which occurred in 1998? *(Check one.)*

   36% Office of Electric Power Regulation
   25% Office of Pipeline Regulation
   7% Office of Economic Policy
   3% Office of the Chief Accountant
   2% Office of Enforcement
   13% Office of General Council
   5% Other (please specify)_____
   ---
   9% Was not employed by FERC prior to the 1998 reorganization

4. Which of the following generally describes your current area of work? *(Check one.)*

   4% Accountant/Auditor
   8% Economist (Industry, Financial, etc.)
   5% Engineer (Electrical, Mechanical, Petroleum, etc.)
   55% Energy Industry Analyst
   3% Other Analyst (Financial, Budget, Operations Research, Program, etc.)
   2% Information Technology Specialist
   20% Attorney
   3% None of the above (please specify) _____

2

**ORGANIZATIONAL EFFECTIVENESS**

The objective of this section is to obtain information about FERC's effectiveness in meeting its mission, goals, and objectives.

5. In general, how clear or unclear to you are each of the following? *(Check one box in each row.)*

| | Very clear (1) | Somewhat clear (2) | Somewhat unclear (3) | Very unclear (4) | No basis to judge |
|---|---|---|---|---|---|
| a) **FERC's** overall mission/goals and objectives | 40% | 45% | 9% | 5% | 2% |
| b) Your **office's** goals and objectives | 31 | 40 | 21 | 7 | 2 |
| c) Your **division's** goals and objectives | 38 | 34 | 17 | 9 | 2 |
| d) Your **group's** goals and objectives | 40 | 31 | 14 | 10 | 5 |
| e) Your current duties and responsibilities | 52 | 29 | 13 | 5 | 0 |

6. In general, how effective or ineffective is FERC in doing the following? *(Check one box in each row.)*

| | Very effective (1) | Somewhat effective (2) | Neither effective nor ineffective (3) | Somewhat ineffective (4) | Very ineffective (5) | No basis to judge (6) |
|---|---|---|---|---|---|---|
| a) Promoting sufficient electricity supply and delivery (transmission) infrastructure | 9% | 34% | 15% | 11% | 7% | 23% |
| b) Promoting competition in electricity markets | 13 | 40 | 10 | 10 | 7 | 19 |
| c) Regulating wholesale electricity transmission in interstate commerce | 20 | 40 | 8 | 8 | 5 | 19 |
| d) Regulating wholesale electricity sales in interstate commerce | 13 | 42 | 10 | 10 | 6 | 19 |
| e) Monitoring wholesale electricity markets | 5 | 27 | 16 | 16 | 12 | 23 |
| f) Promoting sufficient natural gas supply and delivery infrastructure | 19 | 27 | 11 | 6 | 3 | 35 |
| g) Promoting competition in natural gas markets | 21 | 32 | 8 | 4 | 4 | 33 |
| h) Regulating interstate natural gas transportation | 24 | 34 | 6 | 3 | 3 | 30 |
| i) Monitoring natural gas markets | 8 | 24 | 15 | 8 | 7 | 38 |
| j) Other - Please specify: _____ | | | | | | |

3

7. More specifically, with regard to regulation and oversight of **wholesale electricity markets**, overall, how effective or ineffective is FERC in doing the following? *(Check one box in each row.)*

| | Very effective (1) | Somewhat effective (2) | Neither effective nor ineffective (3) | Somewhat ineffective (4) | Very ineffective (5) | No basis to judge (6) |
|---|---|---|---|---|---|---|
| **Cost-of-Service Rates** | | | | | | |
| a) Establishing just and reasonable cost-of-service wholesale electricity prices | 26% | 33% | 4% | 8% | 3% | 27% |
| b) Gathering data to establish just and reasonable cost-of-service wholesale electricity prices | 21 | 31 | 10 | 8 | 4 | 27 |
| c) Analyzing data to establish just and reasonable cost-of-service wholesale electricity prices | 24 | 30 | 8 | 7 | 4 | 27 |
| **Market-Based Rates** | | | | | | |
| a) Establishing market structure and rules to provide competitive, well-functioning wholesale electricity markets that produce just and reasonable rates | 9% | 30% | 15% | 15% | 9% | 23% |
| b) Gathering data to determine whether market-based wholesale electricity rates are just and reasonable | 6 | 21 | 15 | 19 | 14 | 24 |
| c) Analyzing data to determine whether market-based wholesale electricity rates are just and reasonable | 5 | 23 | 13 | 17 | 16 | 26 |
| **Other Market Issues** | | | | | | |
| a) Detecting market power abuses in wholesale electricity markets | 5% | 21% | 16% | 21% | 16% | 22% |
| b) Correcting detected market power abuses in wholesale electricity markets | 8 | 27 | 13 | 17 | 14 | 21 |
| c) Identifying problems concerning wholesale electricity market structure and rules | 10 | 31 | 13 | 16 | 11 | 19 |
| d) Remedying problems concerning wholesale electricity market structure and rules | 7 | 29 | 17 | 17 | 11 | 19 |
| e) Resolving complaints and disputes among electricity market participants quickly and fairly | 13 | 36 | 12 | 13 | 6 | 21 |
| f) Enforcing violations of FERC's requirements relating to wholesale electricity sales | 6 | 26 | 15 | 12 | 10 | 30 |
| g) Other - Please specify: _____ | | | | | | |

4

8. More specifically with regard to regulation and oversight of **interstate natural gas transportation**, overall, how effective or ineffective is FERC in doing the following? *(Check one box in each row.)*

| | Very effective (1) | Somewhat effective (2) | Neither effective nor ineffective (3) | Somewhat ineffective (4) | Very ineffective (5) | No basis to judge (6) |
|---|---|---|---|---|---|---|
| **Cost-of-Service Rates** | | | | | | |
| a) Establishing just and reasonable cost-of-service natural gas prices | 27% | 23% | 6% | 2% | 1% | 42% |
| b) Gathering data to establish just and reasonable cost-of-service rates for interstate natural gas transportation | 23 | 26 | 5 | 5 | 1 | 41 |
| c) Analyzing data to establish just and reasonable cost-of-service natural gas prices | 27 | 23 | 3 | 4 | 1 | 42 |
| **Market-Based Rates** | | | | | | |
| a) Establishing market structure and rules to provide competitive, well-functioning natural gas markets | 16% | 32% | 7% | 4% | 3% | 38% |
| b) Gathering data to determine whether market-based rates for interstate natural gas transportation are just and reasonable | 9 | 31 | 8 | 6 | 5 | 41 |
| c) Analyzing data to determine whether market-based rates for interstate natural gas transportation are just and reasonable | 12 | 27 | 11 | 5 | 5 | 41 |
| **Other Market Issues** | | | | | | |
| a) Detecting market power abuses in natural gas markets | 5% | 30% | 10% | 9% | 6% | 39% |
| b) Correcting detected market power abuses through changes in market rules | 7 | 31 | 9 | 8 | 5 | 40 |
| c) Identifying problems concerning natural gas market structure and rules | 10 | 33 | 7 | 9 | 3 | 38 |
| d) Remedying problems concerning natural gas market structure and rules | 11 | 33 | 5 | 9 | 4 | 39 |
| e) Resolving complaints and disputes among natural gas market participants quickly and fairly | 16 | 29 | 10 | 3 | 2 | 40 |
| f) Enforcing violations of FERC's requirements relating to natural gas transmission | 13 | 28 | 6 | 8 | 4 | 42 |
| g) Other - Please specify: _____ | | | | | | |

5

9. Would you agree or disagree with the following statements as they relate to various issues in FERC? (*Check one box in each row.*)

| | Strongly agree (1) | Agree (2) | Neither agree nor disagree (3) | Disagree (4) | Strongly disagree (5) | No basis to judge (6) |
|---|---|---|---|---|---|---|
| **Teamwork/External Cooperation** | | | | | | |
| a) Teamwork with others outside my office is encouraged. | 24% | 43% | 16% | 12% | 5% | 0% |
| b) Teamwork within my office is encouraged. | 35 | 37 | 15 | 11 | 2 | 0 |
| c) Teamwork within my division/section is encouraged. | 42 | 37 | 9 | 11 | 2 | 0 |
| d) Coordination and cooperation with state regulators is adequate. | 8 | 23 | 24 | 14 | 5 | 25 |
| e) Coordination and cooperation with Independent System Operators (ISO's) is adequate. | 6 | 22 | 18 | 13 | 5 | 36 |
| **Management/Resources** | | | | | | |
| a) FERC top management (the Commissioners and office directors) provides clear and concise direction | 5% | 33% | 21% | 24% | 15% | 2% |
| b) My immediate managers provide clear and concise direction | 25 | 38 | 14 | 15 | 7 | 0 |
| c) Top management has clearly defined what role FERC is going to play in monitoring markets. | 5 | 19 | 24 | 27 | 17 | 8 |
| d) Staffing levels in FERC are satisfactory. | 2 | 20 | 18 | 31 | 21 | 8 |
| e) The employee skill mix in FERC is adequate. | 4 | 25 | 18 | 30 | 18 | 6 |
| f) Information technology support and services are satisfactory. | 9 | 43 | 16 | 21 | 12 | 0 |
| g) My office maintains a strong focus on achieving the agency's mission. | 18 | 37 | 27 | 10 | 5 | 3 |
| **Data/Knowledge Requirements** | | | | | | |
| a) Staff understands what data are required to effectively monitor and regulate natural gas markets. | 5% | 29% | 13% | 15% | 6% | 32% |
| b) Staff understands what data are required to effectively monitor and regulate wholesale electricity markets. | 4 | 30 | 18 | 24 | 9 | 16 |
| c) Staff has adequate access to data on electricity market performance. | 3 | 19 | 17 | 27 | 12 | 22 |
| d) Staff has adequate access to data on natural gas market performance. | 3 | 25 | 13 | 17 | 4 | 37 |
| e) Staff has adequate knowledge of, or experience with regulating competitive electricity markets. | 5 | 20 | 25 | 21 | 12 | 17 |
| f) Staff has adequate knowledge of, or experience with regulating competitive natural gas markets. | 8 | 33 | 12 | 11 | 4 | 33 |
| g) Staff understands the integration of gas and electrical markets. | 6 | 32 | 22 | 20 | 7 | 14 |

*Continued*

9.( *Continued)* Would you agree or disagree with the following statements as they relate to various issues in FERC? *(Check one box in each row.)*

| | Strongly agree (1) | Agree (2) | Neither agree nor disagree (3) | Disagree (4) | Strongly disagree (5) | No basis to judge (6) |
|---|---|---|---|---|---|---|
| **Authority** | | | | | | |
| a) FERC should have authority over new generation siting. | 17% | 27% | 15% | 19% | 9% | 12% |
| b) FERC should have authority over electrical transmission line siting. | 33 | 36 | 9 | 5 | 5 | 12 |
| c) FERC should have authority to enforce reliability rules for electricity. | 42 | 36 | 9 | 2 | 1 | 10 |
| d) FERC should have additional authority to require submission/sharing of data from ISO's. | 45 | 33 | 8 | 2 | 1 | 12 |
| e) FERC should have additional authority to levy penalties. | 45 | 38 | 6 | 1 | 0 | 10 |

When answering the next question, please recall how we defined division/section earlier in the survey:

**Division/Section** - Refers to a division within the Office of Markets, Tariffs, and Rates, such as the Division of Tariffs and Rates, the Division of Market Information, or the Division of Market Development or a section within the Office of General Counsel such as Markets, Tariffs, and Rates or Market Oversight and Enforcement.

10. Thinking about your current division in OMTR or section in OGC, would you agree or disagree with the following statements? *(Check one box in each row.)*

| | Strongly agree (1) | Agree (2) | Neither agree nor disagree (3) | Disagree (4) | Strongly disagree (5) | No basis to judge (6) |
|---|---|---|---|---|---|---|
| a) My division/section has clearly defined its goals and objectives | 17% | 38% | 20% | 18% | 8% | 0% |
| b) My division/section has set clear performance expectations | 15 | 34 | 19 | 21 | 10 | 0 |
| c) My division/section can retain quality employees | 10 | 30 | 24 | 23 | 11 | 2 |
| d) My division/section currently has adequate staff to do its work | 5 | 25 | 21 | 29 | 16 | 4 |
| e) My division/section plans for its future staffing needs | 4 | 27 | 22 | 11 | 10 | 27 |
| f) The staff in my division/section have the skills needed to do their jobs well | 12 | 42 | 18 | 20 | 6 | 3 |
| g) Managers in my division/section encourage me to attend training | 20 | 41 | 20 | 11 | 6 | 2 |
| h) Managers in my division/section provide time for me to do attend training | 22 | 43 | 20 | 8 | 4 | 3 |

7

11. In your opinion, to what extent, if at all, would each of the following help you perform your job duties better? *(Check one box in each row.)*

| | To a very great extent (1) | To a great extent (2) | To a moderate extent (3) | To some or little extent (4) | To no extent (5) | No basis to judge (6) |
|---|---|---|---|---|---|---|
| a) More autonomy in carrying out my job responsibilities | 7% | 17% | 27% | 23% | 23% | 3% |
| b) More direction from management | 18 | 25 | 27 | 19 | 10 | 2 |
| c) More supervision from management | 3 | 8 | 21 | 36 | 31 | 2 |
| d) Improved communication between offices | 27 | 29 | 23 | 11 | 5 | 5 |
| e) Improved communication between divisions in OMTR or sections in OGC | 27 | 26 | 25 | 11 | 5 | 6 |
| f) Additional training opportunities | 15 | 19 | 34 | 19 | 11 | 3 |
| g) More "teaming" with those knowledgeable in other subject areas (Please list subject areas) _____ _____ | 20 | 19 | 24 | 20 | 15 | 3 |
| h) Other - Please specify: _____ | | | | | | |

12. In your opinion, would additional training in the following subject areas assist you in better monitoring or regulating energy markets? *(Check one box in each row.)*

| | Additional training would assist me greatly (1) | Additional training would assist me somewhat (2) | I feel I'm already proficient in this area (3) | Training in this area would not be applicable to the work I do (4) | No basis to judge (6) |
|---|---|---|---|---|---|
| a) Basic economic principles/definitions | 14% | 38% | 39% | 6% | 3% |
| b) Economic theory/models | 14 | 46 | 25 | 12 | 4 |
| c) Regulatory theory | 17 | 38 | 40 | 3 | 3 |
| d) Market functions | 32 | 49 | 12 | 4 | 3 |
| e) Market structures | 33 | 51 | 9 | 4 | 3 |
| f) Statistical software packages such as SAS or SPSS | 11 | 30 | 7 | 35 | 17 |
| g) Understanding how financial markets interact with energy markets (including trading, hedging, derivatives, and financial instruments). | 37 | 49 | 3 | 7 | 4 |
| h) Other - Please specify: _____ | | | | | |

8

**MORALE AND WORK ENVIRONMENT**

The objective of this section is to obtain your views on morale and the general work environment at FERC.

13. Overall, how would you characterize the current level of morale in your division/section? *(Check one.)*

2% Very high
27% Generally high
30% Neither high nor low
24% Generally low
17% Very low
---
1% No basis to judge

14. Specifically, how satisfied or dissatisfied are you with each of the following as they relate to your current work environment? *(Check one box in each row.)*

| | Very satisfied (1) | Somewhat satisfied (2) | Equally satisfied as dissatisfied (3) | Somewhat dissatisfied (4) | Very dissatisfied (5) | No basis to judge (6) |
|---|---|---|---|---|---|---|
| **Communication** | | | | | | |
| a) Communication between the Chairman and my division/section | 10% | 26% | 20% | 11% | 7% | 26% |
| b) Communication between the Commissioners (not including the Chairman) and my division in OMTR or section in OGC | 6 | 22 | 22 | 14 | 6 | 30 |
| c) Communication between my office's top management and my division | 12 | 24 | 13 | 15 | 14 | 22 |
| d) Communication between different divisions/sections within my office | 9 | 24 | 20 | 24 | 14 | 9 |
| e) Communication between groups within my division/section | 20 | 29 | 21 | 14 | 10 | 7 |
| f) Communication with offices other than my own | 5 | 28 | 24 | 20 | 14 | 11 |
| g) Communication between management of different offices | 7 | 17 | 19 | 18 | 13 | 28 |
| h) Communication with groups outside FERC | 4 | 21 | 28 | 10 | 10 | 28 |
| **Cooperation** | | | | | | |
| a) Cooperation between different divisions in OMTR and sections in OGC | 7% | 29% | 18% | 25% | 11% | 10% |
| b) Cooperation between groups within my division in OMTR or section in OGC | 18 | 34 | 19 | 16 | 5 | 8 |
| c) Cooperation with offices other than my own | 7 | 29 | 26 | 20 | 7 | 12 |
| d) Cooperation between management of different offices | 8 | 20 | 23 | 15 | 10 | 25 |
| e) Cooperation with groups outside of FERC | 6 | 23 | 25 | 7 | 7 | 31 |

*Continued on next page.*

9

14. (Continued) Specifically, how satisfied or dissatisfied are you with each of the following as they relate to your current work environment? *(Check one box in each row.)*

| | Very satisfied (1) | Somewhat satisfied (2) | Equally satisfied as dissatisfied (3) | Somewhat dissatisfied (4) | Very dissatisfied (5) | No basis to judge (6) |
|---|---|---|---|---|---|---|
| **Leadership/Change** | | | | | | |
| a) Leadership provided by Commissioners and office directors at FERC | 9% | 32% | 20% | 21% | 12% | 6% |
| b) Leadership/supervision that you directly receive | 23 | 31 | 17 | 15 | 12 | 2 |
| c) Organizational changes within my office | 5 | 14 | 22 | 23 | 30 | 6 |
| d) Changes in my job duties as a result of recent reorganization | 10 | 20 | 29 | 12 | 17 | 12 |
| **Training/Staffing** | | | | | | |
| a) Availability of training opportunities at FERC | 21% | 42% | 22% | 8% | 5% | 2% |
| b) Staffing level in my division of OMTR or section in OGC | 6 | 28 | 21 | 23 | 14 | 7 |
| c) Staff skills mix | 6 | 29 | 26 | 21 | 13 | 5 |
| d) Use of teaming within my office | 13 | 34 | 26 | 18 | 8 | 2 |
| e) Use of teaming between OMTR and OGC | 10 | 33 | 19 | 16 | 13 | 10 |
| **Other** | | | | | | |
| a) Availability of resources (i.e., budget, technology, staff, etc.) necessary to do my job at FERC | 8% | 38% | 22% | 18% | 11% | 4% |
| b) Availability of rewards for job performance in my division of OMTR or section in OGC | 11 | 26 | 19 | 20 | 19 | 5 |
| c) Other - Please specify: _____ | | | | | | |

15. Thinking about the issues covered in the previous question concerning your current work environment, overall, how satisfied or dissatisfied are you with your work environment at FERC? *(Check one.)*

11% Very satisfied
39% Generally satisfied
23% Equally satisfied as dissatisfied
20% Generally dissatisfied
7% Very dissatisfied

10

**FERC FIRST**

The objective of this section is to obtain your views on the FERC First initiative.

16. Were you employed by FERC before the FERC First reorganization, which occurred in 1998? *(Check one.)*

87% Yes ➜ ***Continue with question 17.***

13% No ➜ ***Skip to question 22, Comments.***

17. To what extent, if at all, do you believe that the efforts to implement FERC First improved FERC's ability to effectively monitor or regulate energy markets overall? *(Check one.)*

0% To a very great extent
4% To a great extent
17% To a moderate extent
25% To some or little extent
49% To no extent
---
6% No basis to judge

18. To what extent, if at all, do you believe that the efforts to implement FERC First have improved your ability to perform your job duties? *(Check one.)*

2% To a very great extent
4% To a great extent
12% To a moderate extent
17% To some or little extent
63% To no extent
---
1% No basis to judge

19. Prior to the FERC First reorganization, which of the following was your area of primary focus? *(Check one.)*

42% Gas
49% Electricity
9% Other - Please specify: _____

20. After the FERC First reorganization, which of the following is your area of primary focus? *(Check one.)*

17% Gas
38% Electricity
39% Both gas and electricity
6% Other - Please specify: _____

11

21. In your opinion, to what extent, if at all, has your work focus changed as a result of the FERC First reorganization? *(Check one.)*

    15% Changed to a very great extent
    15% Changed to a great extent
    24% Changed to a moderate extent
    24% Changed to little or some extent
    24% Has not changed at all

    Please explain your response_____

    _____

    _____

**COMMENTS**

22. If you have any additional comments relating to any of the issues raised in this questionnaire, please enter them in the space provided.

23. If you have any additional suggestions not noted elsewhere on this questionnaire about how FERC, OMTR or OGC can improve operations, please enter them in the space provided.

**Thank you for your assistance.**

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# Appendix III: Comments from the Federal Energy Regulatory Commission

**FEDERAL ENERGY REGULATORY COMMISSION**
WASHINGTON, DC 20426

OFFICE OF THE CHAIRMAN

May 31, 2002

Mr. Jim Wells
Director, Natural Resources and Environment
United States General Accounting Office
Room 2T23
441 G Street, NW
Washington, DC 20548

Dear Mr. Wells:

Thank you for your letter of May 16, 2002, enclosing your draft report of *Energy Markets: Concerted Actions Needed by FERC to Confront Challenges That Impede Effective Oversight*. I appreciate the opportunity to comment on this report and congratulate you on your effort.

In general, I agree with the conclusions of your report. The Commission's internal restructuring to support its new market oversight role has not kept pace with the speed of energy industry restructuring. Your recommendations of how to meet the challenges that lay ahead are consistent with our current direction. Since I became Chairman in September 2001, the Commission has taken aggressive measures to address the key challenges we face - *ensuring adequate infrastructure* for our Nation's energy industries; fostering nationwide *competitive energy markets with balanced rules;* and developing *vigilant market oversight* to ensure that energy markets are competitive, efficient, and fair. I appreciate this opportunity to suggest that our current efforts are paying off, and we have a plan that is ready to implement the additional resources and statutory authority that have been identified in this report.

I agree with your report's conclusion that we have not yet done all we can to oversee energy markets. Despite a long-standing recognition that we needed to develop the information, procedures and staffing to oversee markets, as of the time of your assessment, the Commission had not previously focused its efforts clearly enough to succeed. That has now changed. In January 2002 we launched a new Office of Market Oversight and Investigation (OMOI) to oversee and assess the fair and efficient

operations of electric power and natural gas markets. The new office, under the leadership of its first director, William Hederman, will be up and running in August, 2002. Its job will be to understand energy markets and risk management, measure market performance and analyze market data with an eye to recommending market improvements, investigate compliance violations, and, where necessary, pursue enforcement actions. The office:

- will report directly to me and my fellow commissioners,
- will bring together all of the staff devoted to oversight and enforcement in one place, and
- will receive the resources it needs to restore and maintain the integrity of our nation's energy markets.

Your report accurately addresses the human capital challenges that we face. Today's staff is better suited to regulate cost-of-service rates than market-based regulation. By 2005 one quarter of our employees will be eligible to retire and half will be eligible for early out retirement. How the Commission replaces these employees will have a profound effect on the future capabilities of the agency. We have made significant progress recently in hiring new employees through an aggressive recruitment program. We are focusing on the skill sets we need for market oversight and investigation, and we will explore all the hiring flexibility available to us to build a world-class oversight staff, drawing ideas from agencies with similar regulatory responsibilities over complex and rapidly evolving markets. We have already received Congressional authorization to hire five new senior positions for market oversight and investigation and I have requested Congressional authorization for 50 new positions and $5 million in additional funding. We are presently reviewing existing budget allocations across the agency for further resources. Finally, we have implemented training programs for existing staff and are working to craft more focused training programs to build technical and leadership capabilities.

I agree with your report's conclusion that the Commission's ability to develop, regulate and oversee competitive energy markets could be enhanced with new statutory authority and guidance from Congress on the agency's appropriate role in these markets. As your report indicates, the Commission has often struggled to find market solutions while operating under legislative authority designed for regulated monopolies with cost-of-service rates. Additional statutory authority is needed, particularly in providing the Commission with the ability to assess administrative penalties for violations of the law or Commission rules. Congress could also strengthen the Commission's ability to create competitive wholesale markets by clarifying the Commission's authority to order the formation of RTOs.

3

I have enclosed a summary of the Commission's current efforts to address issues of market oversight, human capital and legislative authority.

Thank you for your insight and recommendations on how we can improve our efforts to regulate and oversee electricity, natural gas and oil pipeline markets. I appreciate the hard work your staff put into this report and hope it will enable us to obtain the resources and authority needed to face the challenges before us. Thank you again for the opportunity to comment on your report.

Best regards,

Pat Wood, III
Chairman

Enclosure

## Attachment: Recent FERC Market Oversight Initiatives

Our current Strategic Plan, adopted on September 26, 2001, explicitly recognizes the need to provide vigilant, fair oversight of energy markets as one of the three major substantive challenges we face in the next decade. The past two years have made it abundantly clear that emerging energy markets can be subject to both abusive actions by individual companies and more general system dysfunctions. The agency must recognize such problems rapidly and respond to them quickly and cogently to make wholesale markets work for the Nation's energy customers.

Following the Strategic Plan, in January 2002 we created a new Office of Market Oversight and Investigation to meet the challenge. This Office represents a fundamental break with the past. It will:

- Concentrate all of our oversight and investigation functions in one place. This will avoid the diffusion of effort that the GAO report observes as one of the problems of the past.

- Report directly to the Chairman and provide information directly to all of the Commissioners on a regularly scheduled timetable. This status provides for executive leadership and regular input into the thinking of our decision-makers.

- Have the resources it needs to do the job. We have requested $5 million, 50 full-time equivalents, and the authority to hire 5 new senior (SES or SL) staff for market oversight in our FY 2003 budget. We have already hired an expert in the energy and financial industries to set up and run the new office.

The new Office will be operational in August 2002. We have developed preliminary versions of how it will work: a mission and function statement, an organizational design and a comprehensive list of the services and products the Office will produce. These plans are attached. In light of various findings in the GAO report, three aspects of the new Office's products deserve highlighting. It explicitly includes:

- Monitoring of markets in regions where no market monitors are in place at Regional Transmission Organizations (RTOs) or Independent System Operators (ISOs), and working closely with market monitors of RTOs and ISOs where they do exist.

- Providing advance warnings of problems that can be anticipated and timely responses to those that cannot.

- Developing and publishing market performance measures as a key product in the overall market oversight program. These measures will be a major part of the Commission's overall performance measures submitted to Congress every year. Unsatisfactory performance will also be traced to its root cause, either market design rules, structural features of supply and/or demand, market participant behavior, to inform corrective policy action.

OMOI will greatly improve our ability to oversee and investigate markets. However, we have already made significant progress within our old structures. Within the past year, our staff:

- Produced and reported studies on infrastructure and transmission constraints in all regions of the United States,
- Improved its daily and monthly reporting to the Commission,
- Responded to a large array of special needs for market analysis for various Commission proceedings and investigations,
- Increased its access to needed data from industry organizations, RTOs, and individual companies, and
- Hired 7 new staff in the markets program area with 9 additional job offers or start dates pending,
- Targeted recruitment efforts to needed skill sets, leading to the posting of 10 vacancy announcements above entry level with 230 applications for these positions including many promising candidates.

A key purpose of market oversight is to identify market problems and propose remedies. Here, too, we are making progress even before OMOI is established. We saw that inconsistent electric market designs create unnecessary transactions costs and market designs that fail to recognize realities of the electric grid create opportunities for market manipulation. In response, we will issue a proposed rule this summer on standard market design (SMD) that will standardize a thorough set of market rules. We saw that non-discriminatory and rapid generator interconnection is critical to competition and providing adequate infrastructure. In response we issued a proposed rule this spring to standardize interconnection agreements. We saw that poor information on market conditions leads to illiquid markets and reduced trust in the integrity of the market. In response we issued Order No. 2001 requiring the public reporting of pricing and other terms of transactions.

These measures will both greatly reduce the risk of market dysfunction and make market monitoring a much stronger part of overall market institutions. Still, the experience of the last two years shows that no set of initial plans will be perfect. Our aim is to use new rules to *make markets work* - and to use market oversight and investigation to *make sure that markets work.*

**Resources**

As the GAO report finds, past Commissions had limited success hiring staff at the mid- and upper levels with knowledge of and experience with competitive energy markets. Our recent targeted recruiting efforts have generated much greater interest by more promising candidates than in past efforts, providing reason for optimism. We will continue to be more creative in our approaches to hiring and retaining needed staff and offering wages that are competitive with the private sector. Language in the Commission's current FY 2002 budget appropriation provides additional resources and SES/SL positions for this purpose. Since last November, the Commission has been working with the Office of Personnel Management to gain approval for these positions and will continue to do so. I also support legislation to provide the Commission with additional recruitment and pay flexibilities, and with exemptions from parts of Title 5 or, in the alternative, a demonstration project through OPM. Given the national importance of making energy markets work well, OMOI will also appeal directly to the civic-mindedness of experts in the relevant disciplines who would be willing to make some financial sacrifice to serve the public interest.

**Need for Greater Statutory Authority**

As the report notes, the Commission has often struggled to find market solutions while operating under legislative authority designed for regulated monopolies with cost of service rates. Additional statutory authority is needed in the following areas.

Congress can help the Commission protect customers against the exercise of market power by amending the Federal Power Act to allow the Commission to establish a refund effective date that is as early as the date a complaint is filed or initiated by the Commission. The Commission relies on Section 206(b) of the Federal Power Act for refund protections if it finds that market-based rates are no longer just and reasonable. Section 206(b) provides that whenever the Commission institutes a Section 206 investigation of a rate or charge that may be unjust or unreasonable, the Commission must establish a refund effective date. If the investigation is based on a complaint, the refund effective date must be no earlier than 60 days after the complaint is filed or initiated by the Commission. Permitting the Commission to set a refund effective date as of the date a complaint is filed will increase the deterrent effect of refunds by extending the time period of possible refunds and give customers a stronger incentive to notify the Commission immediately when they perceive manipulation of the electricity markets because customers will have access to greater refunds.

Congress can also increase civil and criminal penalties under the Federal Power Act (FPA) and Natural Gas Act (NGA). These changes will provide stronger deterrents

to anticompetitive behavior, market manipulation, and other violations of the FPA and NGA. Currently, FPA section 316A provides for a civil penalty authority of up to $10,000 per day for violations of Section 211, 212, 213 or 214. These penalties could be broadened to all sections of the FPA and increased significantly. The NGA contains no provision to allow the Commission to level civil penalties. The Commission supports a recent White House proposal to increase the penalty for willful and knowing violation of the FPA from the current $5,000 level to $1 million and that the potential prison term be increased from two to five years. For a violation of the Commission's regulations under the FPA, the White House proposed to increase the penalty from $500 per day to $25,000 per day. A similar provision could be added to the NGA.

Finally, Congress can help by clarifying the Commission's jurisdiction with regard to RTOs. Since RTOs help solve many of the problems observed in recent experience, Congress should clarify the Commission's authority to require RTO membership.

## OFFICE OF MARKET OVERSIGHT AND INVESTIGATIONS

### Vision

Vigilant oversight and vigorous enforcement of proper market rules ensure dependable, affordable, competitive energy markets to benefit end use customers and other participants.

### Mission

Guide the evolution and operation of energy markets to ensure effective regulation and protect customers through understanding markets and their regulation, timely identification and remediation of market problems, and assured compliance with Commission rules and regulations.

### Functions

*Assess market performance through:*

- analyzing market structures and proposing policies for improvement;
- acquiring and analyzing public and proprietary information data bases;
- conducting market research and developing market models and simulations;
- analyzing effects of current and proposed regulations, market rules and policy options; and
- advising the Commission on the market effects of current and proposed policies.

*Ensure conformance with Commission rules through:*

- auditing compliance with Commission rules and reporting requirements;
- investigating actions of market participants;
- facilitating resolution of disputes among market participants and regulated entities; and
- enforcing Commission rules that govern the markets.

*Produce internal and external reports:*

- describing the state of energy markets;
- reviewing and analyzing market occurrences and trends;
- providing early warning of vulnerable market conditions; and
- making recommendations on the functioning and governance of energy markets.

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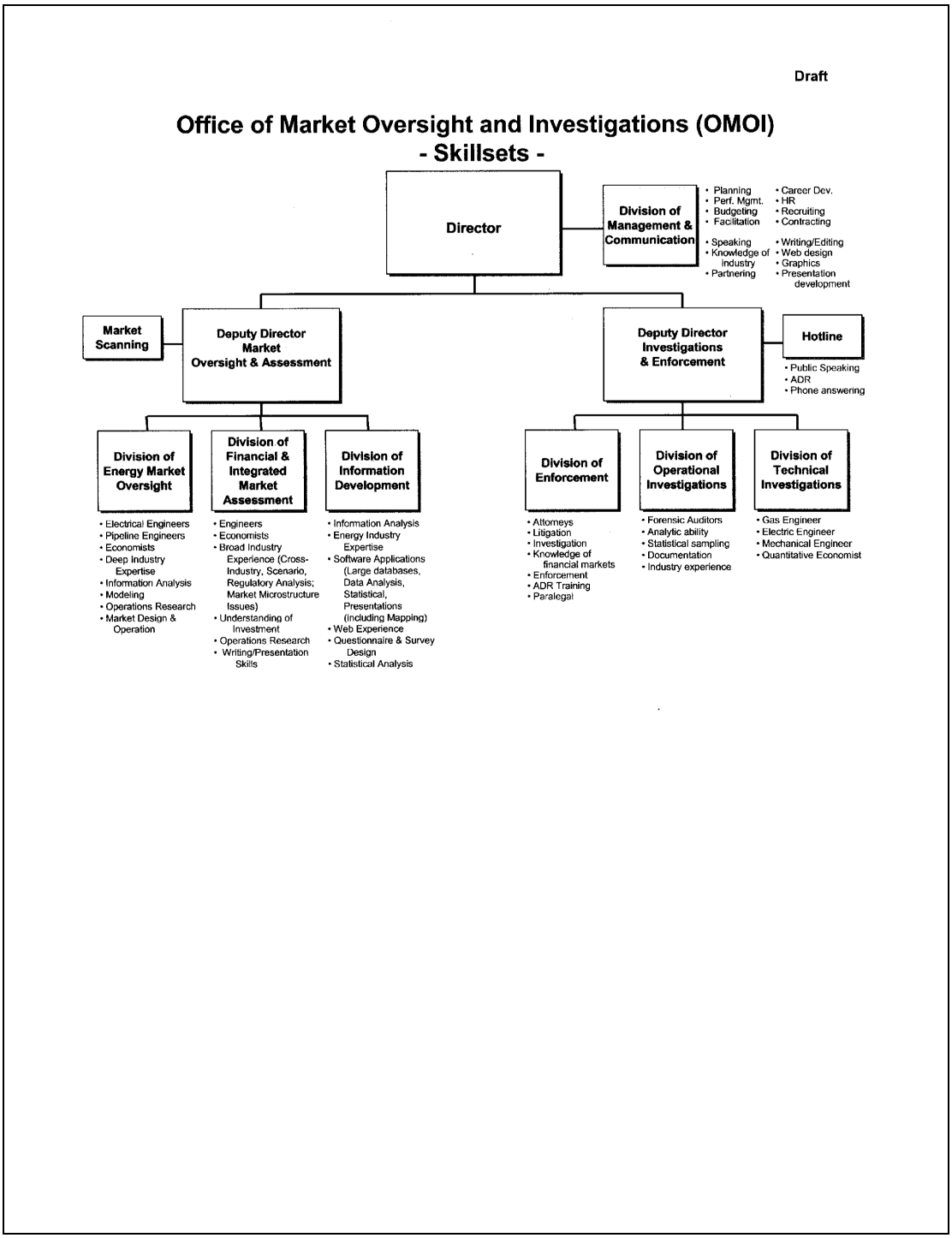
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Office of Market Oversight and Investigations (OMOI)
- Skillsets -
Director
Division of Management & Communication
• Planning
• Perf. Mgmt.
• Budgeting
• Facilitation
• Career Dev.
• HR
• Recruiting
• Contracting
• Speaking
• Knowledge of industry
• Partnering
• Writing/Editing
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• Analytic ability
• Statistical sampling
• Documentation
• Industry experience
Division of Technical Investigations
• Gas Engineer
• Electric Engineer
• Mechanical Engineer
• Quantitative Economist

## OVERSIGHT AND ASSESSMENT ACTIVITIES AND PRODUCTS OVERVIEW

| | MAJOR PRODUCTS | RELATED ACTIVITIES |
|---|---|---|
| **MARKETS** | | |
| Commodity Prices | Analysis and recommendations regarding anomalous prices or other problematic market behavior<br><br>Biweekly Surveillance Report and Early Warnings<br><br>Annual "State of the Markets" (SOM) Report on Structure, Conduct, and Performance; and Quarterly updates ("Report Cards") | Real time monitoring<br><br>Daily tracking reporting<br><br>Economic, financial, and policy analysis<br><br>Support investigations and enforcement initiatives<br><br>Performance metric development and evaluation |
| Basis Differentials | | |
| Market Power | | |
| Market Performance | | |
| **INFRASTRUCTURE** | | |
| Transmission | Annual assessment of adequacy and needs (in SOM)<br><br>RTO Performance Report Cards | Real time monitoring<br><br>Tracking, reporting, and analysis of outages<br><br>Assessments of price effects as function of generation, transmission, and storage status/trends<br><br>Performance metric development and evaluation |
| Generation | | |
| Gas Storage | | |
| New Projects | Annual assessment of progress in accelerating approvals and completions | |
| **BACKGROUND** | | |
| Weather | Look-ahead scenario development to assess range of important "uncontrollable" factors for quarterly reports<br><br>Reports on actual versus expected patterns and price behavior<br><br>Reports on major changes and market implications (M&A, credit watches, regional economic surprises, major policy changes from outside FERC) | Daily monitoring<br><br>Strategic scanning<br><br>Analysis of effects on prices and access |
| Economic Activity | | |
| Corporate Behavior | | |
| Other Regulatory Developments | | |
| Other | | |

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## INVESTIGATIONS AND ENFORCEMENT ACTIVITIES AND PRODUCTS, BY TYPE OF EFFORT

| | HOTLINE | AUDIT | INVESTIGATIONS | | |
|---|---|---|---|---|---|
| | | | INFORMAL | FORMAL/ ENFORCEMENT | WITH OTHER AGENCIES |
| **MARKETS** | | | | | |
| | Market power abuse<br>Affiliate abuse<br>Other, including tariffs and rates<br>Transmission issues (Gas, Electric, or Oil)<br>Service changes<br>Coordination with OMTR | Market trading practices<br>Market-related transactions<br>ISO/RTO operations<br>RTO Board/MMU Independence<br>Affiliate abuse<br>Conformity of RTO rules with tariff and actual operation | Market power abuse<br>Withholding, physical and economic<br>Market rule violation<br>Other<br>Affiliate abuse, for example:<br>Between transmission companies and affiliates<br>Among marketing and supply affiliates<br>Between gas and electric affiliates<br>Market evaluation<br>Commission-sponsored rules<br>Effectiveness of tariffs<br>RTO/ISO tariffs and operations<br>Other (e.g., degradation of service) | | |
| **INFRASTRUCTURE** | | | | | |
| | Landowners<br>Interconnections<br>Environmental issues | OASIS, Internet postings<br>Transmission or Plant outages<br>NERC/WECC activity<br>Transparency of RTO grid operations<br>Constraints, TLRs and OFOs | Market-related infrastructure issues<br>Outages<br>TLRs, OFOs<br>OASIS, Internet postings<br>Gas Construction<br>Uncertificated construction<br>Certificate violations<br>Construction<br>Environmental<br>Landowner<br>Hydro license issues<br>Unlicensed operation or construction<br>License violations<br>Landowner<br>Environmental<br>Construction<br>Other | | |
| **FINANCIAL** | | | | | |
| | | Track SEC reports<br>Credit ratings<br>AICPA pronouncements<br>Corporate accounting policy | | | |
| **PRODUCTS** | | | | | |
| | Informal dispute resolution<br>Referrals<br>Reports<br>Hotline Overview<br>Hotline Detail<br>Hotline Annual<br>Outreach and marketing | Audit reports<br>Survey reports<br>Fact-finding reports<br>Recommendations | Enforcement Recommendations to Commission<br>Report of investigation<br>Request to initiate formal investigation<br>Consent agreement<br>Show cause order<br>Recommendation for rule or policy change<br>Briefs, motions and other pleadings<br>Quarterly Report of Cases<br>Annual Enforcement Report<br>Sharing Information with Other Agencies | | |

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## MANAGEMENT AND COMMUNICATION
### ACTIVITIES AND PRODUCTS

| STRATEGY & PLANNING | OUTREACH | ADMINISTRATIVE | PUBLICATION |
|---|---|---|---|
| **Strategy**<br>Message<br>Long-term Strategy<br>Performance Measures (Commission Markets Program)<br><br>**Planning**<br>Business Planning<br>Office Budget<br>Resource Coordination<br>Office Operation & Program Assessment<br><br>**Commission Coordination**<br>Agenda Tie-in<br>Inter-office coordination<br>Surveillance reporting process | **Facilitate Partnership's with:**<br>MMU/RTO<br>Industry<br>States<br>Academics<br>Think tanks<br>SEC, CFTC, FTC, DOJ<br>Consumer Groups<br>Environmental Entities<br>NAESB<br>Financial Institutions<br><br>**Awards**<br>Individual and/or to organizations for innovation | **People**<br>Recruitment<br>Career Development<br>Performance Evaluations<br>Fellows Programs and Internships<br>Mentoring<br>Orientation<br>Union<br>Ministerial HR<br>• travel<br>• training<br>• awards<br>• other<br><br>**Support**<br>Contracts<br>Procurement<br>CIO<br>Logistics<br>Property<br>Internal Controls | **Services**<br>Document repository<br>Powerpoint<br>Education<br>MORe<br>Editing<br>Formating<br>Standards<br>Internet Expertise |
| **PRODUCTS** | | | |
| GPRA Documents<br>Commission Budget<br>Business Plan<br>Workload Tracking System<br>Agenda Report Coordination | Communication Plan<br>Conferences<br>Speeches<br>Workshops<br>Interviews | New Employees<br>IDP Program<br>Training Sessions<br>Work Environment<br>Resource Acquisition | Reports<br>Articles<br>Glossary<br>Web Page<br>Videos<br>Presentations |

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# Appendix IV: GAO Contacts and Staff Acknowledgments

## GAO Contact

Jim Wells (202) 512-3841
Anu Mittal (202) 512-9846

## Acknowledgments

In addition to the individuals named above, R. Stockton Butler, Elizabeth Erdmann, William Lanouette, and Raymond Smith made key contributions to this report. Important contributions were also made by Stuart Kaufman and Barbara Timmerman.

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