United States Government Accountability Office

GAO

Report to the Committee on Homeland Security and Governmental Affairs, U.S. Senate

September 2008

ELECTRICITY RESTRUCTURING

FERC Could Take Additional Steps to Analyze Regional Transmission Organizations' Benefits and Performance

GAO-08-987

September 2008

ELECTRICITY RESTRUCTURING

FERC Could Take Additional Steps to Analyze Regional Transmission Organizations' Benefits and Performance

GAO Accountability • Integrity • Reliability

Highlights

Highlights of GAO-08-987, a report to the Committee on Homeland Security and Governmental Affairs, U.S. Senate

Why GAO Did This Study

In 1999, as a part of federal efforts to restructure the electricity industry, the Federal Energy Regulatory Commission (FERC) began encouraging the voluntary formation of Regional Transmission Organizations (RTO)—independent entities to manage regional networks of electric transmission lines. FERC oversees six RTOs that cover part or all of 35 states and D.C. and serve over half of U.S. electricity demand. As electricity prices increase, stakeholders—organizations and individuals with financial and regulatory interest in the electricity industry—have voiced concerns about RTO benefits and how RTO expenses and decisions influence electricity prices.

GAO was asked to review (1) RTO expenses and key investments in property, plant, and equipment from 2002 to 2006, the most current data available; (2) how RTOs and FERC review RTO expenses and decisions that may affect electricity prices; and (3) the extent to which there is consensus about RTO benefits. To do so, GAO reviewed documentation and data and spoke with FERC officials and experts.

What GAO Recommends

GAO recommends that FERC develop an approach for regularly reviewing RTO budgets and annual financial reports, and develop and report on standardized measures that track RTOs' performance. FERC generally agreed with our report and recommendations.

To view the full product, including the scope and methodology, click on GAO-08-987. For more information, contact Mark Gaffigan, (202) 512-3841, gaffiganm@gao.gov.

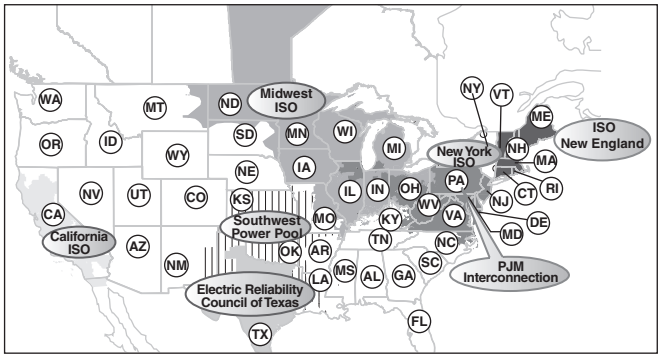
What GAO Found

RTO expenses and investments in property, plant, and equipment vary, depending on the size of the RTO and its functions. Expenses for the six RTOs FERC oversees totaled $4.8 billion from 2002 to 2006, and property, plant, and equipment investments totaled $1.6 billion as of December 2006.

RTOs and FERC rely on stakeholder participation to identify and resolve concerns about RTO expenses and decisions that affect electricity prices, such as decisions about reliability and whether to develop markets for electricity and other services. The stakeholders GAO spoke with in two RTO regions value the opportunity for input but have concerns about the resources and information required to participate. Moreover, although regular review of RTO budgets could help FERC with its responsibility to ensure RTO rates remain just and reasonable or determine if a new rate proceeding is needed, FERC's review of RTO budgets varies. Furthermore, while FERC requires RTOs to report actual expenses annually, it does not regularly review this information for accuracy or reasonableness and is at risk of using and providing to the public inaccurate and incomplete information.

FERC officials, industry participants, and experts lack consensus on whether RTOs have brought benefits to their regions. Many agree that RTOs have improved the management of the transmission grid and improved generator access to it; however, there is no consensus about whether RTO markets provide benefits to consumers or how they have influenced consumer electricity prices. FERC officials believe RTOs have resulted in benefits; however, FERC has not conducted an empirical analysis of RTO performance or developed a comprehensive set of publicly available, standardized measures to evaluate such performance. Without such measures, FERC will remain unable to demonstrate the extent to which RTOs provide consumers and others with benefits—information that could aid FERC in its evaluation of its decision to encourage the creation of RTOs and help address divisions about which benefits RTOs have provided.

U.S. Regional Transmission Organizations



Sources: FERC (data); map (Platts POWERmap, December 2007).

Note: FERC regulates California ISO, ISO New England, Midwest ISO, New York ISO, PJM, and Southwest Power Pool but does not regulate the Electric Reliability Council of Texas.

Contents

Tables

Figures

Abbreviations:

Btu	British thermal unit
FERC	Federal Energy Regulatory Commission
FTE	full-time equivalent
ISO	Independent System Operator
KWh	kilowatt hour
MWh	megawatt hour
OASIS	Open Access Same Time Information System
RTO	Regional Transmission Organization

GAO
Accountability * Integrity * Reliability

United States Government Accountability Office
Washington, DC 20548

September 22, 2008

The Honorable Joseph I. Lieberman
Chairman
The Honorable Susan M. Collins
Ranking Member
Committee on Homeland Security and
Governmental Affairs
United States Senate

The efficient and reliable operation of the electricity industry is critical to the health of the U.S. economy and well-being of Americans. Residential consumers rely on electricity to power their households, and electricity is a key input for businesses that produce trillions of dollars in products and services. Consumer expenditures for electricity amounted to $343 billion in 2007, the most recent year for which annual data were available. After declining in the late 1990s, retail electricity prices rose to an average of nearly 9 cents per kilowatt hour (KWh) in 2006, an almost 9 percent increase from 2005 and the largest annual increase since 1982. Prices surpassed 9 cents per KWh in 2007, and a number of experts anticipate continued price increases in coming years. These rising prices have spurred some to question whether federal policies to introduce competition into electricity markets and new entities to facilitate that change—referred to in this report as wholesale restructuring—have brought improvements or whether they themselves are responsible for rising prices.

For many years, the electricity industry has consisted of regional monopolies that were regulated by states—generally through state utility commissions—and the federal government—through the Federal Energy Regulatory Commission (FERC).[1] During the 1990s, efforts were made to transform the electricity industry from one characterized by monopoly utilities that provided local consumers with electricity at regulated rates to one in which companies compete to sell electricity to customers at prices

[1]FERC oversees wholesale electricity sales and interstate transmission of electricity by privately owned utilities, among other things.

that are determined under more competitive conditions.[2] This restructuring took place in response to statutory and regulatory changes at the federal level and in many states. The overall goal of this broad restructuring was to increase competition in wholesale markets—where power is bought and sold by utilities and other resellers—and retail markets—where power is sold to the ultimate consumer—with the goal of giving electricity consumers benefits such as lower prices and access to a wider array of retail services. Many stakeholders—organizations and individuals with financial and regulatory interest in the electricity industry, including consumer advocacy groups, owners of generation and transmission resources, and others—are interested in whether restructuring has achieved its goals, and how it may have affected prices that consumers pay.

In 1999, as a part of the wholesale restructuring effort, FERC began encouraging the voluntary formation of Regional Transmission Organizations (RTO)—independent entities to manage regional networks of electric transmission lines, called the grid, and give market participants, such as owners of power plants and other sellers of electricity, nondiscriminatory access to these lines.[3] To form an RTO, owners of transmission lines voluntarily agree to turn over operational authority—but not ownership—of their lines to the RTO. FERC encouraged the formation of RTOs to, among other things, improve the pricing of transmission service and ease the entry of new generators, thus promoting efficiency in wholesale electricity markets and ensuring consumers pay the lowest possible price for reliable service. As part of its evaluation of whether to create RTOs, FERC estimated that RTOs could provide significant benefits such as enhanced electric reliability, improved

[2]Consumers often pay a combination of electricity rates and prices. Rates are generally approved by regulators and set to recover the cost of providing a service plus a rate of return. Transmission and distribution expenses, for example, remain regulated and are recovered through rates charged to customers. In contrast, prices for generation are market-based—determined based on the interaction of supply and demand. More specifically, after wholesale restructuring, prices for many sales of wholesale electricity began being determined in organized markets. These prices are passed on to final consumers, unless the state regulatory commission in a nonretail choice state finds a wholesale purchase imprudent. (Wholesale sales also occur bilaterally, and some utilities generate their own power to sell at retail.)

[3]In 1996, prior to its RTO policy, FERC called for the creation of Independent System Operators (ISO). ISO and RTO characteristics are similar, and in many cases, FERC uses the terms interchangeably. However, RTOs are intended to cover a large region and, in practice, tend to be multistate. In this report, we will use the term "RTO" to refer to both RTOs and ISOs.

efficiencies in the management of electricity transmission, and lower electricity prices for consumers, among others. FERC estimated the benefits of RTOs to be at least $2.4 billion annually, due to cost savings from the improved operational efficiency of generators, easier access to transmission service, and other factors.

To date, seven RTOs have developed across the United States, covering part or all of 35 states and the District of Columbia and serving over half of U.S. demand.[4] These RTOs vary in the amount of electricity transmission they manage and the size of territory they serve. Their functions generally include administering electricity transmission, managing and monitoring the competitiveness of wholesale markets for electricity and other services, and planning for long-term reliability.

In parts of the United States with RTOs, wholesale electricity prices are related to decisions RTOs make about system reliability, transmission planning and how to design markets that establish prices for electricity and other services, as well as the operational and investment expenses of RTOs that are recovered through FERC-approved rates. The prices consumers ultimately pay for electricity are affected by the wholesale price, as well as a number of decisions made by regulators about transmission and distribution, among other things, and by the price of fuel used to generate electricity. FERC has statutory responsibility to ensure that prices in wholesale electricity markets—including those administered by RTOs—are "just and reasonable" and not "unduly discriminatory or preferential."[5] To do so, it reviews and approves RTO market rules and monitors the competitiveness of RTO markets. FERC is also responsible for ensuring the rates RTOs charge customers to recover expenses—capital expenses, such as software needed to administer electricity markets, and operational expenses, such as salaries and benefits—are just and reasonable. To do so, FERC conducts formal rate proceedings in which it considers information about proposed RTO expenses and comments from interested parties, though the proceedings may not occur annually. In certain circumstances, it may also consider other sources of

[4]FERC has approved four RTOs: ISO New England, Midwest ISO, PJM Interconnection (in the Mid-Atlantic and parts of the Midwestern United States), and Southwest Power Pool. It has approved two Independent System Operators: California ISO and New York ISO, which, as noted previously, will be referred to as RTOs in this report. The Electric Reliability Council of Texas, an Independent System Operator, is primarily regulated by the Public Utility Commission of Texas.

[5]This authority is granted under Section 205 and 206 of the Federal Power Act, 16 U.S.C. §§ 824d-824e.

information on RTO expenses, including budgets RTOs develop annually that contain information on proposed expenses and an annual financial report—the FERC Form No. 1—that contains information on actual RTO expenses. If necessary, such as when facts are in dispute, FERC may hold a trial-type evidentiary hearing before an administrative law judge before determining the rates for an RTO. Stakeholders also play a role in reviewing RTO expenses and decisions that affect electricity prices by providing comments to the RTOs and FERC.

A number of industry participants have voiced concerns about how RTO expenses and decisions influence electricity prices and whether RTO costs outweigh their benefits. Generally speaking, RTO expenses are small compared to wholesale electricity prices. For example, ISO New England's non-inflation-adjusted expenses were 87 cents per megawatt hour (MWh) in 2006; its average wholesale electricity price was $62.74 per MWh that same year. Because of the potential for RTO markets to influence wholesale, and ultimately consumer, prices, some of consumers' most significant concerns relate to RTO decisions about developing and operating markets for electricity and other services. Experts from industry and the academic community have begun to evaluate these issues, as well as the broader effects of restructuring. In this context, this report provides information about the steps FERC officials and other experts have taken to analyze RTO expenses and benefits. Specifically, this report provides information on (1) RTO expenses from 2002 to 2006 and key investments in property, plant, and equipment; (2) how RTOs and FERC review RTO expenses and decisions that may affect electricity prices; and (3) the extent to which there is consensus about whether RTOs have provided benefits to consumers.

To determine the total expenses incurred by RTOs from 2002 to 2006, the most current year for which data were available when we began our review, and their key investments in property, plant, and equipment, we reviewed independent public auditor reports over this period, as well as information the RTOs reported on their full-time-equivalent personnel and transmission volume.[6] We also reviewed 2006 financial information the RTOs submitted to FERC. We adjusted all expense amounts for inflation with 2007 as the base year. We focused on six RTOs during our study: California ISO, ISO New England, Midwest ISO, New York ISO, PJM Interconnection (PJM), and Southwest Power Pool. We did not consider the seventh, the Electric

[6]RTO financial statements and independent auditors' reports are filed on a calendar year basis, which does not correspond with the federal fiscal year.

Reliability Council of Texas, because it is primarily regulated by the Public Utility Commission of Texas, rather than FERC. To determine how FERC and RTOs review RTO expenses and decisions, we collected broad information from these six RTOs about their analysis of expenses and their decision-making processes. We also conducted site visits and collected more in-depth information for two RTOs—ISO New England and the Midwest ISO. In addition, we spoke with FERC officials and reviewed related documentation that outlined FERC's steps to review RTO expenses for reasonableness. While we generally considered FERC's oversight of RTO decisions, we did not perform an in-depth analysis of FERC's review of specific RTO decisions that may affect electricity prices. Finally, to understand the extent to which there is consensus about whether RTOs have provided benefits to consumers, we interviewed FERC officials and reviewed related documentation, including FERC's initial assessment of RTO expected benefits and academic and industry studies. We also interviewed several experts in the field of electricity restructuring to discuss their opinions on the benefits and costs of RTOs and their assessments of the adequacy of FERC's analysis of RTOs to date. We conducted this performance audit from October 2007 to September 2008 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. A more complete discussion of our scope and methodology is provided in appendix I of this report.

Results in Brief

RTO expenses and investments in property, plant, and equipment vary considerably depending on the size of the RTO and functions it carries out. Inflation-adjusted expenses for the six RTOs overseen by FERC totaled $4.8 billion from 2002 to 2006—ranging from $227 million for Southwest Power Pool, a smaller RTO in terms of 2006 transmission volume and the number of functions it performs, to $1.4 billion for PJM, an RTO with many diverse functions and the largest transmission volume in 2006. Despite having the highest expenses, PJM had the second lowest inflation-adjusted expense per MWh, because RTOs with greater electricity transmission volume can spread their expenses over this volume, thus lowering the amount of RTO-related expenses per MWh. These per MWh inflation-adjusted expenses have varied for the RTOs from 2002 to 2006, with inflation-adjusted expenses for three RTOs rising and three declining. RTOs' Form No. 1 filings to FERC in 2006 provide better visibility of transmission and market expenses than in previous years, because FERC revised the Form No. 1 that year to require reporting of additional

information on these categories of expenses. In 2006, about 17 percent of all RTO inflation-adjusted expenses were for transmission services, 13 percent were for market expenses, 39 percent were for administrative and general expenses, and 31 percent consisted of other expenses. In addition to expenses incurred from 2002 to 2006, the six RTOs also made investments in property, plant, and equipment. These investments, when adjusted for inflation, totaled $1.6 billion as of December 2006 and consisted primarily of software and equipment used to monitor the flow of electricity along transmission lines and administer RTO markets.

RTOs and FERC rely heavily on the participation and views of stakeholders when evaluating RTO expenses and decisions that may affect electricity prices. Specifically, RTOs seek stakeholder input when making decisions that may affect prices, such as developing markets for electricity, and evaluating proposed RTO expenses. RTOs have facilitated the formation of stakeholder committees and working groups to discuss these issues and advise the RTOs' boards of directors, which makes the final decisions. The stakeholders we spoke with in two RTO regions valued this opportunity for input, but found that attending stakeholder meetings was resource intensive. For example, one RTO told us over 600 meetings were open to stakeholders in 2007, and some stakeholders noted that participating in so many meetings could require substantial stakeholder staff and other resources. In addition, stakeholders representing consumers expressed concern that the RTOs did not place adequate emphasis on how decisions may affect consumer prices. For example, some stakeholders expressed concern that RTOs base some of their decisions on overly conservative assumptions about reliability that may raise consumer prices, such as paying noncompetitive generators that these stakeholders did not believe were needed for reliability to remain available for electricity production. Moreover, one stakeholder was concerned that the costs of operating these generators, which may benefit only certain local areas, were unfairly borne by consumers outside those local areas. FERC's reviews of proposed expenses occur when it considers whether the rates RTOs charge are just and reasonable, but the frequency of this review varies. Furthermore, although RTO budgets offer one tool FERC could use to consider whether rates remain just and reasonable between rate proceedings, the extent to which FERC reviews proposed expense information in RTO budgets varies. Some consumer groups have expressed concern over FERC's lack of more frequent, independent analysis of budgets, and without more regular review of this information, FERC may be missing an opportunity to improve its oversight of RTO rates. Furthermore, while FERC requires RTOs to report their actual expenses annually using the FERC Form No. 1, it does not regularly

review this actual expense information for accuracy or reasonableness. This increases the risk that FERC may inappropriately use and provide to the public inaccurate and incomplete RTO financial data, limiting the effectiveness of the Form No. 1 as a tool for determining whether RTO rates are just and reasonable. In fact, in reviewing the 2006 Form No. 1s, we noted a reporting error that overstated certain expenses reported by one RTO by millions of dollars that remained on FERC's Web site for more than a year. After being informed of this error, FERC initiated an audit of whether one RTO's expenses were reported accurately on its Form No. 1. Similar to the RTOs, FERC also emphasizes the stakeholder process when reviewing RTO expenses and decisions that have the potential to affect consumer electricity prices. FERC officials explained that RTO decisions undergo much scrutiny during the RTO stakeholder process and acknowledged that this process is integral to FERC's process for identifying imprudent and unreasonable expenses and its approval of other RTO decisions. While the stakeholder process is likely a useful tool that FERC can use in making such decisions, more scrutiny of RTO budgets and the Form No. 1s could also have a role in supplementing FERC's current oversight of RTO expenses and rates.

FERC officials, industry participants, and experts lack consensus on whether RTOs have brought benefits to their regions that outweigh their costs. Many agree that by integrating multiple transmission systems into larger service areas, RTOs provide opportunities for certain benefits, such as more efficient management of the transmission grid and improved generator access to electricity markets, but some believe that these benefits could have been achieved without RTOs. Many experts and industry participants agree that RTOs are better positioned to more frequently use the least costly and most efficient power plants, although they do not agree about whether this has translated into prices for consumers that are lower than they otherwise would have been. Experts and industry participants are divided about whether the markets developed and administered by RTOs provide benefits to consumers and how they have influenced consumer electricity prices. Specifically, advocates and critics of RTOs debate the extent to which RTO markets, rising fuel prices, and other factors have contributed to rising costs of electricity generation and generally higher prices in RTO regions. Assessments developed by RTOs generally find that RTOs benefit their regions. FERC officials also believe that RTOs have resulted in net benefits to the economy, such as new efficiencies in operating the regional transmission grid; however, FERC has not conducted an empirical analysis of whether RTOs achieved the benefits expected of them or developed a comprehensive set of publicly available, standardized measures to help

evaluate such performance. GAO's Standards for Internal Control identify the value to organizations of comparing actual performance to planned or expected results; however, according to FERC, neither an empirical analysis nor performance measures are necessary parts of FERC oversight of RTOs and both would be methodologically challenging to develop.[7] Experts agreed that a onetime empirical analysis of RTO performance would be difficult but added that tracking certain measures of RTO success—for example, measures relating to transmission and generation investment, plant efficiency, and reliability—could encourage better RTO performance and potentially identify areas for improvement. Without such measures, FERC will remain unable to demonstrate the extent to which RTOs have provided consumers and others with benefits—information that could aid FERC in its evaluation of the success of its decision to encourage the creation of RTOs. Furthermore, information gleaned from such measures could help FERC address the divisions among experts and industry participants about the benefits of RTOs.

To improve its oversight of RTOs, we recommend that FERC (1) develop a consistent approach for regularly reviewing RTO budgets and (2) routinely review and assess the accuracy, completeness, and reasonableness of the financial information RTOs report to FERC in their Form No. 1 filings. To better understand the extent to which RTOs have provided consumers and others with benefits, we are recommending that FERC work with RTOs, stakeholders, and experts to develop standardized measures to track the performance of RTO operations and markets and report the performance results to Congress and the public. FERC reviewed a draft of this report and generally agreed with our report and recommendations.

Background

The electricity industry includes four distinct functions: generation, transmission, distribution, and system operations. Once electricity is generated—whether by burning fossil fuels; through nuclear fission; or by harnessing wind, solar, geothermal, or hydro energy—it is sent through high-voltage, high-capacity transmission lines to areas where it will be used. Once there, electricity is transformed to a lower voltage and sent through local distribution wires for end use by industrial plants, businesses, and residential customers. Because electric energy is generated and consumed almost instantaneously, the operation of an

[7]GAO, *Standards for Internal Control in the Federal Government*, GAO/AIMD-00-21.3.1 (Washington, D.C.: November 1999).

electric power system requires that a system operator constantly balance the generation and consumption of power.

Historically, the electric industry developed as a loosely connected structure of individual monopoly utility companies, each building and operating power plants and transmission and distribution lines to serve the exclusive needs of all the consumers in its local area. Because these companies were monopolies, they were overseen by regulators who balanced different stakeholder interests in order to protect consumers from unfair pricing and other undesirable behavior. Retail electricity prices were regulated by the states, generally through state public utility commissions. States retained regulatory authority over retail sales of electricity, construction of transmission lines within their boundaries, and intrastate distribution. Generally, states set retail rates based on the utility's cost of production plus a fair rate of return. States also approved plans and spending for building new power plants to serve regulated customers. In contrast, wholesale electricity pricing and interstate transmission were regulated by the federal government, principally FERC. Under law, FERC has the obligation to ensure that the rates it oversees are "just and reasonable" and not "unduly discriminatory or preferential."[8] To meet this responsibility, FERC approved rates for transmission and wholesale sales of electricity in interstate commerce based on the utilities' costs of production plus a fair rate of return on the utilities' investment.

Since the early 1990s, the federal government has taken a series of steps to restructure the wholesale electricity industry, generally focused on increasing competition in wholesale markets. Federal restructuring efforts have (1) changed how electricity prices are determined, replacing cost-based regulated rates with market-based pricing in many wholesale electricity markets, and (2) allowed new companies to enter electricity markets.[9] Some of these efforts have focused on allowing nontraditional

[8]This authority is granted under Section 205 and 206 of the Federal Power Act, 16 U.S.C. §§ 824d -824e.

[9]With the advent of restructuring, companies began to request approval from FERC to charge market-based prices. As a result, FERC departed from its historical policy of basing rates upon the cost of providing service plus a fair return on invested capital. FERC initially began considering proposals for market-based prices on a case-by-case basis. Over the years, FERC began granting authority to charge market-based prices to companies that could demonstrate these market-based prices were established in a competitive context. See FERC Order 697, "Market-Based Rates for Wholesale Sales of Electric Energy, Capacity and Ancillary Services by Public Utilities," June 21, 2007.

utilities to buy and sell electricity in wholesale markets, while others have focused on allowing nontraditional utilities to build new power plants and sell electricity to utilities and others.

To facilitate formation of these markets and these companies' efforts to buy and sell electricity, FERC initially required that transmission owners under its jurisdiction, generally large utilities, allow all other entities to use their transmission lines under the same prices, terms, and conditions as those they apply to themselves. To do this, FERC required the regulated monopoly utilities—which had historically owned the power plants, transmission systems, and distribution lines—to separate their generation and transmission functions, and encouraged these companies to form independent entities, called Independent System Operators (ISO), to manage the transmission network.[10] In recognition that these initial efforts were not sufficient, FERC issued Order 2000 in December 1999 to encourage owners of transmission systems to develop more robust organizations, called RTOs, to manage the transmission networks and perform other functions that FERC believed were important. FERC believed RTOs were needed to address impediments to competitive wholesale markets: growing stresses on the transmission grid and remaining discrimination in the provision of transmission service—transmission owners operating their grids in a way that favored their own interests over those of their competitors. FERC Order 2000 encouraged, but did not mandate, that transmission owners join RTOs and allowed companies engaged in purchase and sale of electricity in markets to continue to own power plants, retail utilities, distribution lines, transmission lines, and other assets regulated by FERC or the states.

FERC outlined minimum characteristics that RTOs were to have: independence from control by any market participant, sufficient scope to maintain reliability and support nondiscriminatory power markets, operational authority for transmission facilities under their control, and exclusive authority for maintaining the short-term reliability of the grid they operate. Appendix II describes these characteristics in more detail. In Order 2000, FERC opined that RTOs would achieve the following benefits:

[10]These requirements were outlined in FERC's Order 888—"Promoting Wholesale Competition through Open Access Non-discriminatory Transmission Services by Public Utilities"—issued April 1996.

- eliminate multiple charges incurred when crossing transmission systems owned by different utilities,
- improve management of electricity congestion—bottlenecks resulting from insufficient transmission capacity to accommodate all requests to transport power and maintain adequate safety margins for reliability,
- provide more accurate estimates of transmission system capacity—the amount of electric power the transmission system can manage,
- increase efficiency in planning for transmission and generation investments;
- improve grid reliability, and
- reduce opportunities for discriminatory transmission practices.[11]

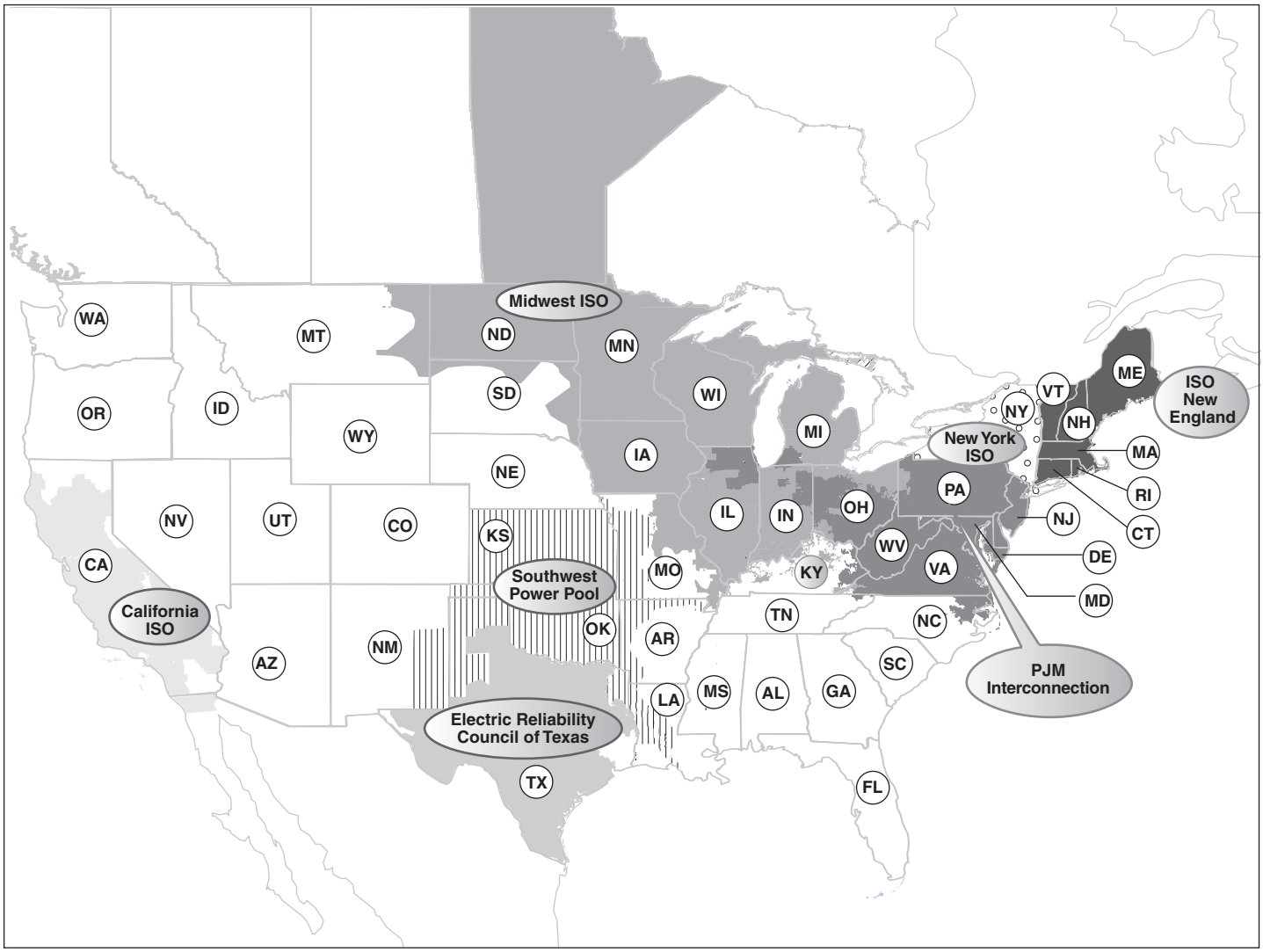
FERC expected the formation of RTOs to result in significant cost reductions, additional efficiencies, and better wholesale market performance, ultimately lowering prices for electricity consumers. Specifically, it estimated RTOs would bring at least $2.4 billion in annual benefits to the industry. Because of their independence, FERC expected RTOs to lead to lighter regulation by reducing the need for resolving stakeholder disputes through the FERC complaint process and allowing FERC to provide additional latitude to RTOs in their transmission pricing proposals, among other things.

FERC's efforts to encourage the formation of RTOs have been relatively successful and RTOs now serve many parts of the country and extend into Canada, as figure 1 shows. FERC oversees six RTOs: California ISO, ISO New England, Midwest ISO, PJM, New York ISO, and Southwest Power Pool.[12] The Electric Reliability Council of Texas is primarily regulated by the Public Utility Commission of Texas.

[11]Other expected benefits included facilitating the development of environmentally preferred generation, increased coordination among state regulatory agencies, reduced transaction costs, and the facilitation of the success of state retail competition programs. Furthermore, RTOs were expected to more effectively manage "parallel path flows," a term that refers to the fact that electricity flows over all possible transmission lines regardless of who owns the lines and what transmission contracts were agreed to. According to FERC, because of this engineering reality, many transmission owners found their grids overloaded by the actions of others. Since they were unable to determine the responsible party, these owners had to curtail their own use of their grids.

[12]As noted in the introduction, throughout this report, we use the term "RTO" to refer to RTOs and Independent System Operators—entities with similar, though not identical, characteristics and purposes.

Figure 1: U.S. Regional Transmission Organizations



Sources: FERC (data); map (Platts POWERmap, December 2007).

Note: This graphic represents the seven U.S. RTOs. FERC regulates six of these RTOs—California ISO, ISO New England, Midwest ISO, New York ISO, PJM, and Southwest Power Pool. It does not regulate the seventh, the Electric Reliability Council of Texas.

RTOs operate, but do not own, electricity transmission lines and are responsible for ensuring nondiscriminatory access to these lines for all market participants.[13] As shown in table 1, the six RTOs under FERC's jurisdiction, in general, are responsible for managing transmission in their regions—by implementing the rules and transmission pricing outlined in their tariffs and performing reliability planning by considering factors such as weather conditions and equipment outages that could affect electricity supply and demand—as well as operating wholesale markets for electricity and other services.

Table 1: Selected RTO Responsibilities

Category	Responsibility	Description	California ISO	ISO New England	Midwest ISO	New York ISO	PJM	Southwest Power Pool
Transmission functions	Service provider	Administers the transmission tariff and provides transmission services. Receives and processes transmission service requests. Determines available capacity.	Y	Y	Y	Y	Y	Y
	Balancing authority	Integrates resource plans regionally and maintains in real time the balance of electricity resources and electricity demand.	Y	Y	N[a]	Y	Y	N
	Reliability coordinator	Ensures the real-time operating reliability of the transmission system.	Y	Y	Y	Y	Y	Y
	Planner	Works with stakeholders to develop overall plans for new transmission needed to meet future projected electricity demand.	Y	Y	Y	Y	Y	Y

[13]Order 2000 neither required nor prohibited RTO ownership of transmission lines. In practice, however, the RTOs developed in the United States do not own transmission lines.

Category	Responsibility	Description	California ISO	ISO New England	Midwest ISO	New York ISO	PJM	Southwest Power Pool
Wholesale energy market functions	Real-time market administrator	Administers a market where electricity is bought and sold at prices determined in real-time to satisfy the difference between projected needs and actual demand. Many of these markets price electricity differently at various locations across the region in order to reflect the costs associated with congestion.	Y	Y	Y	Y	Y	Y
	Day-ahead market administrator	Administers a forward market where electricity is bought and sold for use the following day based on projected customer needs.	N[b]	Y	Y	Y	Y	N
	Ancillary services market administrator	Manages services necessary to support the reliable operation of the transmission system and provision of electricity at appropriate frequency and voltage levels.	Y	Y	N[a]	Y	Y	N
	Capacity market administrator	Administers a system to procure a sufficient portfolio of supply and demand resources to meet future electricity needs and encourage investment.	N	Y	N	Y	Y	N

Legend: Y = yes; N = No.

Source: GAO analysis of FERC and RTO documentation.

[a]These functions for the Midwest ISO are expected to become effective in December 2008, the proposed start date of its ancillary services market.

[b]California ISO's day-ahead markets are expected to start in 2009.

Decisions an RTO makes when carrying out these responsibilities can influence the wholesale price of electricity and ultimately the price consumers pay. A number of other factors outside an RTO's control, such as regulator decisions about what transmission and distribution rates to approve and whether to implement price caps, also influence the prices consumers pay for electricity. Prices are also highly dependent on the cost of fuel used to generate electricity.

Typically, consumer electricity prices are composed of three broad components: (1) distribution, which, for four states GAO contacted, accounts for about 15 to 30 percent of the final price of electricity; (2)

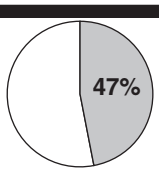
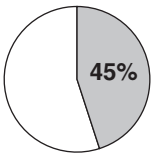
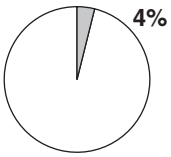
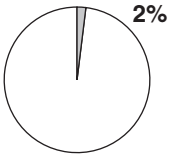
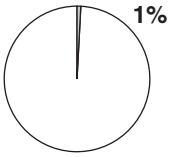
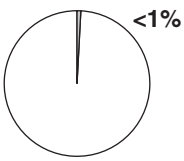
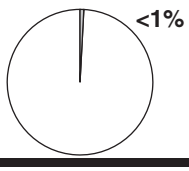
transmission, which accounts for about 5 to 10 percent of the final price; and (3) electricity generation or production, which accounts for about 55 to 65 percent of the final price.[14] In RTO regions, distribution rates continue to be set by state regulators, and transmission rates continue to be set by state and federal regulators. FERC also approves RTO procedures for planning transmission infrastructure, as well as the recovery of transmission expenses. The electricity generation component was previously set by regulators based on the cost of providing electricity plus a rate of return. The price of this component is now determined in RTO-administered markets—regulated by FERC to ensure they are competitive—to the extent that entities choose to buy electricity in these markets.[15] Some RTOs also administer markets that determine the price of other services needed to maintain reliability, such as capacity and ancillary services, in lieu of charging a cost-based rate.[16] The generation portion of consumers' bills may also include administratively determined payments made to generators to maintain reliability—reliability payments, as well as a FERC-approved rate to recover RTO expenses. The size of these components varies from region to region. In New England, for example, on average approximately 47 percent of a typical consumer's bill in 2006 was for electricity, capacity, and ancillary services, the prices of which are determined through the markets this RTO administers. A very small portion of a typical consumers' bill, less than 1 percent, was from ISO New England's rate to recover operational and investment expenses. Figure 2 provides more information.

[14]These figures are based on recent estimates from four states: Connecticut, Indiana, Illinois, and California. Because the source data are from different regions and because utilities in these regions may pass through other charges, such as bond repayments, to customers, estimates may not total 100 percent.

[15]The amount of electricity procured in RTO markets varies across RTO regions. Electricity may also be self-supplied by utilities that continue to own generators or procured through bilateral contracts, agreements made directly between parties. According to figures provided by five of the six RTOs, between 3 and 55 percent of energy transacted in RTO regions is through RTO wholesale markets. Most of the remaining 45 to 97 percent is transacted through bilateral contracts or is self-supplied.

[16]Capacity represents the maximum amount of power that a given system can produce at a particular moment. It reflects the ability to produce electricity when needed and is sold separately from electric power. Ancillary services are necessary to support the reliable operation of the transmission system and provision of electricity at appropriate frequency and voltage levels.

Figure 2: Components of a Typical Consumer's Electricity Costs in New England

Distribution costs[a] ($68.90/MWh) Reflect the cost of building the distribution system, as well as operating and maintaining it	
Wholesale energy price[b] ($66.32/MWh) Reflects a market-determined price for energy (electricity) that includes an energy, congestion, and loss component	
Out-of-market payments (reliability payments)[b] ($5.41/MWh) Reflect nonmarket payments to generators that the RTO determines are needed for reliability	
Transmission costs[c] ($3.60/MWh) Reflect the cost of building the transmission system, as well as operating and maintaining it	
Capacity costs[b] ($1.44/MWh) Reflect a market-determined price for procuring power resources to satisfy the region's future needs	
Ancillary service costs[b] ($1.10/MWh) Reflect the costs associated with providing services to support the reliable operation of the electric grid	
RTO expenses[d] ($0.82/MWh) Reflect the administrative rate charged to ISO New England market participants in 2006 to recover operating and investment expenses	

Source: GAO analysis of information provided by ISO New England.

[a]Distribution costs were determined by ISO New England by surveying the Web sites of distribution companies in New England.

[b]The wholesale energy price, out-of-market payment, capacity, and ancillary service components were calculated by ISO New England according to a FERC-defined methodology and can be found in the 2006 Annual Markets Report.

[c]Transmission costs were provided by ISO New England and represent the total revenue requirement of transmission-owning utilities in the New England region. This revenue requirement covers the transmission owners' costs of building the transmission system and operating and maintaining it. The transmission cost estimate does not include any transmission costs associated with electricity imported into the ISO New England region—those costs would be subsumed in the wholesale price of electricity as reflected in the energy costs estimates.

[d]RTO expenses were provided by ISO New England and reflect the rate charged to market participants to recover operating and investment expenses in 2006.

Because RTOs charge for the use of transmission lines, for certain wholesale sales of electricity, and to recover their own expenses, they are subject to FERC oversight and regulation. In general, FERC regulates RTOs as it does other utilities. FERC's basic rate authority stems from Sections 205 and 206 of the Federal Power Act of 1935 and is to ensure that wholesale electricity rates are just and reasonable and not unduly discriminatory or preferential. Under Section 205, FERC generally has the authority to review and approve expenses and, if applicable, a reasonable rate of return on investment used to serve customers. For RTOs, which are nonprofit entities, rates are generally based on proposed annual expenses and are periodically adjusted based on the actual expenses incurred by the RTOs. RTOs must also seek FERC approval for decisions to implement initiatives such as new markets and changes to existing markets and market rules, among other things. Section 206 authority provides for FERC review of rates already in effect. FERC may initiate Section 206 proceedings if it deems an investigation is needed or in response to a complaint filed by an outside party.[17] FERC has authority to determine if these rates are just and reasonable, set new rates, and may, in some cases, order refunds.

Under Section 205 or Section 206, RTOs or other parties, respectively, file evidence with FERC to support their proposed rates or rate changes. Others can file comments and present any contrary evidence under either provision. FERC conducts hearings, which may include proceedings before an administrative law judge, and makes final decisions. Parties may file appeals, first with FERC and later in federal court.

[17]16 U.S.C. § 824e.

RTO Expenses and Investments in Property, Plant, and Equipment Varied Considerably

From 2002 to 2006, RTO expenses totaled $4.8 billion when adjusted for inflation and varied considerably depending on the size of the RTO and functions it carried out.[18] In general, RTOs with greater electricity transmission volume benefit from economies of scale by spreading their expenses over more units of electricity volume, thereby reducing their expenses per MWh. On a per MWh basis, RTO inflation-adjusted expenses have varied from 2002 to 2006, with ISO New England, Midwest ISO, and New York ISO expenses rising and California ISO, PJM, and Southwest Power Pool expenses decreasing. The expenses per MWh we calculated for PJM for 2002 and 2003 are significantly higher than the amounts it billed its market participants, because we did not retroactively apply financial statement reclassifications to data from prior years. Form No. 1 filings for 2006 made by the RTOs to FERC provide better visibility of transmission and market expenses than prior years' reports did. In 2006, about 17 percent of all RTO expenses were for transmission services, 13 percent were for market expenses, 39 percent were for administrative and general expenses, and 31 percent consisted of other expenses. RTOs also made major investments in property, plant, and equipment—$1.6 billion when adjusted for inflation as of December 2006.

RTO Expenses Totaled $4.8 Billion from 2002 to 2006

From 2002 to 2006, total inflation-adjusted expenses reported in RTO financial statements totaled $4.8 billion, ranging from $227 million for Southwest Power Pool, a smaller RTO in terms of 2006 transmission volume and the number of functions it performs, to $1.4 billion for PJM, an RTO with many diverse functions and the largest 2006 transmission volume. As shown in figure 3, the largest category of expenses for RTOs over this time period was salaries and benefits, accounting for about $1.6 billion, or 33 percent of RTOs' expenses from 2002 to 2006. According to RTO officials, due to the highly technical and sophisticated nature of the functions RTOs must carry out, RTOs require highly trained staff, such as power system engineers, economists, and software engineers. In 2006, all RTOs combined employed 2,737 full-time equivalents (FTE) with an average salary and related benefits of approximately $134,000.[19] Appendix III shows the inflation-adjusted expenses, number of full-time equivalents, and average salary and expenses per full-time equivalent for each RTO

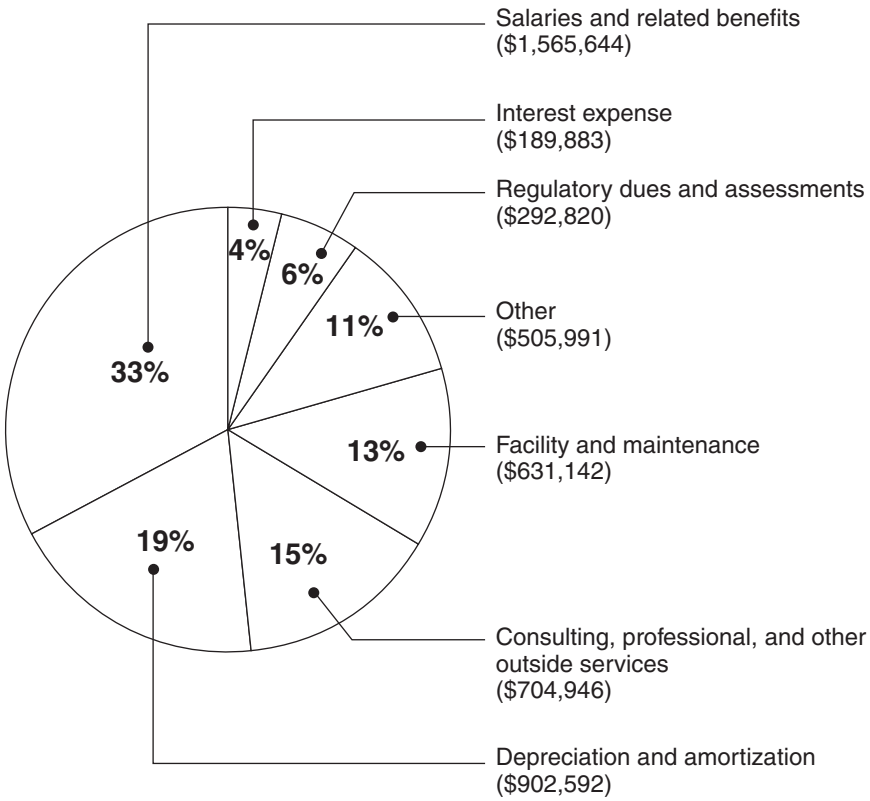
[18]Numbers in this section for expenses, expenses per MWh, rates and investments in property, plant, and equipment are inflation adjusted and presented in 2007 dollars.

[19]FTEs reflect staffing levels at the end of each year reported. As a result, average salary and related benefits per FTE may not reflect RTO staffing changes throughout the year.

from 2002 to 2006. Our analysis reflects total annual expenses as reported in the RTOs' audited financial statements. We did not retroactively apply financial statement reclassifications to data from prior years. Because PJM made retroactive reclassifications that affected its 2002 and 2003 financial statements, in 2002 and 2003, the expenses we calculated for PJM are significantly higher than the amounts it billed its market participants.

Figure 3: Total Inflation-Adjusted RTO Expenses, 2002 to 2006

Dollars in thousands



Source: GAO analysis of RTO independent auditor reports, 2002 to 2006.

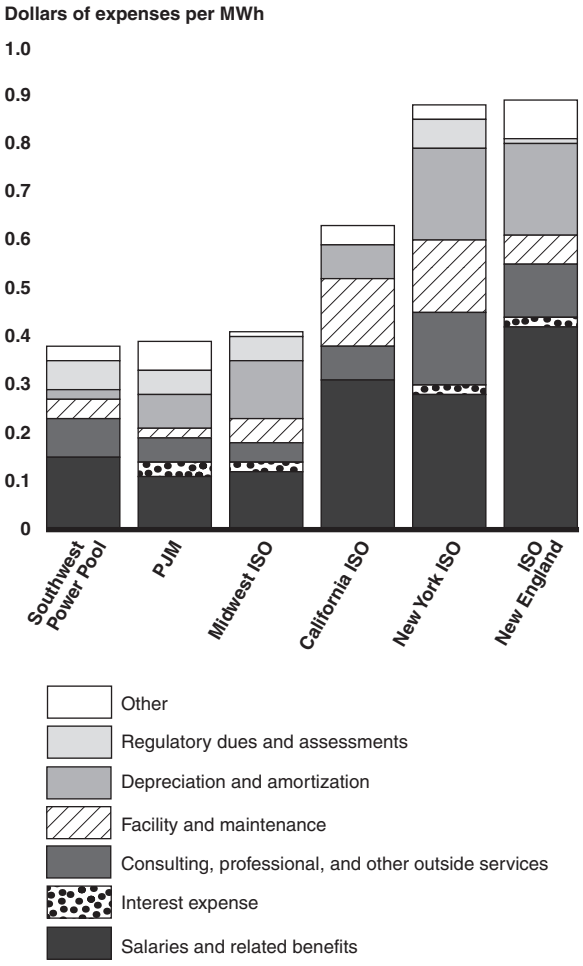
Note: Dollar amounts represent total expenses from 2002 to 2006 and are adjusted for inflation and presented in 2007 dollars. Percentages do not add to 100 due to rounding.

Larger RTOs Benefit from Economies of Scale

In general, RTOs with greater electricity transmission volume benefit from economies of scale—spreading their expenses over more units of electricity volume, thus lowering the amount of RTO-related expenses per MWh. For example, PJM had the highest total inflation-adjusted expenses

among RTOs in 2006—$282 million—but had the second lowest expense per MWh—$0.39 per MWh—because it transmitted a greater amount of electricity than the other RTOs. In contrast, ISO New England had the second lowest expenses in 2006—$118 million—but had the highest expense per MWh—$0.89 per MWh—because it transmitted less electricity. Figure 4 illustrates total RTO expenses in 2006 per unit of electricity transmitted by major category. Appendix IV provides transmission data and expense per MWh data by RTO from 2002 to 2006.

Figure 4: Inflation-Adjusted Expenses per MWh by RTO, 2006



Source: GAO analysis of RTO independent auditor reports, 2006.

Note: Dollar amounts are inflation adjusted and presented in 2007 dollars.

Our analysis reflects total annual expenses as reported in the RTOs' annual audited financial statements, divided by the amount of transmission volume within the RTO. These calculations may result in MWh expenses that differ from what RTOs charge their market participants. Furthermore, we did not retroactively apply financial statement reclassifications to data from prior years. Because PJM made retroactive reclassifications that affected its 2002 and 2003 financial statements, in 2002 and 2003, the expenses per MWh we calculated for PJM are significantly higher than the amount it billed its market participants. For example, in 2002, PJM had expenses of $0.95 per MWh, according to our analysis. According to data provided by PJM officials that we adjusted for inflation, market participants were billed $0.51 per MWh, after refunds and other billing adjustments were taken into account. Similarly, in 2003, PJM had expenses of $0.85 per MWh according to our analysis, but market participants were billed $0.57 per MWh when adjusted for inflation. In addition, RTOs utilize differing billing methodologies. As a result, the rates they charge to market participants may be different than the total expenses per MWh calculated in our analysis. Table 2 shows actual electricity rates per MWh charged to RTO market participants, adjusted for inflation, from 2002 to 2006.

Table 2: Inflation-Adjusted Rates per MWh Charged to RTO Market Participants, 2002–2006

	2002	2003	2004	2005	2006
California ISO	$1.15	$1.17	$1.06	$0.95	$0.79
ISO New England	$0.55	$0.94	$1.01	$0.89	$0.84
Midwest ISO	$0.23	$0.18	$0.25	$0.39	$0.39
New York ISO	$0.77	$0.82	$0.84	$0.84	$0.82
PJM	$0.51	$0.57	$0.49	$0.38	$0.39
Southwest Power Pool	$0.23	$0.21	$0.16	$0.17	$0.16

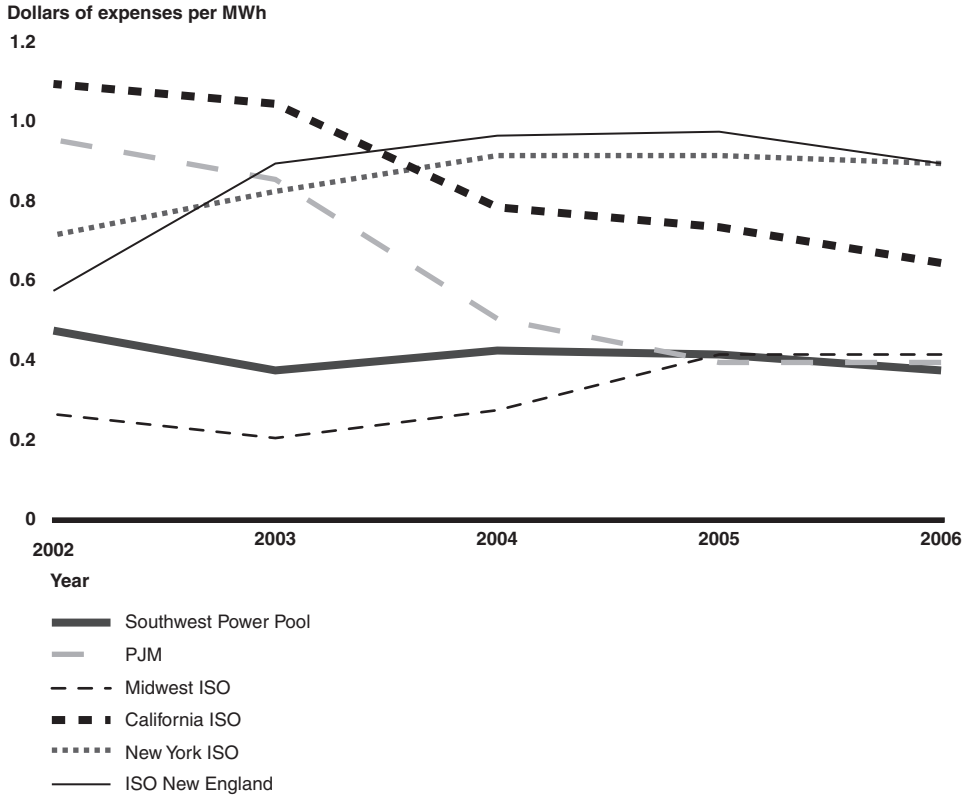
Sources: Rates provided by California ISO, ISO New England, Midwest ISO, New York ISO, PJM, and Southwest Power Pool.

Note: We adjusted these expenses for inflation and present them in 2007 dollars.

Individual RTO Expenses Have Varied over Time

When looked at annually, inflation-adjusted RTO expenses from 2002 to 2006 have varied, reflecting new initiatives implemented by the RTOs and other changes made by management. Figure 5 illustrates changes in RTO inflation-adjusted expenses per unit of electricity transmitted over this period.

Figure 5: Inflation-Adjusted Expenses per MWh by RTO, 2002-2006



Source: GAO analysis of RTO independent auditor reports, 2002 to 2006.

Note: This chart reflects inflation-adjusted expenses as reported on each RTO's annual financial statement. Amounts are in 2007 dollars. In 2004, PJM changed its method of classifying revenues and expenses related to study and interconnection fees for financial reporting purposes. Had 2002 and 2003 expenses been reported as they were from 2004 to 2006, PJM's inflation-adjusted expenses per MWh would have been $0.52/MWh (instead of $0.95/MWh) in 2002 and $0.59/MWh (instead of $0.85/MWh) in 2003.

Several key trends occurred over this period, with the expenses per MWh of three RTOs—Midwest ISO, New York ISO, and ISO New England—rising as they implemented major market and other initiatives. For example, during this period, Midwest ISO expanded its role from coordinating reliability, administering its tariff, and performing transmission system planning to include operating markets for energy and

other services. As a result, Midwest ISO's expenses rose in a number of areas. Salaries and benefits increased as the RTO increased its full-time equivalents from 265 in 2002 to 643 in 2006, in part, to carry out the RTO's expanded operations. Expenses for consulting, professional, and outside services—used, in part, to develop the new markets for electricity and other services—and depreciation and amortization expenses—to recover the costs of major investments, such as information systems and infrastructure related to the electricity market—also increased from 2002 to 2006.[20] Increases in Midwest ISO's expenses were mitigated by its rising transmission load as it took on additional members.

In contrast, California ISO's expenses per MWh hour declined significantly over this time period, particularly in the areas of depreciation and amortization and facilities and maintenance. California ISO officials attributed declining expenses to an organizational focus on keeping expenses low, including a specific cost containment management initiative in 2005, and more economically advantageous contracts in a few key areas. Additionally, as noted in the graphic, PJM changed the way it reported revenues and expenses. Starting in 2004, PJM offset revenues and expenses related to study and interconnection fees. Had 2002 and 2003 expenses been reported as they were in later years, PJM's inflation-adjusted expenses per MWh would have fluctuated over the period and ultimately declined from $0.52 per MWh in 2002 to $0.39 per MWh in 2006. Finally, Southwest Power Pool's expenses per MWh declined slightly over this time period—from $0.47 per MWh to $0.37 per MWh, as increasing overall expenses were mitigated by rising transmission load.

FERC's Revisions to Its Form No. 1 Provide Better Visibility of RTO Expenses Related to Transmission and Markets

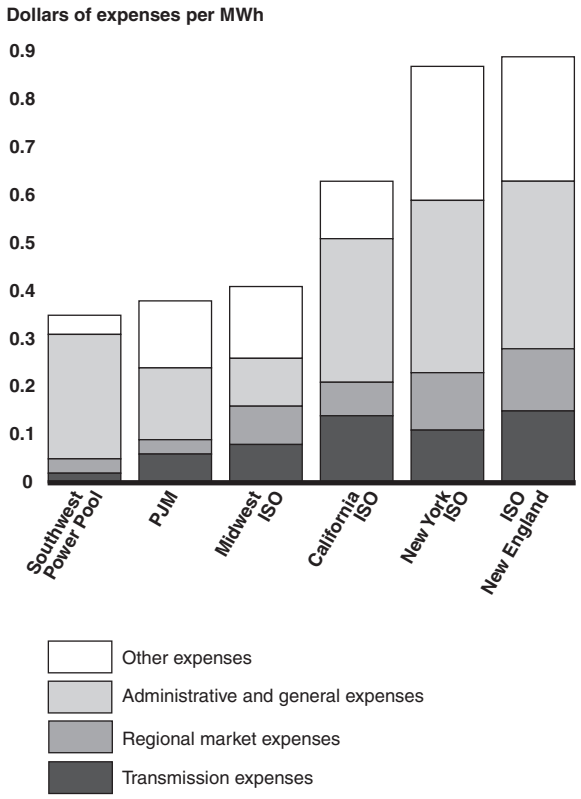
Starting in 2006, FERC required RTOs and other utilities to provide more detailed information about market and transmission expenses on their Form No. 1 filings to improve the visibility and uniformity of RTO and utility financial reporting, and we found that RTO's 2006 Form No. 1s are more transparent than in previous years. FERC officials told us these changes would facilitate review by FERC and the public of RTO expenses and rates. Form No. 1 filings categorize expenses according to two key

[20]Depreciation and amortization expense allocates the acquisition cost of an asset, less its estimated salvage or residual value, over its estimated useful life. This expense reflects the use of the asset during specific operating periods to match costs with related revenues in measuring income or determining the costs of carrying out program activities. RTOs often use depreciation and amortization expenses to recover the costs of financing an asset, such as a computer system or control center.

functions RTOs perform—transmission coordination and market operation—as well as other categories such as administrative and general expenses. In 2006, about 17 percent of all RTO inflation-adjusted expenses were for transmission services, 13 percent were for market expenses, 39 percent were for administrative and general expenses, and 31 percent consisted of other expenses.[21] Figure 6 provides information reported in the Form No. 1 about each of the RTOs' expenses. Appendix V shows 2006 RTO inflation-adjusted expenses as reported on the FERC Form No. 1.

[21]Other expenses include taxes, net interest charges, and expenses related to customer accounts and service.

Figure 6: Inflation-Adjusted Expenses per MWh by RTO as Reported in the 2006 FERC Form No. 1



Source: GAO analysis of RTO 2006 FERC Form No. 1s.

Note: Dollar amounts are inflation adjusted and presented in 2007 dollars. New York ISO, Southwest Power Pool, and PJM expenses reported on FERC Form No. 1 filings do not agree with the expenses noted on the independent auditors' reports due primarily to differences in how certain interest, lease, planning, and other revenues were netted against related expense accounts in the FERC Form No. 1 filings.

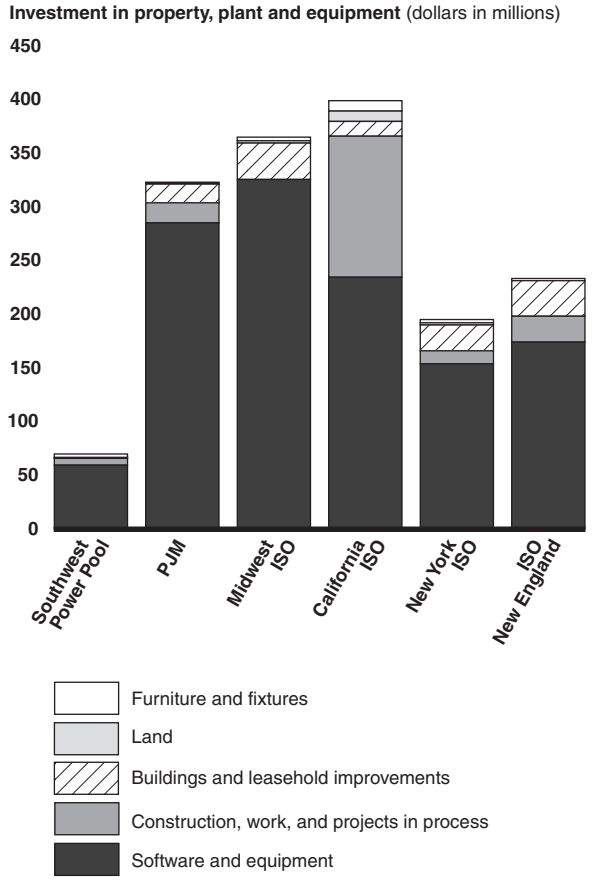
Transmission expenses cover the cost of providing reliability services and monitoring and operating the transmission systems, among other things. Market expenses include the cost of administering markets for electricity and other services, monitoring markets for competitiveness, and related computer software and hardware maintenance, among other things. Administrative and general expenses consist of employee salaries and benefits, rent, and outside services, among other things.

RTOs Have Made Investments in Property, Plant, and Equipment

The six RTOs whose financial statements we reviewed have made investments in property, plant, and equipment. Total inflation-adjusted investment for all RTOs was $1.6 billion as of December 31, 2006, without adjusting for accumulated depreciation.[22] Software and equipment was the largest category of investment at each of the RTOs, as shown in figure 7, and was used by the RTOs to provide various transmission and market services across regions. For example, in 2005, ISO New England began construction of a replacement control center equipped with computer hardware and software to deploy generators, forecast electricity requirements, ensure load is not interrupted in the event of a contingency, and conduct and monitor electricity transfers with other RTOs. Appendix VI shows RTOs' investments in property, plant, and equipment as of December 2006.

[22]Total investment in property, plant, and equipment is not adjusted for depreciation because accumulated depreciation was not allocated to specific asset classes in the independent auditors' reports.

Figure 7: Inflation-Adjusted Investment in Property, Plant, and Equipment as of December 2006



Source: GAO analysis of RTO independent auditor reports, 2006.

RTOs and FERC Rely on Stakeholder Input when Evaluating RTO Expenses and Decisions That May Affect Electricity Prices

RTOs consider stakeholder comments when reviewing RTO expenses and other decisions that may affect electricity prices. In the two RTOs we visited, stakeholders said they valued the opportunity for discussion with the RTOs, but some stakeholders expressed concern that attending meetings was resource intensive and that too little emphasis was placed on how decisions might affect the prices consumers pay for electricity. Furthermore, though RTO budgets offer one tool FERC could use to revisit whether rates remain just and reasonable between rate proceedings, the extent to which FERC reviews proposed expense information in RTO budgets varies. Additionally, although FERC annually requires RTOs to report the actual expenses they incurred, FERC staff have not regularly reviewed or audited these submissions for accuracy and

do not look at them for reasonableness. Instead, FERC relies heavily on stakeholders to raise concerns over proposed expenses and other decisions that may affect consumer electricity prices.

RTOs Consider Stakeholder Comments when Reviewing RTO Expenses and Making Decisions That Affect Electricity Prices

According to senior RTO officials, RTO boards and staff give much consideration to stakeholder comments when reviewing RTO expenses and making decisions that affect electricity prices. They told us that while RTO decisions are independent—stakeholder input is generally advisory—stakeholders play an important role in evaluating RTOs' operations and plans. In particular, although RTOs conduct internal reviews of their proposed expenses, establish controls for reviewing the prudence of expenses, and may perform formal cost-benefit analysis on major initiatives, officials told us stakeholder comments are one of the most important factors when reviewing expenses and making decisions. In general, RTOs solicit comments from stakeholders about their opinions on decisions to modify new market rules, changes to governing documents, and budgets and expenses, among other things. According to RTO officials, in some instances, RTOs are required to secure affirmative stakeholder votes on these decisions prior to proceeding. Specific issues for discussion may be raised by the RTOs, stakeholders, or in response to FERC orders or directives.

Stakeholders generally provide input to the RTO boards of directors in three ways—written communications, oral discussions, and votes—although each RTO has a unique process for soliciting this input, as shown in table 3. RTO officials told us that these processes were developed after extensive negotiations with stakeholders when each RTO was formed. To ensure stakeholder input reflects a range of interests, five of the six RTOs we reviewed group stakeholders with common interests, such as electric distribution companies, transmission owners, and end users. All six of the RTOs we reviewed involve state regulators in their decision-making process, either formally as a unique stakeholder group or informally as participants who attend stakeholder meetings. Though state regulators are not prohibited from voting in stakeholder meetings, most have chosen to participate formally in the process but not vote.[23] Additionally, in several RTO areas, state regulators have formed organizations to collectively represent their interests and advise the RTO. For instance, state regulators in the Midwest ISO formed

[23]State regulating authorities are a formal stakeholder group in Midwest ISO and vote at the primary committee level.

the Organization of MISO States to discuss what decisions the RTO should make and participate in stakeholder meetings.

Table 3: RTO Processes for Acquiring Stakeholder Input

RTO	California ISO	ISO New England	Midwest ISO	New York ISO	PJM	Southwest Power Pool
Stakeholder groups	Not applicable California ISO has identified sectors, but any interested party is considered a stakeholder and is able to participate in meetings.	Transmission Generation Suppliers End users Publicly owned entity Alternative resources	Vertically integrated transmission owner and stand-alone transmission companies Independent power producer/exempt wholesale generator Power marketer Eligible end use customers Municipals/ cooperatives/ transmission dependent utilities Environmental advocates State regulatory authorities Public consumer advocate Coordinating members	Transmission owners Generation owners Other suppliers End use consumers Public power and environmental stakeholders New York Public Service Commission[a]	Transmission owners Generation owners Other suppliers End use customers Electric distribution companies	Investor owned utilities Independent power producers/marketers Large retail customer Small retail customer Cooperatives Municipals Alternative power/ public interest stakeholders State/federal power agencies
Required stakeholder representation on the primary committee	Not applicable	Stakeholders from each stakeholder group	Elected representation (Two participants and one or two alternates) from each stakeholder group	Representation from each member	Representation from each stakeholder group	Representation from each member
Required stakeholder representation on the budget subcommittee	Not applicable California ISO has a formal process for stakeholder review of the budget that is open to any interested stakeholder. It does not have a formal budget subcommittee.	Open to any interested stakeholder	Open to any interested stakeholder, typically includes representation from each stakeholder group	Open to any interested stakeholder	Two members elected by each of the five stakeholder groups and two members of the board	Two RTO directors, two representatives of the non-transmission-owning group, and two representatives of the transmission owners

RTO	California ISO	ISO New England	Midwest ISO	New York ISO	PJM	Southwest Power Pool
Process through which comments are shared with the board	Proposals to the board include a matrix of stakeholder comments on the proposal. Stakeholders can speak directly with the board during board meetings, which are open to the public.	Board receives information on stakeholder votes on the budget and other decisions. Stakeholders can submit documents directly to the board. Board meets with stakeholders regularly.	Board receives information on stakeholder votes on the budget and other decisions. Stakeholders can submit documents directly to the board. Board meets with stakeholders regularly. Stakeholders have the opportunity to speak directly with the board during board meetings.	Board receives information on stakeholder votes on the budget and other decisions. Stakeholders can submit documents directly to the board. Representatives from the liaison committee, composed of representatives from each stakeholder group, meet with the board after board meetings. Board meets with stakeholders regularly. Stakeholders with a minority opinion can appeal a decision with the board.	A record of stakeholder votes and summary of comments is provided to the board of directors. At least two board members attend each meeting of PJM's highest committee. Any PJM member can provide comments to the board in writing. Board meets with a liaison committee composed of representatives of each sector at least once quarterly to discuss current topics. Board holds general sessions with all PJM members for panel discussions of current topics twice annually.	Board receives information on stakeholder votes on the budget and other decisions. Stakeholders in the primary committee meet with the board and provide feedback on behalf of stakeholders. Stakeholders have opportunity to speak directly with the board during board meetings.
Voting requirement to approve a decision/budget at primary committee	Not applicable	Two-thirds support to pass; each stakeholder group has a weighted vote	Simple majority support to pass; each stakeholder group has a weighted vote	58 percent support to pass; each stakeholder group has a weighted vote	Two-thirds support to pass; each stakeholder group has a weighted vote	66 percent support to pass;[b] votes are weighted among two groups: transmission owners and transmission users
Stakeholder input is advisory to the RTOs' board	Yes	Yes	Yes	Yes[c]	Yes[d]	Yes[e]

Source: GAO analysis of data from RTOs.

Note: This table describes the RTO process for acquiring stakeholder input on a variety of decisions. As required by FERC Order 890, each RTO must also have an open and transparent transmission planning process in which, according to RTO officials, stakeholders play a critical role. Each RTO uses a different structure to achieve this goal.

[a]In New York ISO, the New York Public Service Commission participates in stakeholder meetings but does not vote.

[b]In Southwest Power Pool, the primary committee does not vote on the budget. The finance committee votes by simple majority to recommend the budget to the board.

[c]In New York ISO, Section 205 filings with FERC require an affirmative stakeholder vote except in exigent circumstances since New York ISO operates under a shared governance agreement.

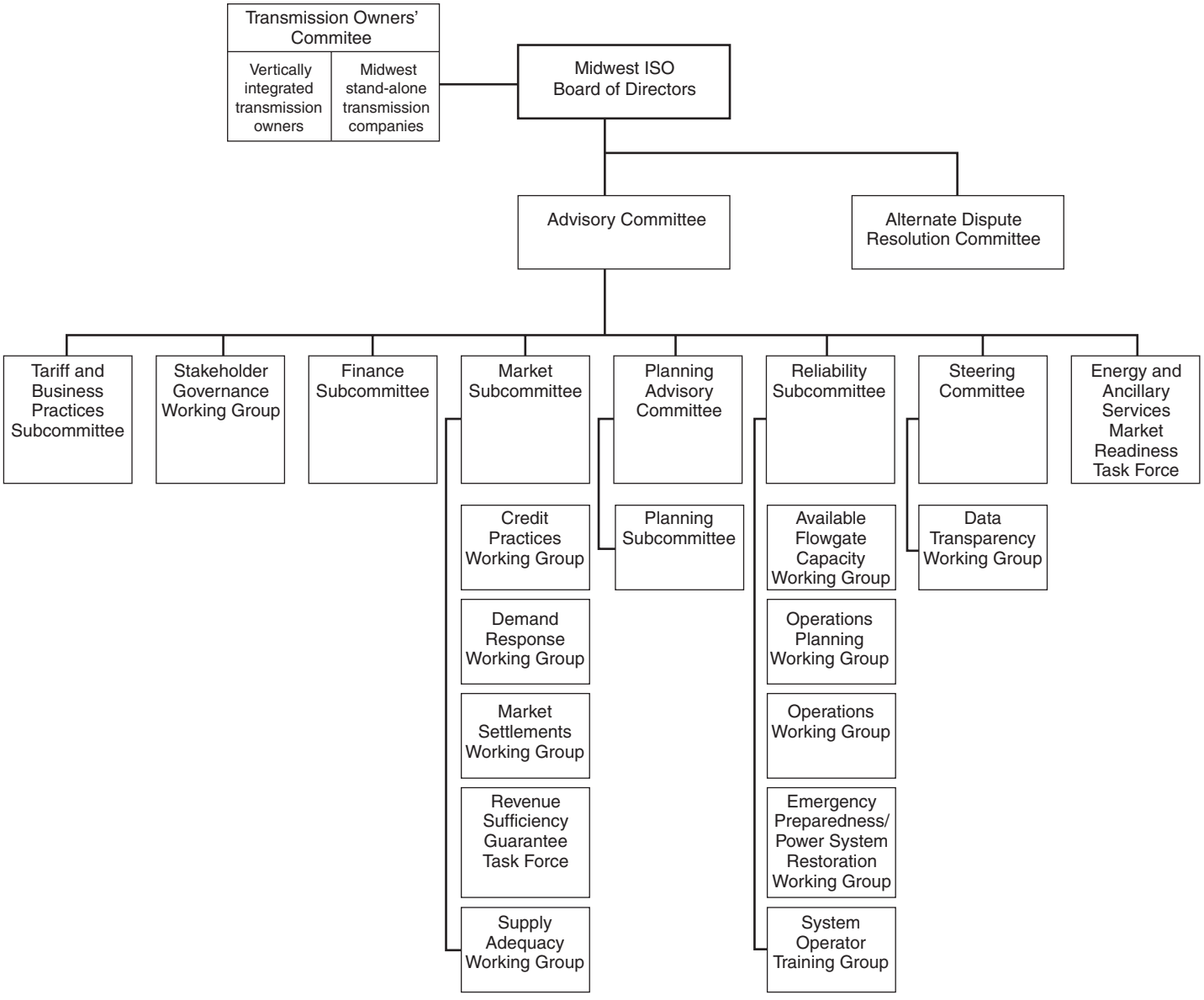
[d]In PJM, a stakeholder vote is required in order to make changes to its structure and governance.

[e]In Southwest Power Pool, some stakeholder committees that report to the board have been delegated certain decision-making authority.

In general, stakeholders participate in the RTO decision-making process through a primary committee that reports to the board of directors and a range of lower-level committees and working groups that report to the primary committee.[24] Lower-level committees and working groups tend to focus on narrow subjects or specific initiatives such as development of specific markets or proposed changes to existing rules, and lower-level committees often involve stakeholders with expertise in the specific subject matter. The primary committee and lower-level committees and working groups hold regular or episodic meetings that stakeholders participate in. These meetings are open to participation by any stakeholder with an interest in attending. As shown above, stakeholders representing many perspectives, from generators to groups representing consumers, participate. Because of the numerous, simultaneous matters under consideration, there can be many meetings potentially relevant to stakeholders. Subjects discussed and analyzed in lower-level committee and working group meetings are eventually raised for discussion at the primary committee meeting, where a vote is taken about whether to recommend a decision be pursued by the board of directors. (See fig. 8 for an example of the Midwest ISO's committee structure. Midwest ISO's primary committee is called the Advisory Committee.)

[24]California ISO is unique among the six RTOs we reviewed in that it does not use a committee structure to solicit input from stakeholders. However, California ISO stakeholder meetings and board meetings are open to all interested parties.

Figure 8: Midwest ISO's Committee Structure



Source: Midwest ISO.

RTO staff may facilitate discussions within the primary committee, as well as lower-level committees and working groups, and may also prepare analyses to help stakeholders understand how a decision might affect them. For example, as agreed to when its RTO status was approved, Southwest Power Pool must develop a cost-benefit analysis before making

the decision to implement a new market rather than relying on cost-based pricing of a service. Other RTO officials told us that although they may develop formal cost-benefit analyses for some major decisions, such as changes to key market rules, the stakeholder process is a key way in which the cost and benefits of a decision are discussed.

Most RTOs have a specific lower-level committee to review and analyze RTO budgets that contain information about proposed expenses. According to RTO officials, RTOs and stakeholders discuss and jointly determine organizational priorities, which influence the RTO's preparation of a draft budget. Stakeholders serving on the budget committee review the budget's proposed expenses and provide recommendations. Discussion of the budget is then taken up by the primary stakeholder committee, which then votes whether to recommend to the board that the budget be adopted.[25] The composition of the subcommittee that initially reviews the budget differs among the six RTOs. For example, PJM's budget committee consists of equal representation from each formal stakeholder group plus two members of the independent board. ISO New England's budget committee is open to participation by any stakeholder.

Stakeholders Value the Opportunity for Discussion with RTOs, but Some Believe Inadequate Emphasis Is Placed on Consumer Prices

Most stakeholders we spoke with in the two RTOs we visited—ISO New England and Midwest ISO—valued the opportunity for discussion with their respective RTOs and believed that RTOs facilitate an open and democratic process that focuses on reaching consensus among stakeholders. However, most stakeholders in these two RTOs found the process resource intensive, specifically the stakeholder meetings, which require staff time and travel costs. RTOs may carry out hundreds of stakeholder meetings annually, as shown in table 4.

[25]In Southwest Power Pool, the finance committee recommends the budget to the board and votes by simple majority. The primary committee does not vote on the budget.

Table 4: Estimated Stakeholder Meetings by RTO, Calendar Year 2007

RTO	California ISO	ISO New England	Midwest ISO	New York ISO	PJM	Southwest Power Pool
Number of Stakeholder Meetings	57[a]	184[b]	611	280	330	202[c]

Sources: California ISO, ISO New England, Midwest ISO, New York ISO, PJM, and Southwest Power Pool.

[a]California ISO's estimated number of stakeholder meetings excludes meetings conducted for the start-up of the Market Redesign and Technology Update, those hosted by California ISO departments, and lower-level committee and working group meetings.

[b]ISO New England's estimated number of stakeholder meetings excludes lower-level committee and working group meetings related to the regional system plan process.

[c]Southwest Power Pool's estimated number of stakeholder meetings includes only meetings posted to its Web site that require an agenda and minutes.

Stakeholders must prepare for meetings by reviewing documentation and preparing comments, and the ability of stakeholders we spoke with to do so varied significantly. Individual stakeholders in the two RTO regions we visited estimated they devoted a range of time—from less than one-half of a full-time equivalent to 5 full-time equivalents—to stakeholder involvement annually. In some cases, stakeholders told us they are not able to attend all meetings they would like to due to resource constraints. For example, stakeholders from ISO New England's public power sector told us they often have to rely on other stakeholders to attend meetings in their place, because they lack the resources to participate themselves. Many stakeholders told us they believe the level of their participation determines their influence on RTO decisions.

In the two RTOs we visited, many stakeholders representing and serving consumers, such as consumer advocates and state commissioners, were concerned that RTOs do not place adequate emphasis on assessing the implications on consumer electricity prices of decisions, such as whether to build new transmission lines, when to create markets for services in lieu of charging cost-based rates, and reliability decisions. Several of these stakeholders believed that RTOs overemphasize ensuring reliability without full consideration as to whether lower-cost options are available. For example, some ISO New England stakeholders we spoke to believed the RTO was overly conservative when determining whether noncompetitive generators were needed for reliability. They believed that, as a result, the RTO entered into unnecessary and costly contracts to keep these inefficient generators running. They observed that this could lead to higher consumer electricity prices, which they did not believe were

justified, since they did not agree the generators were needed to ensure electricity was delivered reliably. Moreover, one stakeholder we spoke to was concerned that the cost of operating these generators, which may benefit only certain local areas, were unfairly borne by consumers outside those local areas. Officials from ISO New England acknowledged that there can be trade-offs between reliability and costs, but said transmission-planning efforts and their new capacity market are effective in keeping payments for reliability as low as possible. They and other RTO officials explained that fulfilling their mission of ensuring reliability and efficient markets will minimize consumer prices in the long run. A number of stakeholders representing and serving consumers in these two regions were concerned, however, that the RTOs do not conduct enough cost-benefit analyses of how decisions may affect electricity prices. Others felt they had inadequate access to data and resources to conduct such analyses themselves. Some RTO officials told us that while they always consider the costs and benefits of a decision before making it, formal cost-benefit analysis may not always be practical, because it is difficult to estimate the potential impact of a decision on electricity prices, how benefits and costs could change over time, the appropriate assumptions to be made, and how different stakeholders are affected. They noted that individual stakeholders already give much consideration to the costs and benefits of a given decision when discussing it during stakeholder meetings.

There was disagreement among stakeholders in ISO New England and Midwest ISO about which groups have, and should have, more influence with RTOs; however, many stakeholders agreed that participating in stakeholder meetings and, in particular, participating in lower-level committees and working groups, provided the best opportunity to influence RTOs' proposed expenses and decisions that may affect electricity prices. Although most stakeholders we spoke with thought ISO New England and Midwest ISO worked hard to solicit comments from all stakeholders, many believed that when making decisions, the RTOs deferred more to certain stakeholders and that because RTOs were created through the voluntary agreement of the transmission owners, the RTOs were more likely to defer to their interests than to others'. Other stakeholder groups we spoke with in ISO New England and Midwest ISO commented that state regulators have a large influence on the RTOs' decisions. A number of state public utility commission officials disagreed with this view. In particular, one state regulator stated that because state regulators are charged with protecting the public interest, their opinions should carry greater weight than those of participants whose interests are primarily profit-oriented.

The Frequency of FERC's Review of Proposed RTO Expenses Varies

The frequency of FERC's review of proposed RTO expenses varies, with reviews of certain expenses not being conducted for years at a time. FERC's review of proposed expenses occurs when it conducts a proceeding to evaluate whether the rate an RTO charges customers to recover these expenses is just and reasonable and not unduly discriminatory or preferential.[26] Because of variation in the manner and frequency with which rate proceedings are conducted, FERC's consideration of proposed RTO expenses can be infrequent.[27] For example, in 2001, FERC conditionally approved Midwest ISO's rate for recovering expenses associated with administering its tariff and ensuring reliability. Because Midwest ISO has not since asked to change its rate for recovering these expenses, FERC has not reviewed these expenses since 2001.[28] FERC officials explained that more frequent review of proposed RTO expenses is not necessary because RTO expenses and decisions undergo much scrutiny during the RTO stakeholder process. Moreover, according to these officials, stakeholders are in the best position to know whether RTO expenses are prudent and reasonable. As a regulator, FERC may initiate a new rate proceeding if it believes an RTO's rates are no longer just and reasonable. While, as FERC points out, stakeholder comments and complaints are an important piece of FERC's consideration, more frequent review of proposed expenses could also aid FERC in determining whether a rate remains just and reasonable. Table 5 shows when each RTO's rate for recovering expenses was last approved.

[26]In five cases in 2004, FERC's Office of Enforcement conducted limited reviews of RTO budgets and expenses during the course of audits to determine RTO compliance with governance policies, practices, and procedures.

[27]According to FERC, the rate-setting process involves extensive examination of expenses, interventions by customers and other stakeholders, and months of testimony and cross-examination before an administrative law judge. It can be an expensive and time-consuming process and may take years to complete. FERC's rates for RTOs tend to remain in place for years.

[28]In 2004, FERC did review Midwest ISO's rate for recovering expenses associated with operating its financial transmission rights and energy market. However, it has not reviewed Midwest ISO's tariff administration and reliability expenses since 2001.

Table 5: Last FERC Decision to Approve Rates to Recover Expenses

RTO	Date of last FERC approval of rates
California ISO	**2005**[a]
ISO New England	**2007**
Midwest ISO	**2001 and 2004**[b]
New York ISO	**2004**
PJM	**2006**
Southwest Power Pool	**1999**[c]

Source: GAO analysis of FERC information.

Note: FERC allows RTOs and other utilities to bill customers using a stated rate or a formula rate. With a stated rate, the RTO cannot exceed a fixed rate of x cents per MWh. With a formula rate, FERC approves a multipart formula for recovering expenses. Once approved, the formula itself does not change, although the expenses inputted into that formula and therefore the rate charged to customers may vary. Midwest ISO, New York ISO, California ISO, and Southwest Power Pool use formula rates. ISO New England and PJM use stated rates.

[a]California ISO's rates were approved by FERC in 2005 for the years 2004 through 2006. In 2006 and 2007 FERC reviewed and accepted changes to the tariff that extended the same rates through 2008. California ISO has subsequently filed rate changes to be effective upon implementation of its FERC-approved Market Redesign and Technology Upgrade program, which is expected to occur in 2009. These changes have not yet been approved by FERC.

[b]Midwest ISO's rate for recovering tariff administration and reliability expenses was conditionally approved in 2001. Its rate for recovering expenses associated with operating markets for energy and other services was approved in 2004.

[c]Southwest Power Pool's formula rate for its tariff administration charge was last approved in 1999, before Southwest Power Pool became an RTO. In 2004, FERC reviewed and accepted revisions to Southwest Power Pool's nonrate terms and conditions. On July 31, 2008, SPP filed a Section 205 revised tariff request with FERC in order to increase the rate cap for its administration charge.

RTOs annually develop budgets that contain extensive information on proposed expenses; however, FERC's use of RTO budgets as a tool in reviewing proposed RTO expenses varies. For example, ISO New England agreed with its stakeholders to submit operational and capital budgets to FERC for annual approval. Southwest Power Pool submits annual copies of its operating and capital budgets for informational purposes, rather than for FERC approval. The other RTOs either do not submit budgets or do so infrequently, despite the fact that these budgets could provide FERC with potentially valuable information about proposed RTO expenses that could help it in ensuring the rates RTOs charge customers are just and reasonable. For example, FERC could use such information to regularly benchmark RTO spending on key categories, such as market oversight or capital investments. (Table 6 outlines the frequency with which RTOs submit budgets to FERC for review.) FERC officials pointed out that FERC staff sometimes attend stakeholder meetings, including discussions about the budget, to observe what concerns stakeholders raise. They also

noted that RTOs post their budgets on their Web sites annually, allowing FERC and the public to view them if so desired.

Table 6: RTO Budget Submissions to FERC

	Budget submission to FERC	
RTO	**Operational**	**Capital**
California ISO	Not currently[a]	Not currently[a]
ISO New England	Annually submitted to FERC for approval	Annually submitted to FERC for approval with quarterly updates
Midwest ISO	No	No
New York ISO	No	No
PJM	No	No
Southwest Power Pool	Annually but for informational purposes	Annually but for informational purposes

Source: FERC and RTOs.

[a]California ISO last submitted its revenue requirement for approval by FERC for the year 2004. A settlement agreement approved by FERC in 2005 provided that the California ISO need not make an annual filing unless its revenue requirement exceeded the cap specified in the agreement. The settlement agreement expired at the end of 2006. The California ISO filed in 2006 and again in 2007 to extend the provisions that allow it to defer filing its revenue requirement.

Some representatives of stakeholder groups including public utility commissions, consumer groups, and the publicly owned sector expressed concerns over FERC's infrequent review of budgets or lack of independent analysis of proposed RTO expenses. They expressed concern that FERC deferred too much to the stakeholder process within the RTOs, assuming stakeholders had adequately resolved all concerns. These stakeholders were concerned that without more scrutiny of proposed expenses, FERC could not be sure that the RTOs were as cost-effective as possible. We found that RTO expenses may change over time, and some—such as expenses for outside consultants—may decrease between the times FERC reviews the rates. Furthermore, without more consistency in how FERC reviews proposed expenses, customers may not fully benefit from potential improvements or efficiencies RTOs achieve. For example, for the 2008 Midwest ISO budget, expenses as approved by the finance subcommittee and the board of directors for outside services decreased by 24.4 percent, while its net operating expense increased by 1.2 percent. The total cost of salaries and benefits increased by 10 percent, offsetting some of the increased efficiency in the area of outside services. In the stakeholder process for the 2007 budget, the finance subcommittee expressed concerns about the continued increase in staffing levels and how that need was determined. They recommended that Midwest ISO

develop financial metrics to evaluate and compare and contrast Midwest ISO's financial results. Since Midwest ISO's proposed expenses were not regularly reviewed by FERC, FERC may have missed an opportunity to determine whether Midwest ISO's salaries were reasonable and ensure that Midwest ISO customers benefited from lower outside service expenses.[29] More broadly, without regular, recurring analysis of RTO expenses, such as through review of RTO budgets, it is not clear that FERC is as well positioned as it could be to know whether certain expenses are reasonable and RTOs are as cost-effective as possible. Such knowledge could supplement comments from stakeholders and help FERC determine whether rates remain just and reasonable or when a new rate case should be initiated.

FERC Does Not Regularly Review or Assess Actual RTO Expenses

FERC does not routinely review or assess the accuracy or reasonableness of expenses RTOs report annually using the Form No. 1. FERC officials told us they use the financial information in the Form No. 1 to carry out FERC's responsibilities and post this information to their Web site for use by public utility customers, state commissions, and the public so that they can assess the reasonableness of electric rates. However, during the course of our work, FERC officials told us they did not routinely audit or review the Form No. 1s for accuracy or completeness. When we began our work, FERC had not audited any RTO FERC Form No. 1 filings for accuracy or completeness, although in 2004 it performed some limited review of the Form No. 1s during the course of other audits. In May 2008, FERC initiated an audit of Midwest ISO that includes a more in-depth examination of its Form No. 1. FERC officials told us it is the RTOs' responsibility to ensure that the FERC Form No. 1 filings are accurate and complete and said that it requires public accounting firms to attest that they have audited RTOs' balance sheets, statements of income, retained earnings, and cash flows contained in their Form No. 1s in conformity with FERC's Uniform System of Accounts requirements. Auditor opinions confirm that CPAs audit the above statements in the Form No. 1 but may not audit all supporting schedules.

Without more regular audits and review of actual expense information for accuracy, FERC may be at risk of unknowingly using and providing to the

[29]According to FERC officials, through their attendance at Midwest ISO Advisory Committee meetings, they would most likely be aware of these and other stakeholder issues.

public inaccurate and incomplete RTO financial data, limiting the effectiveness of the Form No. 1 as a tool for determining whether rates are just and reasonable. For example, during the course of our audit work, we noted a significant reporting error on Southwest Power Pool's 2006 Form No. 1 filing. In 2006, Southwest Power Pool reported $88 million in rent and $175 million in maintenance of general plant expenses; however, we noted actual rent and maintenance of general plant expenses were $830,000 and $440,000, respectively. FERC officials said that in 2006 several RTOs experienced problems using FERC's software program to file their Form No. 1s, due to an unforeseen delay in implementing software updates. To correct the errors, a revised schedule was added to Southwest Power Pool's 2006 Form No. 1 filing. However, maintenance of general plant expenses was still overstated in the revised schedule by approximately $3 million, and the revised schedule was not clearly referenced by the original schedule. FERC said the error did not affect electricity rates; however, the overstated expense information remained posted on FERC's Web site for over a year, where public utility customers, state commissions, the public, and other parties that may be interested in reviewing RTOs' expenses could access it. In August 2008, Southwest Power Pool submitted a revised FERC Form No. 1 that corrects the error. Furthermore, according to FERC officials, the Office of Enforcement is taking steps to incorporate a system of electronic data validation checks into the FERC Form No. 1 submission software to help ensure the accuracy of the FERC Form No. 1 filings before they are submitted. FERC anticipates having the validation checks in place for the 2008 FERC Form No. 1 submission year and told us that once the checks are implemented, an error like the one identified at Southwest Power Pool can be corrected prior to the entity submitting its FERC Form No. 1 filing. Because these checks have not yet been implemented, we cannot review their effectiveness. We believe that while they will likely help identify and correct some reporting errors, they do not constitute the comprehensive review of the Form No. 1s for accuracy and completeness that FERC staff could perform through audits or other review.

FERC does not routinely review RTOs' reported expenses to ensure that they are reasonable, noting that Form No. 1 information on expenses is made public and interested parties can file a complaint about their concerns. FERC officials from the Office of Energy Market Regulation observed that the Form No. 1 might sometimes be used to detect potentially unreasonable expenses but told us they do not analyze them due to limited resources. Moreover, although FERC compared expenses across RTOs in 2004 as a means to estimate the potential expense involved in creating new RTOs, FERC officials do not regularly compare expenses

across RTOs or create expense benchmarks to use as an analytical tool in evaluating just and reasonable rates or as a way of determining whether efficiencies realized by one RTO could be applied to another.[30] FERC and RTO officials said that the varied nature of RTO functions would make regular comparison of actual RTO expenses challenging and of limited value. Several stakeholders we spoke with, including a former RTO executive, disagreed, observing that comparisons among RTOs could help raise questions about the appropriateness of expenses. Without reviewing actual RTO expenses for reasonableness, FERC may not be as well positioned as it could be to ensure the rates RTOs charge to recover their expenses are just and reasonable and that RTO funds were spent according to how FERC and the stakeholders approved them to be.

FERC Relies on Stakeholders to Raise Concerns over RTO Expenses and Decisions

FERC relies heavily on stakeholders to raise concerns about RTO expenses and other decisions with the potential to affect electricity prices. FERC officials acknowledged that the process through which RTO stakeholders review information on proposed expenses contained in RTO budgets is integral to identifying imprudent and unreasonable expenses between RTO rate cases. Parties who disagree with RTO expenses can file comments when an RTO's rate for recovering these expenses is being evaluated at FERC during rate-setting proceedings. In one instance, in November 2005, the Attorneys General of Connecticut and Massachusetts submitted comments to FERC about ISO New England's proposed 2006 budget, contesting executive salaries that they believed were unnecessarily high. FERC found the proposed salary expenses to be just and reasonable after reviewing the entire record in the proceeding, including all comments and ISO New England's comments that surveys and benchmarks showed the salaries were competitive. However, FERC did not perform any independent analysis of ISO New England salaries or review the surveys or benchmarks ISO New England cited.[31] FERC also did not conduct comparisons of salaries across RTOs, although FERC officials

[30]FERC's 2004 work was presented in "Staff Report on Cost Ranges for the Development and Operation of a Day One Regional Transmission Organization." October 2004.

[31]According to an ISO New England representative, nonprofit RTOs must comply with Internal Revenue Service standards governing the reasonableness of compensation for executives, including base salaries. Executive compensation must fall within a range of competitive practices for total compensation paid by similarly situated organizations, both taxable and tax-exempt, for functionally comparable positions. To ensure compliance with these procedures, ISO New England has engaged a nationally recognized, independent consulting firm to evaluate compensation offered by similarly situated entities.

said that had this information been introduced into the record, it would have considered it. As with stakeholder review of proposed expenses, FERC officials told us the Form No. 1 is a tool to provide stakeholders with ready access to data needed to assess the prudence of actual RTO expenses, and that its information is key to stakeholders knowing when a new rate case may be needed.

FERC also explained that stakeholders can file a complaint that rates are not just and reasonable at any time. [32] However, several stakeholders told us that because FERC places the burden of proof on the complaining party, it is difficult and resource intensive to file a complaint. These stakeholders told us that they typically lack the staff and resources to file a complaint and said that it is difficult to obtain the data and conduct the analysis necessary to support it. For example, one state regulator noted that the data needed to show that expenses are not just and reasonable is typically proprietary and that such complaints are difficult to win, since the burden of proof is high. FERC officials confirmed that they have heard over the years that it can be challenging to make complaints and win. They said consumer groups sometimes felt they were at a disadvantage compared to transmission owners and generators because they have fewer resources, including staffing and funding, to file and support complaints. FERC officials also noted that if an evidentiary hearing was deemed necessary, their staff might provide some analytical assistance.

As in its reviews of expenses, FERC also places much emphasis on the stakeholder process when reviewing RTO decisions with the potential to affect electricity prices, and FERC offers stakeholders the opportunity to provide additional evidence for its consideration prior to making a final decision. For example, in 2006, FERC conducted a proceeding related to a proposed PJM decision to develop a capacity market—a market designed to attract new generation and other resources to ensure PJM can meet future electricity needs. PJM's proposal resulted from years of work and numerous stakeholder meetings. Additionally, PJM and numerous parties submitted thousands of pages of comments in support and against the proposed decision, which FERC evaluated. FERC issued a final order on this proceeding in December 2006. In May 2008, numerous stakeholders,

[32]Rate-setting proceedings at FERC involving proposed rates are generally conducted under authority granted in Section 205 of the Federal Power Act and are commonly referred to as Section 205 hearings. The authority of FERC to receive complaints that existing rates are not just and reasonable is generally under Section 206 of the Federal Power Act and are commonly referred to as Section 206 complaints.

including public utility commissions and consumer advocacy groups, filed a complaint with FERC alleging the initial model PJM used for establishing the price of capacity produced excessively high prices and did not deliver commensurate benefits. Complainants are asking for rate relief, which they estimate to be about $12 billion. The Maryland Office of the People's Counsel calculates that excess charges to Maryland residential customers will average $570 over 3 years. FERC evaluated the merits of this complaint and supporting documents. On September 18, 2008, it dismissed the complaint but granted a request for a technical conference to determine if further action would better achieve this market's goals.

Experts, Industry Participants, and FERC Lack Consensus on the Benefits of RTOs

Experts, industry participants, and FERC lack consensus about whether RTOs have provided net benefits to consumers. Many key experts and industry participants agree that RTOs can provide certain benefits, such as more efficient management of the transmission grid and improved access by independent generators. However, there is some disagreement about whether RTOs' access to additional lower-cost generating resources has led to electricity prices for consumers that are lower than they otherwise would have been. Furthermore, experts and industry participants are divided on the benefits of RTO markets and their effect on consumer electricity prices. Some critics of RTO markets believe that RTO markets have not fully achieved anticipated benefits and contribute to higher consumer electricity prices, while proponents believe RTO markets have kept prices lower than they otherwise would have been. Some RTOs have developed assessments to demonstrate the benefits they have provided to their regions. FERC officials share the view that RTOs have resulted in benefits to the economy, such as new efficiencies in operating the regional transmission grid, but FERC has not conducted an empirical analysis to measure whether these benefits were realized or developed a comprehensive set of publicly available, standardized measures that can be used to evaluate RTO performance.

Many Agree That RTOs Can Improve Management of the Transmission Grid and Access

Many industry participants and experts agree that RTOs provide opportunities for more efficient management of the transmission grid and can improve access by independent generators. They believe that because RTOs integrate multiple transmission systems into a larger service area, they have broader knowledge of the grid's transmission capacity and wider perspective on events that can affect reliability, allowing them to more efficiently manage the grid. For example, Midwest ISO now centrally controls operation of a vast transmission network spanning 15 states that was once overseen by 24 different system operators who had to work

together to address any reliability problems such as the unexpected loss of a key transmission line or power plant. Some also believe that because RTOs integrate multiple transmission systems into a larger service area, they keep electricity buyers and sellers from paying multiple fees for each transmission network they use—previously a disincentive to trade power across multiple utilities' transmission systems. In addition to the benefits of centralized management of the transmission grid, many experts and industry participants believe RTOs have improved independent generators' access by reducing discrimination. They note that because RTOs operate the grid independently and do not own generation or transmission resources themselves, they have no incentive to discriminate when providing transmission access. According to a representative of independent developers of new generation we spoke to, this improved access has allowed new generators to more easily connect to and use the transmission system. A representative of buyers of power, on the other hand, told us this improved access has allowed buyers of power opportunities to purchase electricity from new suppliers, although this representative questioned whether the prices they receive for that electricity are better. Despite much agreement that RTOs have provided opportunities for more efficient management of the transmission grid and improved access, some industry participants we spoke with believed RTOs were not the only way to provide these benefits. They question whether similar benefits could be achieved using other mechanisms, such as power pools—groups of utilities that have entered into agreements to coordinate electricity supply, like those that have existed along the East Coast for more than 30 years.

Many Agree That RTOs Provide Opportunities to Lower Costs of Producing Electricity, but Some Question whether This Improves Consumer Prices

Many experts and industry participants agree that RTOs are better positioned than individual utilities to make use of lower-cost generators more frequently, although they do not agree whether this has resulted in electricity prices for consumers that are lower than they otherwise would have been.[33] By overseeing a region formerly run by many individual utilities, RTOs have more generators at their disposal than the individual utilities did. Because RTOs generally use the generators with the lowest bid first—according to some, the least costly and most fuel efficient—they may be able to more efficiently meet requirements for electricity reserves, lower the cost of producing electricity, and use fuel more efficiently.

[33]Lowering the cost of electricity production can result in lower electricity prices, higher profits for generators and others that sell electric power, or a combination of both effects.

However, some industry participants we spoke with questioned whether this has kept electricity prices for consumers lower than they otherwise would have been. They noted that generator bids may not always reflect their costs of production and that in some cases, lower costs of production have led to higher profits for generators rather than lower consumer prices.

Experts and Industry Participants Are Divided on the Benefits of RTO Markets and Their Effect on Consumer Electricity Prices, Generator Efficiency, and Infrastructure Investment

Experts and industry participants are divided on whether RTO efforts to create and oversee markets have lowered electricity prices and led to other benefits, such as improved generator efficiency and more investment in electricity infrastructure. Studies of restructuring draw differing conclusions.

Experts and Industry Participants Are Divided on RTOs' Influence on Electricity Prices

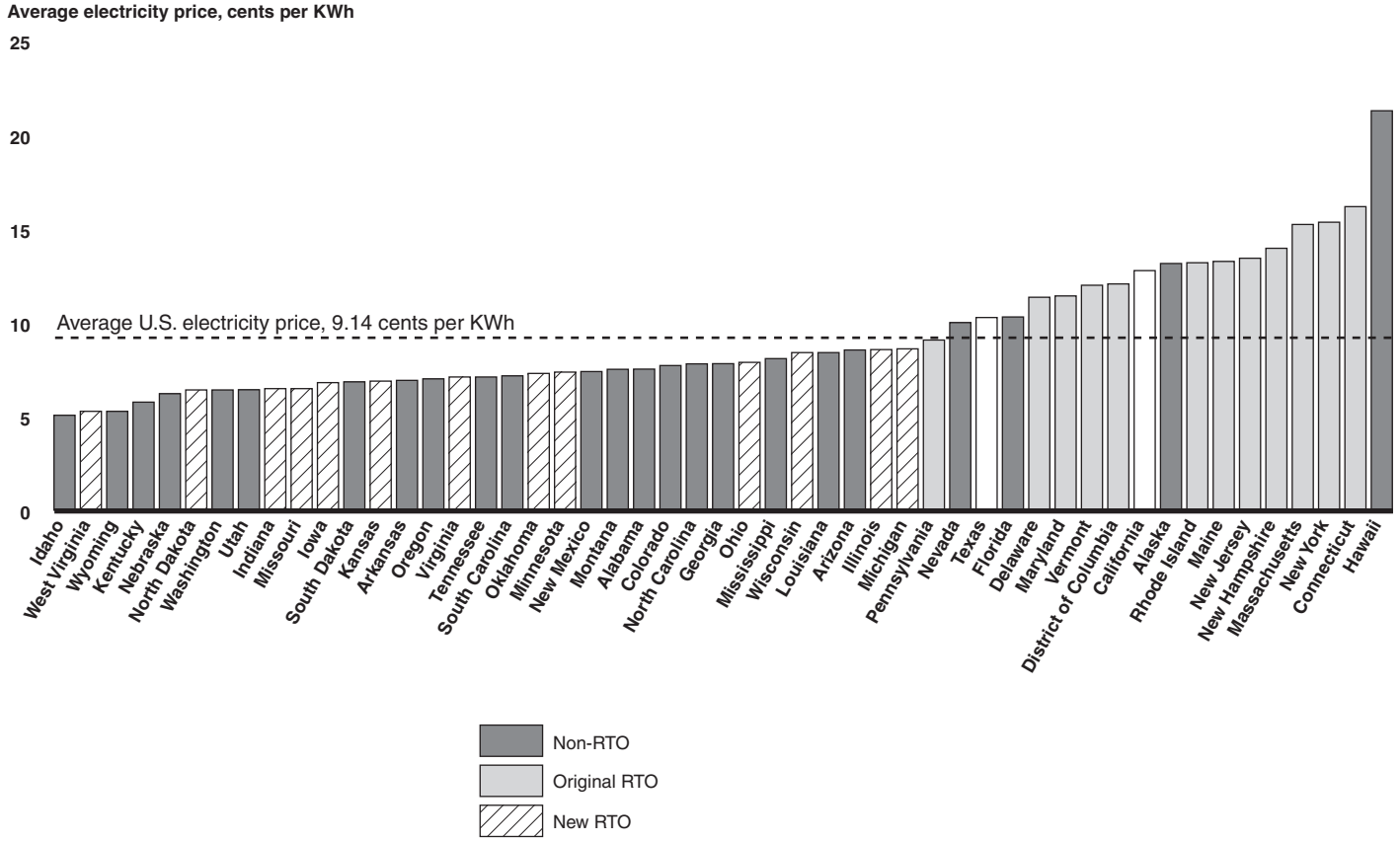
Experts and industry participants debate how RTO markets have influenced the prices consumers pay for electricity. Critics of RTO markets believe these markets have not fully achieved anticipated benefits and have contributed to the higher prices for electricity seen by consumers, because markets are expensive to establish and operate, and as currently designed, produce higher wholesale prices than would otherwise occur. RTO markets use multiple types of generators—coal, nuclear, natural gas, and others—in satisfying consumer demand, and the different costs of fuels for these generators, among other factors, contribute to different costs of electricity production. RTO markets select the smallest amount of generating resources needed each day to provide reliable service. To do so, these markets generally rank and accept generator bids in the market in order of lowest to highest and pay generators, regardless of their costs of production or fuel, the price bid by the last generating unit needed to satisfy demand. Critics believe this pricing approach reduces the benefits for consumers of using varied types of generators, because low-cost generators, like nuclear and coal plants, receive the same price as higher-cost generators, like natural gas plants, when higher cost generators are needed to satisfy demand. Supporters of RTOs believe this pricing approach, by rewarding low-cost generators, promotes efficiency and provides an incentive for new low-cost generators to enter the market, leading to lower prices in the long run than otherwise would have been the case. They note that price transparency in RTO markets is valuable and can signal profit-making opportunities for potential new entrants. They believe that this, coupled with improved access to the grid, can encourage market entry by, among others,

developers of renewable energy sources, such as wind power. Proponents of RTO markets observe that price transparency may also encourage demand response—consumers lowering electricity usage in response to price signals—which can lead to lower, less volatile prices. RTO officials explained that while RTO markets establish wholesale prices for electricity traded in them, a number of other factors also influence the price consumers ultimately pay. Furthermore, much electricity is supplied from sources outside RTO markets, for example, when utilities use their own generators to self-supply or when two parties directly negotiate a transaction with each other. However, critics believe that the pricing approach used by RTO markets has led to higher prices for directly negotiated contracts as well, because low-cost generators recognize that they can often receive the price bid by higher-cost generators in the RTO marketplace.

A state-by-state analysis of electricity prices reveals differences between RTO and non-RTO regions that have likely led to concerns about the impact of RTO markets on electricity prices. We considered retail electricity prices in four regions of the country: (1) original RTO states—states that joined an RTO in 1999 or earlier and were historically in a power pool, (2) new RTO states—states in an RTO region after 1999, (3) non-RTO states—states outside RTO regions, and (4) California.[34] As shown in figure 9, 11 of the 17 states with above-average retail electricity prices are in the original RTO group. California also had above average prices in 2007.

[34]See appendix I for a more complete description of our methodology. Our analysis was based on state-level data that we obtained from the Energy Information Administration on electric power retail sales and electric revenues. We divided the states into four geographic groups. Over the time period analyzed, California's electricity industry went through turbulent changes that would unduly influence any grouping in which it would otherwise fall; therefore, we included California in a category by itself. We did not include Texas in our analysis, because its market is largely unregulated by FERC. A listing of states in each category is in appendix I.

Figure 9: Retail Electricity Prices by State, 2007



Source: GAO analysis of Energy Information Administration data on estimated 2007 retail electricity prices.

Note: Information for California is presented separately from the three primary groups in the legend. We also present information on Texas in this graph for purposes of comparison, although the wholesale market in most of Texas is not regulated by FERC.

To further understand the basis for these disagreements, we analyzed retail electricity prices for industrial customers, because we believe that trends in industrial prices more closely reflect trends in wholesale prices, which RTOs are most capable of influencing. However, this relationship is not perfect, because, as noted earlier in the report, many other factors influence retail prices. Furthermore, numerous wholesale transactions occur outside RTO markets.

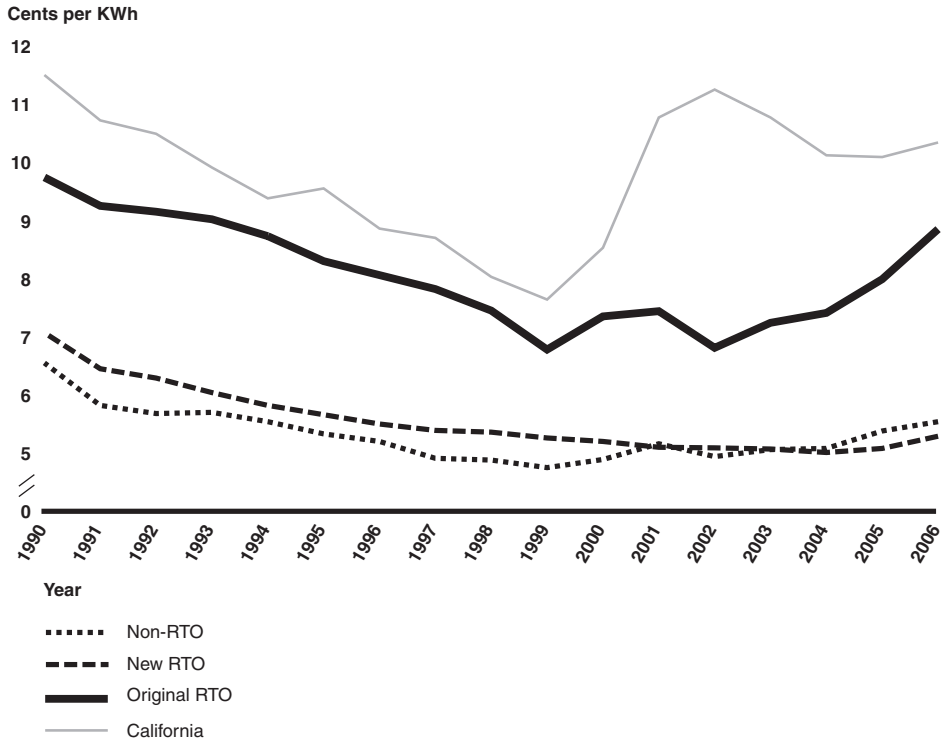
As shown in figure 10, inflation-adjusted electricity prices for industrial consumers have been consistently higher in the original RTO states than in the new and non-RTO states over the entire period. Prices in the original RTO states fell from 1990 to 1999 but have since risen close to prior

levels.[35] However, in recent years, the rate of price increases in the original RTO states has generally been higher than in the non-RTO states. It is important to note that this price analysis does not isolate the impact of RTOs on prices. It is not possible to draw conclusions about what impact the establishment of RTOs has had on electricity prices without properly accounting for and isolating the impacts of other factors, such as the cost of fuels used to generate electricity, changes in the fuel mix, and changes in consumer demand.[36]

[35]We found similar relationships by examining indexes of prices, relative to the national average, which are reflected in appendix VII.

[36]Various studies have used economic techniques to isolate the impacts of restructuring and RTOs from other factors that influence electricity prices. These studies reach different conclusions, as shown in appendix VIII.

Figure 10: Change in Inflation-Adjusted Retail Electricity Prices for Industrial Consumers, 1990-2006

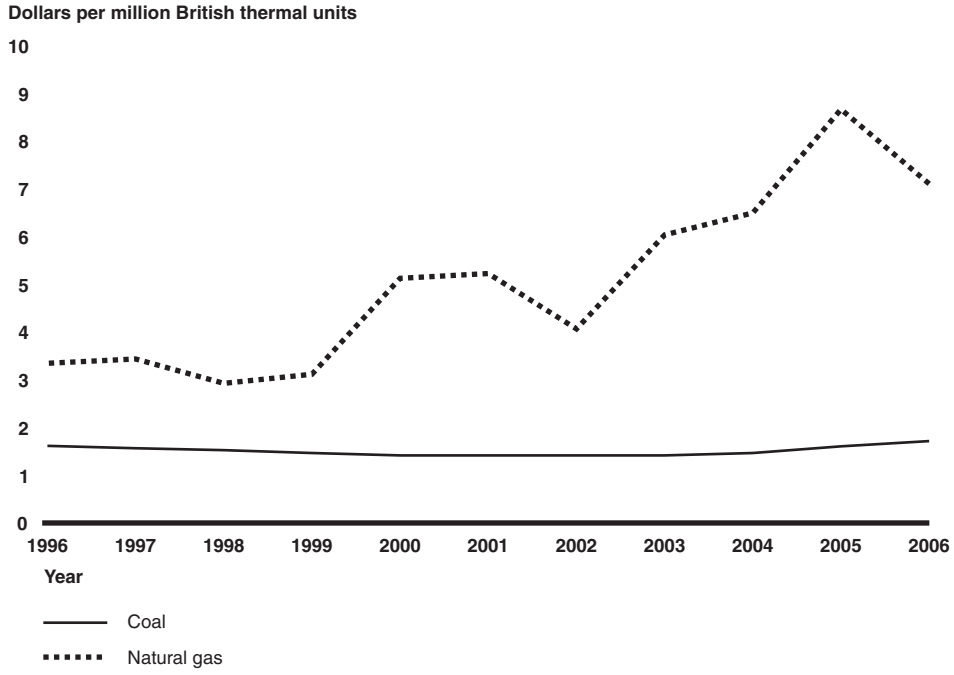


Source: GAO analysis of Energy Information Administration data.

Note: At the time of our review, the annual data series from Energy Information Administration used for this figure did not include 2007 estimates.

Experts generally agree that fuel prices play a large role in determining electricity prices. However, they disagree about the magnitude of their influence. Prices for fuels commonly used to generate electricity—such as coal and natural gas—have increased in recent years, with prices of natural gas rising more dramatically than those for coal over this period. Figure 11 illustrates how average prices of fuels used in the electricity sector have changed from 1996 through 2006. Compounding this overall trend, the original RTO region tends to rely more heavily on natural gas than the non-RTO region.

Figure 11: Inflation-Adjusted Prices of Coal and Natural Gas Used to Generate Electricity, 1996-2006



Source: GAO analysis of Energy Information Administration data.

Note: Prices are presented in 2007 dollar values.

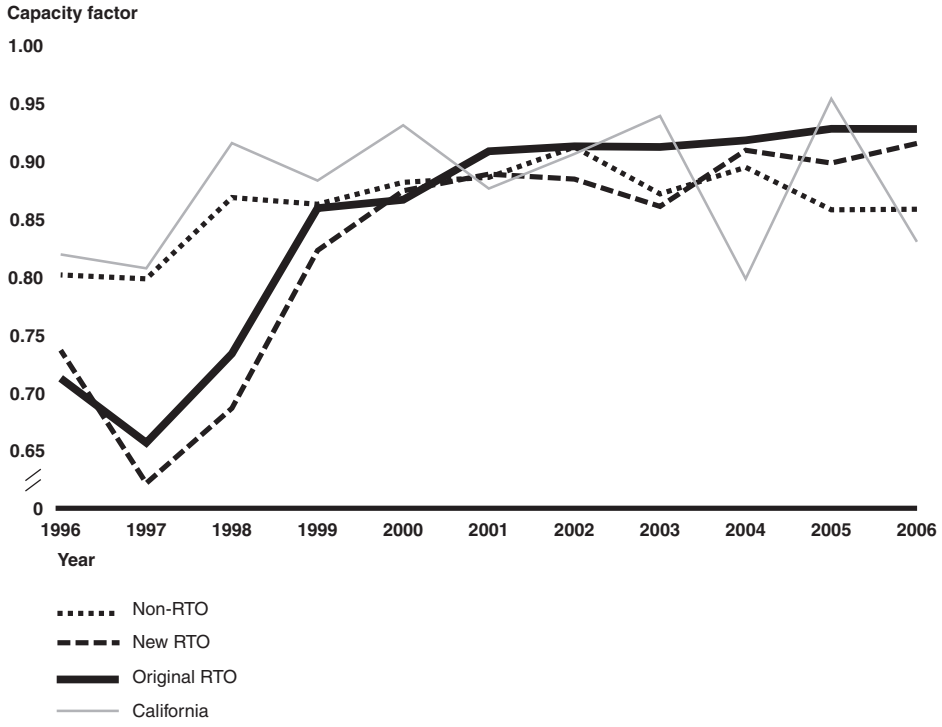
Proponents of RTOs acknowledge that consumer electricity prices have increased in RTO regions, but they believe that higher fuel prices, greater demand for electricity, increasing costs for infrastructure needed after years of underinvestment, the high costs of complying with environmental regulations, and regulatory decisions made by states about transmission and distribution rates are the principal reasons for rising electricity prices across the country and in RTO regions. They believe RTO markets have kept prices to consumers lower than they otherwise would have been. Critics of RTO markets disagree, observing that problems with RTO markets have exacerbated the effect of other factors, such as higher fuel prices, on electricity prices.

Experts and Industry Participants Disagree on RTOs' Influence on Generator Plant Efficiency

Experts and industry participants are also divided about the ways in which RTO markets may influence how efficiently existing plants are used. Some

believe prices established competitively in RTO markets have given generators an incentive to improve the maintenance and operation of their facilities and operate them a greater percentage of the time, thereby improving efficiency and lowering the overall cost of generating electricity. By operating plants more efficiently, generators can better compete against rival bidders, resulting in either greater profits for themselves, lower prices to consumers, or both. Some studies conclude that nuclear plants in RTO and restructured regions have increased their capacity factors—the electricity generated by a plant as a percentage of that plant's maximum capacity to generate electricity. As seen in figure 12, our analysis illustrates that nuclear plant capacity factors show more pronounced improvement in recent years in the original RTO states and new RTO states than in the non-RTO group. We did not attempt to account for other potential causes for this improvement, such as technological or institutional factors that may have improved efficiencies prior to the advent of restructuring and RTO markets or determine whether aggregate trends were the result of widespread efficiency improvements or a few improved generating units. While many agree that the results of capacity factor analysis would inform discussions of the benefits of RTO markets, they do not agree on how to isolate the influence of these markets and restructuring on capacity factors or determine whether improvements preceded restructuring changes or resulted from them.

Figure 12: Change in Nuclear Plant Capacity Factors, 1996-2006



Source: GAO analysis of Energy Information Administration data.

Note: Capacity factors represent the electricity generated by a plant as a percentage of that plant's maximum capacity to generate electricity.

Some experts and industry participants believe improved generator efficiency at existing plants benefits consumers because it reduces the need to construct new generating plants and allows less expensive generating options, such as previously constructed nuclear plants, to satisfy a greater portion of electricity demand. Others question the role of RTO markets and restructuring in improving nuclear plant generator efficiency and whether efficiencies have resulted in lower prices for consumers than would have otherwise occurred.

Experts and Industry Participants Disagree about RTO Influence on Infrastructure Investment

There is also disagreement about whether RTOs have led to other regional benefits, such as increased construction of transmission and generation infrastructure. For example, some industry participants and experts believe a practice a number of RTOs employ of pricing electricity

differently at various locations in a region to reflect the costs associated with transmission congestion provides valuable signals by indicating where additional generation or transmission is needed.[37] Some critics, however, charge that this method of pricing electricity has not produced the expected investment in transmission and generation in the locations where it is needed. Furthermore, they believe this practice, combined with what they characterize as limited competition in RTO markets, allows generators to keep their bids high and earn excess profits.

Studies of Restructuring and RTOs Draw Differing Conclusions

In order to weigh in on these issues, a number of academics and private consulting firms have conducted studies about the benefits of restructuring and RTOs and their effect on electricity prices, although their studies have drawn differing conclusions. Some of these studies seek to isolate the effect of restructuring and RTO membership from other factors, such as fuel prices, to determine whether restructuring and RTOs themselves have influenced prices and led to other benefits. We identify and describe in appendix VIII a selection of 13 studies that are representative of these varied conclusions. Several of the studies conclude that the formation of RTOs resulted in greater efficiencies in the electricity industry, significantly benefited local economies, and, in some cases, kept electricity prices lower than they otherwise would have been. Others conclude that RTO market design and operations have not kept prices to consumers lower, but rather have led to higher consumer prices and higher generator profits.

RTO-Developed Assessments of Performance Find Benefits

As a way of addressing concerns about whether they have provided benefits, some RTOs have quantified the benefits they believe they have provided to their regions. ISO New England, for example, developed measures related to wholesale electricity prices, power production costs, emissions, and other areas to quantify the value it has provided to New England. According to ISO New England, average wholesale electricity prices in its region, when adjusted for rising fuel costs, have declined from

[37]Transmission congestion refers to instances in which a transmission line has insufficient capacity to transfer the electricity needed to satisfy demand in a particular area. An area that does not have sufficient transmission capacity may have to rely on local power plants whose production costs may be higher than those for electricity supplies from other locations. Inability to import lower-cost supplies may cause electricity prices in the transmission-constrained area to be higher than would be the case without congestion.

$45.95 per MWh in 2000 to $42.64 per MWh in 2006. ISO New England reports that over this same period, non-fuel-adjusted prices rose from $45.95 per MWh to $62.74 per MWh. Midwest ISO also recently developed an initiative to quantify its performance. According to its analysis, Midwest ISO has improved electric service reliability and is more efficiently using generation resources, a fact that, along with other factors, has contributed to between $555 million and $850 million in annual net benefits. Midwest ISO is currently soliciting comments from stakeholders on its analysis. We did not analyze or validate either of these efforts.

FERC Believes RTOs Have Produced Benefits but Has Not Conducted a Study or Developed a Comprehensive Set of Publicly Available Measures for Tracking RTO Performance

FERC officials believe that RTOs have resulted in benefits to the economy, such as new efficiencies in operating the regional transmission grid; however, it has not conducted an empirical analysis or developed a comprehensive set of performance measures to analyze these benefits. FERC officials told us they consider RTO benefits when they review proposals to create RTOs and approve RTO decisions, such as new markets for electricity and other services. FERC also recently initiated a proceeding to consider specific reforms to RTO markets—for example, considering how to strengthen market monitoring and increase opportunities for long-term power contracts.[38] FERC believes RTOs have produced numerous benefits, including the following:

- improving the efficiency of the regional transmission grid, including resolving operating problems such as transmission congestion; providing more efficient transmission pricing policies; and minimizing market power;
- improving transmission reliability by facilitating more accurate calculations of regional transmission capacity;
- improving access to the grid by reducing opportunities for discriminatory transmission practices;
- improving competition in regional power markets by facilitating the entry of new independent generators;
- facilitating stakeholder consensus solutions to regional problems;
- enhancing transparency and oversight regarding how prices are determined and how access to the grid is granted; and
- providing a process of regional transmission planning, thus resulting in more efficient planning and use of resources across a region, as well as an opportunity for input by a broad range of stakeholders.

[38]FERC, Wholesale Competition in Regions with Organized Electric Markets, Docket RM07-19-000 and AD07-7-000, February 22, 2008.

However, FERC has not conducted an empirical analysis to measure whether RTOs have achieved these expected benefits or how RTOs or restructuring efforts more generally have affected consumer electricity prices, costs of production, or infrastructure investment. FERC believes data exist to support its conclusion that RTOs have provided benefits—for example, data illustrating changes in generating capacity in RTO regions and data about the number of transmission interruptions used by system operators to address congestion. However, FERC has not used these or other available data to analyze whether RTOs have produced benefits. Furthermore, FERC has not reexamined its prospective estimate of the benefits RTOs were expected to produce—estimated in 1999 at $2.4 billion annually in cost savings—to determine whether these expected benefits are actually being realized or how actual outcomes have differed from original estimates. Some of the projections used to develop this estimate were too conservative, indicating that the estimate is not as reliable as it could be.[39] Rather than incorporating a range of assumptions about future fuel prices to account for uncertainty, the model used one set of fuel price projections that turned out to be lower than what actually occurred. For example, the model's projections assumed the average price of natural gas delivered to electric generation plants in the United States would rise to $3.25 per million British thermal units (Btu) by 2005.[40] In fact, the actual price rose much faster, reaching $8.50 per million Btu in 2005. Similarly, the model assumed that U.S. electric generation capacity using natural gas and oil as fuel would increase from about 230,000 megawatts in 1997 to about 284,000 megawatts in 2005, but in fact, U.S. electric generation capacity rose to about 440,000 megawatts. FERC officials acknowledge that some of the study's assumptions were low but maintain that RTOs have provided benefits.

Although FERC collects a wide range of data from the RTOs, it has not developed a report or other assessment with comprehensive, standardized measures that Congress and the public could use to identify and track RTO performance. FERC has taken a step in this direction by developing a nonpublic document that provides some standardized measures of RTO market performance, and these measures are also addressed in public

[39]FERC's estimate was based on a model developed by ICF Inc.

[40]We adjusted FERC's estimate of natural gas prices and the actual prices to 2007 dollars to facilitate comparison.

reports issued by the RTOs.[41] However, FERC officials explained that these measures were not intended to be used to assess RTO benefits or evaluate the performance of individual RTOs. Moreover, they are not comprehensive, since they do not address the extent to which RTOs have achieved the full range of expected benefits—such as improved reliability, more efficient planning for generation and transmission investments, or prices for consumers that are as low as possible—and do not compare performance between RTO and non-RTO regions. FERC also includes some statistics about RTOs on its Web site and in its annual report on the electricity industry, but these data are of limited scope and do not contain measures of operational and market performance.[42] The RTOs themselves publish large volumes of data about market and operational performance in publicly available annual reports and other documents available on their Web sites; however, the large amount of information and, in some cases, its lack of standardization, make it difficult for the public or Congress to easily compare and interpret it. Moreover, FERC has not synthesized these data in a way that allows Congress and the public to draw conclusions about the benefits of RTOs and their effectiveness or discern whether RTOs and organized markets are in their best interest.

According to FERC officials, quantitative analyses of whether benefits were achieved and identification of performance measures are not a necessary part of its oversight of RTOs. Rather, FERC officials believe FERC's continual review of RTO performance—through its evaluation of RTO decisions, proceedings about RTO market reforms, and market monitoring—is sufficient to ensure RTOs continue to benefit consumers as expected. Furthermore, FERC officials cited methodological challenges to performing an empirical analysis of whether benefits were achieved and developing performance measures, which it believes would limit their value. FERC officials also explained that RTO participation is voluntary, and that participants are able to assess for themselves the benefits of RTO membership and join or depart based on their own determination.

Experts from the electricity industry and the academic community we spoke with acknowledged that empirical analysis and measures of RTO performance would be methodologically challenging to conduct. In

[41]These include, among other things, data on load, prices, outage rates, net revenue, imports and exports, and generation by fuel type.

[42]FERC annually produces the "State of the Markets Report," which contains broad information on the electricity and natural gas industries.

particular, these experts noted that there are difficulties in isolating the influence of RTOs on prices, efficiency, and investment from other factors, such as fuel prices. However, these experts observed that tracking performance measures across RTOs would encourage better performance and could identify potential areas for improvement. Some added that, in certain cases, the same measures could be developed for non-RTO regions to provide points of comparison. These experts suggested measuring and providing standardized information to the public on market competitiveness, transmission and generation investment, plant efficiency, reliability, and changes in prices in RTO regions, among other things. Some industry groups have also called for the development of common measures of RTO performance, such as measures to track the difference between generator costs and prices charged in RTO markets, changes in congestion costs over time, and RTO costs of acquiring capital for major investments. Another industry group commissioned an independent study to identify and begin tracking standardized measures of RTO performance.

GAO's Standards for Internal Control identify the value to organizations of comparing actual performance to planned or expected results. More specifically, past GAO work recognizes that federal agencies can use performance information to identify problems in existing programs, develop corrective actions, and identify more effective approaches to program implementation, among other things.[43] By developing standard performance measures that draw upon its own internal analysis or work being conducted by RTOs, industry experts, market monitors, and others, FERC could, over time, develop a more thorough empirical understanding of RTO performance and whether and to what extent RTOs have provided benefits to the industry and to consumers. This could help FERC in evaluating the success of the decision to encourage the creation of RTOs and understand whether RTOs have led to the benefits expected of them. Measures may also help FERC determine whether to encourage the creation of additional RTOs or identify areas where its RTO policy and RTOs themselves could be improved. Moreover, if available to Congress and the public, measures could allow FERC to weigh in on the disagreements among experts and industry participants about the benefits RTOs provide.

[43]GAO, *Managing for Results: Enhancing Agency Use of Performance Information for Management Decision Making*, GAO-05-927 (Washington D.C.: Sept. 9, 2005).

Conclusions

It has been over 10 years since major federal electricity restructuring was introduced and some of the first RTOs were developed to facilitate it, yet there is little agreement about whether restructuring and RTOs have been good for consumers, how they have affected electricity prices, and whether they have produced the benefits FERC envisioned. Compounding this, rising electricity prices and diverse regional interests complicate an unbiased discussion of the merits of RTOs and restructuring. Although there are challenges to answering questions about the benefits of RTOs, a more structured and formalized approach to RTO oversight would be beneficial.

FERC's initial approach to allow a diverse range of RTO types, governance structures, and rate recovery mechanisms provided a means for regions to quickly build upon existing institutions like power pools and past participant experience working together. However, much has changed since the first RTOs came into existence, and it has become clear that FERC's efforts to regulate RTOs as it does utilities may no longer be sufficient. Furthermore, the specific characteristics of RTOs devised by FERC and its expectation that these entities would lead to lighter regulation by FERC give RTOs a unique position in the electricity industry. Some RTO functions, such as operating the transmission grid, typically fell within the purview of utilities. Others, including market monitoring and balancing different stakeholder interests, were more traditionally performed by regulators. As a result of this unique set of responsibilities, RTOs face much public scrutiny—something RTOs have implicitly embraced in part through their varied stakeholder processes—and may require different oversight by FERC. Although stakeholders told us they value the stakeholder process at each of the RTOs, the concerns they raised about its resource intensiveness and the challenges involved in analyzing RTO decisions highlight the importance of FERC involvement and oversight. In this regard, without more regular, consistent review of RTO expenses and budgets, FERC may be missing an opportunity to better ensure the cost-effectiveness of RTOs and that their rates remain just and reasonable, even between rate proceedings. Furthermore, FERC's lack of regular review of RTO financial reports, filed annually in the Form No. 1, limits its ability to ensure RTO expenses are accurately and completely reported and reassure Congress, industry participants, stakeholders, and the public that the billions of dollars in expenses RTOs have incurred in recent years were reasonable and spent in accordance with budgets previously approved.

Finally, while FERC believes RTOs have produced numerous benefits, the fact that it has not developed a comprehensive set of publicly available

standardized measures to track RTO performance contributes to uncertainty about what those benefits have been and their magnitude. We acknowledge that FERC's review of RTO decisions that affect electricity prices and consideration of stakeholder comments and complaints sometimes results in new rules designed to improve the ability of RTOs to deliver benefits to their regions. However, in the absence of measures for evaluating the success of the decision to encourage the creation of RTOs, FERC may be missing opportunities to facilitate improvements in RTO operations and markets and is not as strongly positioned as it could be to evaluate the success of its decision to encourage the creation of RTOs and determine whether to encourage further RTO development.

Recommendations for Executive Action

To help ensure that FERC, industry participants, and the public have adequate information to inform their assessment of whether rates to recover RTO expenses are just and reasonable, we recommend the Chairman of FERC take the following two actions:

- develop a consistent approach for regularly reviewing expense information contained in RTO budgets and
- routinely review and assess the accuracy, completeness, and reasonableness of the financial information RTOs report to FERC in their Form No. 1 filings.

To provide a foundation for FERC to evaluate the effectiveness of its decision to encourage the creation of RTOs and help Congress, industry stakeholders, and the public understand RTO performance and net benefits, we recommend the Chairman of FERC take the following two actions:

- work with RTOs, stakeholders, and other experts to develop standardized measures that track the performance of RTO operations and markets and
- report the performance results to Congress and the public annually, while also providing interpretation of (1) what the measures and reported performance communicate about the benefits of RTOs and, where appropriate, (2) changes that need to be made to address any performance concerns.

Agency Comments and Our Evaluation

We provided FERC a draft of this report for review and comment. In a letter dated August 28, 2008, we received written comments from the Chairman of FERC. These comments are reprinted in appendix IX. We also

received technical comments, which we incorporated into the report as appropriate.

In his letter, the Chairman generally agreed with our report and its recommendations. We commend FERC for its interest in addressing the concerns we raised. The Chairman also provided comments in response to each of the recommendations and outlined plans to address them. Specifically:

- Regarding our first recommendation, that FERC develop a consistent approach for regularly reviewing expense information contained in RTO budgets, FERC agreed to increase its efforts to review RTO budgets and the reasonableness of RTO costs, and the Chairman has directed FERC staff to evaluate possible approaches for doing so.

- Regarding our second recommendation, that FERC perform additional review of the financial information in Form No. 1 filings, FERC indicated that, in addition to the one audit it has already begun, it plans to perform periodic audits of the financial information in Form No. 1 filings in the future.

- Regarding our third and fourth recommendations, that FERC work with RTOs, stakeholders, and other experts to develop standardized measures that track the performance of RTO operations and markets and report on those measures to Congress and the public, the Chairman noted that FERC is considering appropriate procedures for developing such measures and how best to report them. Regarding reporting, the Chairman observed that RTO "State of the Market" annual reports may be a vehicle for providing data and additional information to the public on RTO performance. While we agree that these annual reports of data on RTOs could be helpful for providing the public with additional performance information, we urge the Commission to consider what role it can play in helping Congress, industry stakeholders, and the public interpret and evaluate data and other information from RTOs in order to draw conclusions about RTO performance and value. It is clear that electricity markets and RTO operations are complex. FERC's expertise and independence make it well positioned to help Congress and others assess RTO performance and net benefits, and its oversight authority gives it the ability to use this information to encourage continued improvement. The Chairman also expressed uncertainty about whether annual evaluation of results and recommendations for change was feasible or cost-effective. We recognize that FERC must balance numerous responsibilities and that the extent of its evaluation of RTO performance may vary from year to year. However, we believe significant value could be realized from (1) providing

Congress and others with a consistent, annual source of data for tracking the performance of RTOs and (2) ongoing analysis of performance information and consideration of how it could aid FERC in carrying out its RTO responsibilities.

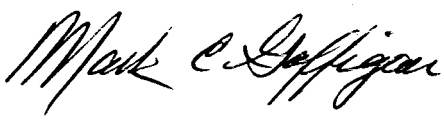
Finally, along with its general agreement with our recommendations, FERC provided two clarifying comments.

- The first clarifies FERC's role in approving RTO procedures for planning transmission infrastructure, and we incorporated this comment into our report.

- In the second, FERC commented on a statement in our draft report's conclusions that RTOs are in a position of greater public trust than utilities. FERC observes that all utilities have a position of public trust and that a number of utilities are responsible for administering transmission systems that are as large as or larger than those of some RTOs. We agree that all utilities carry out important activities in the public interest that necessitate vigilant regulatory oversight and acknowledge that a number of large utilities exist. However, we also recognize that FERC had a number of unique expectations for RTOs that it did not have for utilities, believing the creation of RTOs could lead to lighter regulation by FERC. For example, FERC expected RTOs to assist it in its oversight of the electricity industry through, among other things, their market monitoring activities and the stakeholder process in which market development and other issues are discussed and potentially resolved without resorting to FERC's complaint process. It is for these reasons that we believe FERC should take certain regulatory steps specific to RTOs like those we recommend in our report—for example, evaluating RTOs using performance measures—in order to improve RTOs and educate the public on their performance. However, in response to FERC's comments, we revised the report's conclusions to emphasize the unique role of RTOs and avoid relative comparisons of trust between RTOs and utilities.

As agreed with your offices, unless you publicly announce the contents of this report earlier, we plan no further distribution until 30 days from the report date. At that time, we will send copies of this report to interested congressional committees; the Chairman of FERC; and other interested parties. 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 offices have any questions about this report, please contact me at (202) 512-3841 or gaffiganm@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made major contributions to this report are listed in appendix X.



Mark Gaffigan
Director, Natural Resources and
Environment

Appendix I: Objectives, Scope, and Methodology

At the request of the Chairman and Ranking Member of the Senate Committee on Homeland Security and Governmental Affairs, we reviewed (1) Regional Transmission Organizations' (RTO) key expenses and investments in property, plant, and equipment; (2) how RTOs and the Federal Energy Regulatory Commission (FERC) review RTO expenses and decisions that may affect electricity prices; and (3) the extent to which there is consensus about what benefits RTOs have provided. Our review focused on the six RTOs in FERC's jurisdiction—California Independent System Operator (ISO), ISO New England, Midwest ISO, New York ISO, PJM Interconnection (PJM), and Southwest Power Pool.

To determine the total expenses incurred by RTOs from 2002 to 2006, the most recent data available when we began our review, and their key investments in property, plant, and equipment, we reviewed independent public auditor reports over this period, as well as full-time-equivalent personnel and transmission volume as reported to us by the RTOs. We summarized RTO expense, personnel, and transmission volume and property, plant, and equipment balances by RTO, and calculated average salary and related benefits per full-time equivalent and total expenses per megawatt hour (MWh) from 2002 through 2006 for each RTO. Our analysis reflects total annual expenses as reported in the RTOs' annual audited financial statements. We did not retroactively apply financial statement reclassifications to data from prior years. In addition, RTOs utilized differing billing methodologies, and consequently, the rates they charged to market participants may be different from the total expenses per MWh calculated in our analysis.

To illustrate the total amount of investments in property, plant, and equipment as of December 31, 2006, we used total property, plant, and equipment in our analysis without reducing those amounts by accumulated depreciation. We also reviewed 2006 RTO FERC Form No. 1 filings, the most current available at the time of our audit, to determine the amount of RTO expenses attributable to transmission expenses and regional market expenses, as well as administrative and general expenses. Independent public auditor reports did not aggregate expenses by these categories. We adjusted all expense amounts for inflation utilizing 2007 as the base year.

To determine how FERC and RTOs review RTO expenses and decisions and discuss other aspects of RTO costs and benefits, we collected general information, interviewed representatives from the six RTOs, and spoke to the ISO/RTO Council about how FERC and the RTOs review proposed budget expenses and consider how RTO decisions affect electricity prices.

For two RTOs—ISO New England and Midwest ISO—we collected more in-depth information and interviewed stakeholders from each of the major stakeholder sectors. We selected these two RTOs because they are multistate and perform a breadth of functions and services, but also reflect geographical and historical differences. For example, ISO New England evolved from a power pool; Midwest ISO did not. We interviewed state agency officials from these RTO areas, including state regulatory agencies (such as the Connecticut Department of Public Utility Control, Illinois Commerce Commission, Indiana Utility Regulatory Commission, Maine Public Utilities Commission, and Massachusetts Department of Public Utilities), state consumer agencies (such as the Connecticut Office of Consumer Counsel and Maine Office of the Public Advocate), and state regulatory associations (such as the Organization of MISO States, National Association of Regulatory Utility Commissioners, and the New England Conference of Public Utility Commissioners). We also interviewed representatives from each of these RTOs' stakeholder groups to understand how FERC and RTOs review RTO decisions and expenses. We interviewed officials from the North American Electric Reliability Corporation to understand their interaction with RTOs. We spoke with officials from FERC's Office of Enforcement and Office of Energy Market Regulation and reviewed related documentation that outlined FERC's steps to review RTO expenses for reasonableness and accuracy. We reviewed selected FERC rate proceedings to better understand the type of information provided to FERC about proposed RTO expenses and the analysis it performs. We also considered FERC's process for reviewing actual expenses as reported in FERC Form No. 1 filings and reviewed FERC audits of RTOs conducted in 2004 which focused primarily on governance. While we generally reviewed FERC's oversight of RTOs, we did not perform an in-depth analysis of FERC's review of specific RTO decisions.

Finally, to address the extent to which there is consensus about what benefits RTOs have provided, we interviewed FERC officials and reviewed related documentation, including FERC's 1999 prospective assessment of RTO expected benefits. We interviewed several experts in the field of electricity restructuring to discuss their opinions on the benefits and costs of RTOs and their assessment of the adequacy of FERC's analysis of RTOs to date. These included experts from the Analysis Group, Cornell University, Northeastern University, Penn State University, the University of California Berkeley, and Vermont Law School. We chose experts affiliated with academic institutions and research firms with extensive knowledge of electricity restructuring and RTOs. We selected experts with a balanced range of views about the economic benefits of RTOs. We also

interviewed a number of industry participants, including representatives from electricity industry associations and consumer organizations, such as the American Public Power Association, Compete Coalition, Consumer Federation of America, Electric Power Supply Association, Edison Electric Institute, Electricity Consumers Resource Council, Industrial Energy Consumers of America, National Rural Electric Cooperative Association, and Public Citizen to more fully understand where there was agreement and disagreement about the costs and benefits of RTOs. We reviewed reports and analyses from these and other industry participants that discussed the costs and benefits of RTOs.

We also reviewed expert studies on the economic effects of restructuring and competition in the electricity industry and electricity consumers. In deciding which studies to include in our summary table, we selected some studies that were sponsored by both advocates and critics of the existing RTOs, as well as studies that are more academic in nature. Some of these studies specifically addressed the impact of RTOs on electricity costs and prices, while others addressed the impacts of restructuring and competition more generally, without specifically isolating the impact of RTOs. We conducted basic analyses of data on electricity prices, intensity of the use of generation resources (capacity factors), and type of generation resources (by fuel use). For the analysis of prices and capacity factors, we divided states into four categories: (1) original RTO states—states joining an RTO in 1999 or earlier and historically in a power pool, (2) new RTO states—states joining an RTO region after 1999, (3) non-RTO states—states outside RTO regions, and (4) California. The original RTO states category included Connecticut, Delaware, Massachusetts, Maryland, Maine, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, and the District of Columbia. The new RTO states category included Iowa, Illinois, Indiana, Kansas, Michigan, Minnesota, Missouri, North Dakota, Ohio, Oklahoma, Virginia, Wisconsin and West Virginia. The non-RTO states category included Alaska, Alabama, Arkansas, Arizona, Colorado, Florida, Georgia, Hawaii, Idaho, Kentucky, Louisiana, Mississippi, Montana, North Carolina, Nebraska, New Mexico, Nevada, Oregon, South Carolina, South Dakota, Tennessee, Utah, Washington and Wyoming. We placed California in a separate category because its electricity industry went through a turbulent restructuring process during part of the time period that we analyzed. We did not include Texas in our analysis, because most of the state constitutes a separate grid from the two other main grids in the United States and is largely unregulated by FERC. For the other three groupings, states that were partially in an RTO region were considered part of the region if electricity for most major cities was provided by a utility that participated

in an RTO. Our analysis was based on electricity data obtained from the Energy Information Administration. For the price analysis, we used electric power retail sales and electric revenues data. We developed average price estimates by aggregating state-level data, dividing revenues by sales, and adjusting for inflation using the gross domestic product price index. We focus on the prices in the industrial sector because the retail portion of its electricity prices is typically smaller than the retail portion of residential and commercial electric prices. RTOs operate wholesale markets and do not determine the retail portion of electric prices. We also conducted a specific analysis of relative industrial electricity prices. A description of that analysis and our methodology is presented in Appendix VII. For the analysis of the intensity of the use of generation resources, we calculated capacity factors from Energy Information Administration state-level data on electric power generation capacity and actual generation. We also interviewed representatives from the Energy Information Administration to understand the type of data that agency collects related to estimating the benefits and costs RTOs.

We conducted this performance audit from October 2007 to September 2008 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. We provided a draft of this report to FERC for its review. FERC's comments are reprinted in Appendix IX.

Appendix II: RTO Characteristics and Functions Required by FERC Order 2000

RTO characteristics	Description
Independence	RTOs must be independent of control by any market participant and have the authority to propose rates, terms, and conditions of transmission services provided over the facilities they operate. An RTO's employees must not have financial interest in any market participant.
Scope and regional configuration	RTOs must serve an appropriate region of sufficient scope to maintain reliability, support efficient and nondiscriminatory power markets, and carry out their other functions.
Operational authority	RTOs must have operational authority for all transmission facilities under their control.
Short-term reliability	RTOs must have exclusive authority for maintaining the short-term reliability of the grid they operate.
RTO functions	**Description**
Tariff administration and design	RTOs must administer their own transmission tariff—an agreement that outlines the terms and conditions of transmission service—and employ a transmission pricing system that promotes efficient use and expansion of transmission and generation facilities.
Congestion management	RTOs must ensure the development and operation of market mechanisms to manage transmission congestion. These mechanisms should accommodate broad participation by all market participants and provide transmission customers with efficient price signals.
Parallel path flow	RTOs must develop and implement procedures to address engineering and reliability problems caused by parallel path flows—a term that refers to electricity flowing over all possible transmission lines regardless of who owns the lines and what transmission contracts were agreed to. According to FERC, prior to RTOs many transmission owners found their grids overloaded by the actions of others because of this engineering reality. Since they were unable to determine the responsible party, these owners had to curtail their own use of their grid.
Ancillary services	RTOs must serve as the provider of last resort for ancillary services—services to maintain the reliable operation of the transmission system—and have the authority to decide the minimum required amounts of each ancillary service. RTOs must also ensure that transmission customers have access to a real-time balancing market.
OASIS and capacity	RTOs must be the single administrator for the Open Access Same Time Information System (OASIS) site—an Internet-based electronic communication and reservation system through which transmission providers provide information about the availability and price of transmission and ancillary services and customers procure those services. Furthermore, RTOs must independently calculate total and available transmission capacity—measures of the amount of electric power that the transmission system is capable of transferring from one point in the grid to another.
Market monitoring	RTOs must provide for objective monitoring of markets administered to identify market design flaws, market power abuses, and opportunities for efficiency improvements.
Planning and expansion	RTOs must be responsible for planning and directing necessary transmission expansions, additions, and upgrades that will enable it to provide efficient, reliable, and nondiscriminatory service. In doing so, they must coordinate such efforts with appropriate state authorities and must encourage market-driven operating and investment actions for preventing and relieving congestion.
Interregional coordination	RTOs must ensure the integration of reliability practices across regions.

Source: FERC Order 2000 and GAO analysis.

Appendix III: RTO Inflation-Adjusted Expenses and Full-time Equivalents from 2002 to 2006, by RTO

(Dollars in thousands)

California ISO	**2002**	**2003**	**2004**	**2005**	**2006**	**Total**
Expenses						
Salaries and related benefits	$76,427	$80,949	$84,451	$81,600	$75,393	$398,820
Interest expense (income)	13,716	5,542	5,133	211	223	24,825
Consulting, professional, and other outside services	20,286	21,954	22,427	22,163	17,425	104,255
Facility/maintenance	67,234	67,365	41,373	40,311	33,178	249,461
Other	11,020	27,748	9,709	8,864	9,227	66,568
Depreciation and amortization	52,471	26,178	17,198	19,026	17,123	131,996
Regulatory dues/assessments	0	0	0	0	0	0
Total expenses	**$241,154**	**$229,737**	**$180,291**	**$172,174**	**$152,569**	**$975,925**
Full-time equivalents (FTE)	572	591	576	484	506	
Salaries and related benefits per FTE	$134	$137	$147	$169	$149	
ISO New England						
Expenses						
Salaries and related benefits	$39,345	$46,581	$50,632	$53,956	$55,499	$246,013
Interest expense (income)	911	3,448	2,800	2,603	3,110	12,872
Consulting, professional, and other outside services	13,570	13,992	18,349	18,428	15,051	79,390
Facility/maintenance	9,918	9,771	8,505	7,116	7,334	42,644
Other	5,515	6,078	8,945	8,447	10,893	39,877
Regulatory dues/assessments	0	0	0	0	1,465	1,465
Depreciation and amortization	4,104	35,886	38,515	41,219	24,653	144,377
Total expenses	**$73,362**	**$115,757**	**$127,745**	**$131,768**	**$118,005**	**$566,638**
FTEs	345	373	401	413	401	
Salaries and related benefits per FTE	$114	$125	$126	$131	$138	
Midwest ISO						
Expenses						
Salaries and related benefits	$29,160	$39,899	$58,497	$75,344	$80,727	$283,628
Interest expense (income)	10,690	12,646	17,710	19,435	14,149	74,629
Consulting, professional, and other outside services	10,234	26,374	50,237	53,298	29,698	169,841
Facility/maintenance	9,635	16,601	23,156	27,761	31,612	108,764
Other	18,573	-44,851	-30,112	424	4,411	-51,556
Regulatory dues/assessments	0	20,343	21,646	34,769	32,748	109,506
Depreciation and amortization	16,536	22,477	26,474	72,011	81,731	219,229
Total expenses	**$94,828**	**$93,489**	**$167,607**	**$283,041**	**$275,075**	**$914,040**
FTEs	265	373	517	590	643	
Salaries and related benefits per FTE	$110	$107	$113	$128	$126	

New York ISO	2002	2003	2004	2005	2006	Total
Expenses						
Salaries and related benefits	$33,158	$36,824	$41,258	$48,391	$48,351	$207,982
Interest expense (income)	2,559	1,489	2,652	3,337	3,863	13,901
Consulting, professional, and other outside services	23,621	28,086	29,519	27,882	25,563	134,671
Facility/maintenance	16,931	15,451	22,092	23,424	25,713	103,611
Other	19,505	20,371	19,789	5,761	5,708	71,135
Regulatory dues/assessments	8,740	10,526	7,455	11,209	9,733	47,663
Depreciation and amortization	9,671	19,761	26,651	37,974	32,892	126,949
Total expenses	**$114,185**	**$132,508**	**$149,416**	**$157,979**	**$151,824**	**$705,912**
FTEs	316	345	393	383	391	
Salaries and related benefits per FTE	$105	$107	$105	$126	$124	
PJM						
Expenses						
Salaries and related benefits	$54,412	$62,037	$65,913	$78,024	$80,971	$341,358
Interest expense (income)	12,046	10,092	7,777	9,802	18,502	58,218
Consulting, professional, and other outside services	28,045	25,962	32,709	41,147	38,914	166,778
Facility/maintenance	20,742	23,208	22,830	20,413	16,223	103,415
Other	154,422	103,037	23,775	37,243	45,951	364,428
Regulatory dues/assessments	11,256	12,409	25,713	29,689	33,358	112,425
Depreciation and amortization	30,735	54,512	56,553	67,902	47,648	257,351
Total expenses	**$311,657**	**$291,257**	**$235,271**	**$284,220**	**$281,568**	**$1,403,973**
FTEs	484	531	562	578	551	
Salaries and related benefits per FTE	$112	$117	$117	$135	$147	
Southwest Power Pool						
Expenses						
Salaries and related benefits	$12,616	$13,503	$15,852	$19,638	$26,233	$87,842
Interest expense (income)	2,414	2,138	1,003	454	-571	5,438
Consulting, professional, and other outside services	11,764	5,215	8,181	10,750	14,100	50,012
Facility/maintenance	3,323	3,687	4,215	4,802	7,221	23,247
Other	1,877	1,435	3,488	4,131	4,609	15,540
Regulatory dues/assessments	930	701	757	8,712	10,661	21,760
Depreciation and amortization	5,028	4,956	5,839	3,041	3,825	22,689
Total expenses	**$37,953**	**$31,635**	**$39,335**	**$51,528**	**$66,078**	**$226,529**
FTEs	110	116	131	169	245	
Salaries and related benefits per FTE	$115	$116	$121	$116	$107	

Total salaries and related benefits for RTOs	**$245,119**	**$279,794**	**$316,603**	**$356,953**	**$367,175**	**$1,565,644**
Total FTEs	**2,092**	**2,329**	**2,580**	**2,617**	**2,737**	
Total salaries and related benefits per FTE	**$117**	**$120**	**$123**	**$136**	**$134**	

Source: GAO analysis of independent auditors' reports. FTE information provided by RTOs.

Note: Dollar amounts are inflation-adjusted and presented in 2007 dollars. Additionally, the sum of component data in this appendix may not equal the totals due to rounding. In 2004, PJM changed its method of classifying revenues and expenses related to study and interconnection fees for financial reporting purposes. The expenses we calculated for PJM for 2002 and 2003 are significantly higher than the amounts it billed market participants, because we did not retroactively apply financial statement reclassifications to data from prior years.

Appendix IV: Megawatt hour Load Served by RTO from 2002 through 2006

California ISO	2002	2003	2004	2005	2006	Total
Load served in megawatt hours (MWh)	220,888,474	220,572,396	229,981,261	234,978,833	240,171,616	1,146,592,580
Total expenses (Dollars in thousands)	$241,154	$229,737	$180,291	$172,174	$152,569	$975,925
Total expenses per MWh (Dollars)	**$1.09**	**$1.04**	**$0.78**	**$0.73**	**$0.64**	**$0.85**
ISO New England						
Load served (MWh)	128,029,400	130,777,700	132,520,500	136,355,200	132,091,800	659,774,600
Total expenses (Dollars in thousands)	$73,362	$115,757	$127,745	$131,768	$118,005	$566,638
Total expenses per MWh (Dollars)	**$0.57**	**$0.89**	**$0.96**	**$0.97**	**$0.89**	**$0.86**
Midwest ISO						
Load served (MWh)	365,911,866	460,340,014	628,868,057	691,478,733	668,033,817	2,814,632,487
Total expenses (Dollars in thousands)	$94,828	$93,489	$167,607	$283,041	$275,075	$914,040
Total expenses per MWh (Dollars)	**$0.26**	**$0.20**	**$0.27**	**$0.41**	**$0.41**	**$0.32**
New York ISO						
Load served (MWh)	160,500,000	159,800,000	163,700,000	173,800,000	170,300,000	828,100,000
Total expenses (Dollars in thousands)	$114,185	$132,508	$149,416	$157,979	$151,824	$705,912
Total expenses per MWh (Dollars)	**$0.71**	**$0.83**	**$0.91**	**$0.91**	**$0.89**	**$0.85**
PJM						
Load served (MWh)	329,462,687	343,709,652	472,688,685	727,989,643	729,139,288	2,602,989,955
Total expenses (Dollars in thousands)	$311,657	$291,257	$235,271	$284,220	$281,568	$1,403,973
Total expenses per MWh (Dollars)	**$0.95**	**$0.85**	**$0.50**	**$0.39**	**$0.39**	**$0.54**
Southwest Power Pool						
Load served (MWh)	80,520,302	86,135,886	92,601,921	125,478,287	179,096,451	563,832,847
Total expenses (Dollars in thousands)	$37,953	$31,635	$39,335	$51,528	$66,078	$226,529
Total expenses per MWh (Dollars)	**$0.47**	**$0.37**	**$0.42**	**$0.41**	**$0.37**	**$0.40**
All RTOs						
Load served (MWh)	1,285,312,729	1,401,335,648	1,720,360,424	2,090,080,696	2,118,832,972	8,615,922,469
Total expenses (Dollars in thousands)	$873,140	$894,382	$899,664	$1,080,711	$1,045,120	$4,793,017
Total expenses per MWh (Dollars)	**$0.68**	**$0.64**	**$0.52**	**$0.52**	**$0.49**	**$0.56**

Source: GAO analysis of data supplied by RTOs.

Note: Dollar amounts are inflation-adjusted and presented in 2007 dollars. Additionally, the sum of component data in this appendix may not equal the totals due to rounding. In 2004, PJM changed its method of classifying revenues and expenses related to study and interconnection fees for financial reporting purposes. The expenses per MWh we calculated for PJM for 2002 and 2003 are significantly higher than the amounts it billed its members because we did not retroactively apply financial statement reclassifications to data from prior years. Had 2002 and 2003 expenses been reported as they were from 2004 to 2006, PJM's inflation-adjusted expenses per MWh would have been $0.52/MWh (instead of $0.95/MWh) in 2002 and $0.59/MWh (instead of $0.85/MWh) in 2003. In addition, RTOs utilize differing billing methodologies. As a result, the rates it charges market participants may be different from the total expenses per MWh calculated in our analysis.

Appendix V: Inflation-Adjusted RTO 2006 Expenses Reported on FERC Form No. 1

(Dollars in thousands)		
California ISO		
Expenses		
Administrative and general expenses	$73,220	48%
Other expenses	28,005	18%
Transmission expenses	33,678	22%
Regional market expenses	17,667	12%
Total	**$152,570**	**100%**
ISO New England		
Expenses		
Administrative and general expenses	$46,682	40%
Other expenses	34,927	30%
Transmission expenses	19,845	17%
Regional market expenses	16,550	14%
Total	**$118,005**	**100%**
Midwest ISO		
Expenses		
Administrative and general expenses	$68,891	25%
Other expenses	97,626	35%
Transmission expenses	53,877	20%
Regional market expenses	54,681	20%
Total	**$275,076**	**100%**
New York ISO		
Expenses		
Administrative and general expenses	$61,145	42%
Other expenses	47,114	32%
Transmission expenses	17,891	12%
Regional market expenses	20,610	14%
Total	**$146,760**	**100%**
PJM		
Expenses		
Administrative and general expenses	$108,979	39%
Other expenses	104,916	37%
Transmission expenses	45,609	16%
Regional market expenses	22,037	8%
Total	**$281,541**	**100%**

Southwest Power Pool		
Expenses		
Administrative and general expenses	$46,234	76%
Other expenses	6,428	11%
Transmission expenses	3,769	6%
Regional market expenses	4,587	8%
Total	**$61,018**	**100%**
Total 2006 expenses reported to FERC		
Expenses		
Administrative and general expenses	$405,152	39%
Other expenses	319,017	31%
Transmission expenses	174,669	17%
Regional market expenses	136,132	13%
Total	**$1,034,970**	**100%**

Source: GAO analysis of FERC Form No. 1 filings.

Note: Dollar amounts are inflation-adjusted and presented in 2007 dollars. Additionally, percentages in this appendix may not add to 100 due to rounding, and the sum of component data may not equal the totals due to rounding. New York ISO, Southwest Power Pool, and PJM expenses reported on FERC Form No. 1 filings do not agree with the expenses noted on the independent auditors' reports due primarily to differences in how certain interest, lease, planning, and other revenues were netted against related expense accounts in the FERC Form No. 1 filings.

Appendix VI: Investment in Property, Plant, and Equipment for RTOs as of December 31, 2006

(Dollars in thousands)

California ISO		
Property and equipment at cost		
Software and equipment	$234,735	59%
Construction, work, and projects in process	131,400	33%
Buildings and leasehold improvements	13,763	3%
Land	9,630	2%
Furniture and fixtures	9,685	2%
Property and equipment, gross	**$399,213**	**100%**
ISO New England		
Property and equipment at cost		
Software and equipment	$174,295	75%
Construction, work, and projects in process	24,118	10%
Buildings and leasehold improvements	33,078	14%
Land	0	0
Furniture and fixtures	2,055	1%
Property and equipment, gross	**$233,546**	**100%**
Midwest ISO		
Property and equipment at cost		
Software and equipment	$325,846	89%
Construction, work, and projects in process	0	0
Buildings and leasehold improvements	33,857	9%
Land	2,216	1%
Furniture and fixtures	3,330	1%
Property and equipment, gross	**$365,248**	**100%**
New York ISO		
Property and equipment at cost		
Software and equipment	$154,053	79%
Construction, work, and projects in process	12,112	6%
Buildings and leasehold improvements	24,054	12%
Land	2,098	1%
Furniture and fixtures	2,998	2%
Property and equipment, gross	**$195,314**	**100%**

PJM		
Property and equipment at cost		
Software and equipment	$285,328	88%
Construction, work, and projects in process	18,705	6%
Buildings and leasehold improvements	17,454	5%
Land	982	0
Furniture and fixtures	788	0
Property and equipment, gross	**$323,256**	**100%**
Southwest Power Pool		
Property and equipment at cost		
Software and equipment	$59,654	85%
Construction, work, and projects in process	6,303	9%
Buildings and leasehold improvements	513	1%
Land	337	0
Furniture and fixtures	3,246	5%
Property and equipment, gross	**$70,054**	**100%**
Total 2006 property, plant, and equipment for RTOs		
Property and equipment at cost		
Software and equipment	$1,233,910	78%
Construction, work, and projects in process	192,638	12%
Buildings and leasehold improvements	122,718	8%
Land	15,262	1%
Furniture and fixtures	22,102	1%
Property and equipment, gross	**$1,586,631**	**100%**

Source: GAO analysis of independent auditors' reports.

Note: Dollar amounts are inflation-adjusted and presented in 2007 dollars. Additionally, percentages in this appendix may not add to 100 due to rounding, and the sum of component data may not equal the totals due to rounding.

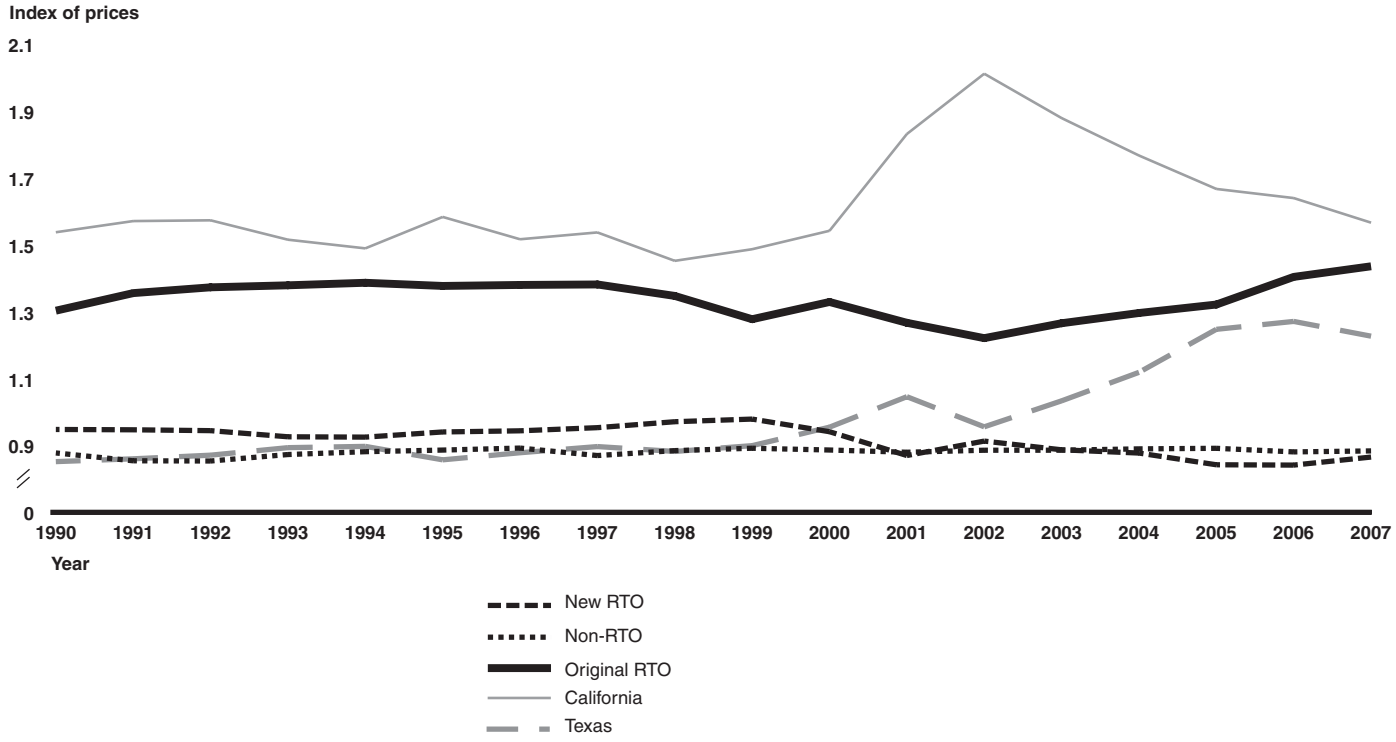
Appendix VII: Indexed Electricity Prices, 1990-2007

As part of our effort to examine trends in state-level prices for industrial customers, we created indexes of prices at the state level.[1] The indexes reflect the average of electricity prices paid by industrial customers, divided by the comparable national average price. As such, a state with an index greater than 1.0 would indicate that the state price was greater than the national average and vice versa. Such an approach focuses attention on how prices compare to the national average and how the different states' standing relative to the national average changes over time. This approach also avoids the necessity of deciding which deflator is most appropriate for adjusting nominal electricity prices for inflation.

To examine the trends in these indexes for the different regions of the country according to their RTO affiliations, we created weighted average indexes consistent with our RTO classifications described in appendix I. We chose to include Texas in this analysis for purposes of comparison. We obtained a weighted average by multiplying each state's index for a given year by the share of its retail sales of electricity to industrial customers relative to its group's total, and then summing up the resulting multiples for all the states in a given group. The results of this effort are reasonably consistent with the results of the basic price analysis reflected in figure 10 of the report. This analysis provides additional insights into price trends over the period of analysis. For example, it shows that from about 1997 through 2002, the original and new RTO states witnessed relative price decreases compared to the non-RTO group. Further, it appears that from 2002 through the most recent data in 2007, the original RTO states also witnessed relative price increases that effectively erased the decline in prices from 1997 through 2002. In this analysis, these prices (original RTO states) in 2007 are higher, in a relative sense, than they were prior to restructuring in 1997. Industrial prices in Texas, generally not overseen by FERC, have witnessed notable relative price increases since the introduction of restructuring. It is important to note that this analysis provides a look at price trends and does not provide any indication of RTOs causing these trends or even influencing them. Notably, both the original RTO states and Texas are highly reliant on natural gas, the prices of which have increased dramatically in recent years.

[1]Data collected by the Energy Information Administration reflect average revenue per kilowatt-hour of electricity sold to customers and represent a proxy for prices.

Figure 13: Comparison of Relative Electricity Prices for Industrial Customers, 1990-2007



Source: GAO analysis of Energy Information Administration data.

Appendix VIII: Summary of Expert Studies Analyzing the Benefits of Restructuring and Regional Transmission Organizations

Study and date	Author and affiliation	Assessment of net benefits	Primary measure of net benefits/major data elements	Study conclusion and GAO comment
A Cost-Benefit Assessment of Wholesale Electricity Restructuring and Competition in New England (2006)	M. Barmack, E. Kahn, and S. Tierney, Analysis Group	Restructuring and competition in New England resulted in relatively small savings in the capital and operating costs of wholesale electricity. No specific analysis of the impact of wholesale cost savings on consumer prices.	Capital and operating costs of electricity generation	Sponsored by an electricity-generating company. Estimated that restructuring and competition resulted in an expected 2 percent savings in wholesale electricity costs for New England from 2002 to 2018. Net benefits estimate based on comparing model simulations of capital and operating costs of the restructured electric industry in New England with simulations of investments and operating costs in a "counterfactual" case with more traditional regulation and without industry restructuring. Attributed very significant benefits to greater nuclear plant efficiency from restructuring and competition.
Electricity Prices and Costs under Regulation and Restructuring (2008)	S. Blumsack, L. Lave, and J. Apt, Carnegie Mellon Electricity Industry Center	Restructuring has been beneficial to companies that restructured, but the evidence regarding the impact of RTOs on consumers is far less clear.	A measure of the gap between prices and firm-level costs of generating electricity	Constructed an economic and statistical model to study the impact of various elements of retail and wholesale restructuring on the price-cost markup of electricity-generating companies. Asserted that restructuring was beneficial to companies that restructured, based on the conclusion that 2 to 3 cents per kilowatt-hour of the difference between prices and costs was explained by restructuring rather than increases in fuel prices.[a] Concluded that of the various restructuring elements, RTO membership had little overall impact on the price-cost markup.[b]

Study and date	Author and affiliation	Assessment of net benefits	Primary measure of net benefits/major data elements	Study conclusion and GAO comment
Measuring and Explaining Electricity Price Changes in Restructured States (2006)	M. Fagan, Mossavar-Rahmani Center for Business and Government, Harvard University	The study finds no evidence that RTO formation or industry restructuring explains price differences among regions of the country.	Industrial electricity prices	Compared actual average retail industrial electricity prices with model-predicted prices in states classified as restructured and nonrestructured in 2001-2003. Concluded that prices were lower than predicted in two-thirds of restructured states and in about one-quarter of nonrestructured states. Concluded also that regulatory reform at neither the retail nor wholesale levels (RTO participation) was a significant driver of the difference in price trends.
Putting Competitive Power Markets to the Test (2005)	Global Energy Decisions	Consumers in the Eastern Interconnect region (entire United States except 11 Western states and Texas) benefited from large savings in the cost of utility wholesale purchases of electric power.	Operating costs of producing electric power	Commissioned by private energy companies. Concluded that wholesale competition in the electricity industry in the Eastern Interconnect region resulted in large net economic benefits and that RTOs contributed significantly to the realization of these benefits. Used a computer model to simulate wholesale electricity production costs for 1999-2003 under two scenarios: simulating (1) actual restructuring events over 1999-2003 and (2) the absence of procompetitive FERC reform over the same period. Concluded that procompetitive reforms resulted in about $15 billion net savings. Savings largely driven by dramatically improved efficiencies of power plants. Also specifically estimated large net economic benefits from expansion of the PJM Interconnect in 2004, supporting the conclusion that RTO formation and operations played an important role in realizing the benefits of competition.

Study and date	Author and affiliation	Assessment of net benefits	Primary measure of net benefits/major data elements	Study conclusion and GAO comment
Analysis of the Impact of Coordinated Electricity Markets on Consumer Electricity Charges (2007)	S. Harvey, B. McConihe, and S. Pope, LECG	Average retail prices are slightly lower per megawatt hour for PJM and New York ISO residential consumers than if coordinated markets had not been implemented.	Average residential prices for selected states that are members of RTOs and states that are not members of RTOs in 1990-2004	Commissioned by PJM. Used several statistical economic models to isolate the impact of electricity restructuring from several other variables that affect electricity prices. All model specifications indicated somewhat lower prices associated with restructuring. Concluded that while current RTO markets are imperfect, they have provided material benefits to consumers.
LMP Electricity Markets: Market Operations, Market Power, and Value for Consumers (2006)	E. Hausman and others, Synapse Energy Economics	LMP markets in RTOs have not delivered benefits to consumers in ISO New England and PJM; resource owners have reaped windfall profits.	Wholesale electricity prices; bidding behavior data, measures of investment in generation capacity, market concentration, price-cost markup, demand response, congestion costs	Commissioned by the American Public Power Association. Concluded that location-based pricing of RTO markets like PJM and ISO New England represented the best approach available for operating large, interconnected power pools efficiently and reliably. Also concluded that the benefits of this form of pricing have been limited because markets are based on bids rather than costs and lack perfect competition. Further, this pricing mechanism in the PJM and ISO New England markets resulted in windfall profits for resource owners without benefits to consumers. Found no evidence of this form of pricing improving the pattern of investments in the industry.

Study and date	Author and affiliation	Assessment of net benefits	Primary measure of net benefits/major data elements	Study conclusion and GAO comment
ISO New England: Delivering Value to the Region (2007)	ISO New England	Large savings in wholesale electricity costs in New England and in ratepayers' bills, and other benefits including service reliability, lower emissions, and greater demand response.	Electric system costs, cost of electric power generation capacity, new investment in generation and transmission, demand response participation, others	Summarized unpublished ISO New England analyses that estimated RTO benefits in different aspects of electricity service in New England. Estimated average annual wholesale market savings of about $850 million from 2000 to 2006, equivalent to an approximate net monthly savings of $4 for the average New England ratepayer. Quantified other RTO benefits, such as lower emissions of certain pollutants. Concluded that ISO New England had a significant role in enhancing the reliability and efficiency of the region's electricity industry and can help achieve the region's environmental goals by enabling the interconnection of low-carbon-emitting resources, benefit the region's electricity consumers, improve planning, and more.
Markets for Power in the United States: An Interim Assessment (2006)	P. Joskow, MIT	Lower prices for residential and industrial consumers.	Average industrial and residential prices	Constructed an economic and statistical model to study the effects of retail and wholesale competition on electricity prices for residential and industrial consumers, using the share of electricity generated by unregulated generators in a state as a proxy measure for the effect of wholesale restructuring.[c] Concluded that greater activity in a state's wholesale electricity market is associated with lower prices for residential and industrial consumers, supporting the study's view that RTOs improved industry performance.

Study and date	Author and affiliation	Assessment of net benefits	Primary measure of net benefits/major data elements	Study conclusion and GAO comment
Restructuring the U.S. Electric Power Sector: A Review of Recent Studies (2006)	J. Kwoka	Found no reliable or convincing evidence that consumers are better off as a result of restructuring the U.S. electric power industry.	No data analysis conducted (review of other studies)	Commissioned by the American Public Power Association, reviewed 12 studies on the economic impact of restructuring in the U.S. electricity industry. Identified serious weaknesses in all 12, concluding that the methodologies consistently fell short of the standards for good economic research. Most also failed to fully address the effects of restructuring.
Midwest ISO Value Proposition (2007)	Midwest ISO	Large net economic benefits in the Midwest ISO region in various aspects of electricity services; no specific analysis of how benefits affect consumer prices.	Size, duration, cost, and probability of electricity outages; measures of the use of electricity generation capacity and of the cost of reserve generation capacity; RTO administrative and operating costs; etc.	Summarized Midwest ISO and consulting firm studies that used different approaches to estimating the economic impact of Midwest ISO operations in several areas. Concluded that $555 million to $850 million in annual net economic benefits for the region resulted from more efficient use of the industry's resources (generation and transmission assets), more reliable service, and improved planning and investment patterns. Pointed to unquantified benefits related to greater price transparency, regulatory compliance, and improved opportunities for demand response and renewable resources.

Study and date	Author and affiliation	Assessment of net benefits	Primary measure of net benefits/major data elements	Study conclusion and GAO comment
The Regional Transmission Organization Report Card: Wholesale Electricity Markets and RTO Performance Evaluation, 2nd ed. (2007)	M. J. Morey and others, Christensen Associates Energy Consulting	No conclusions on whether RTOs yielded net economic benefits or whether retail consumers were benefiting from RTOs.	Numerous metrics related to prices, costs (including RTO administrative and operating costs), market power, plant efficiencies and availability, reliability of service, and investments in generation and transmission	Prepared for the National Rural Electric Cooperative Association and intended to provide insight into RTO performance in various areas. Stated that many industry stakeholders were concerned that no single reference document was available for RTO statistics to objectively analyze RTO and RTO market performance. Consolidated data from different sources to make performance comparisons across RTOs. Mentioned areas of strength of individual RTOs and expressed concern, particularly about market power, demand response, and investments.
2006 Performance Review of Electric Power Markets (2006)	K. Rose, Institute of Public Utilities, Michigan State University, and K. Meeusen, Ohio State University	Restructuring electricity markets at least so far has resulted in no discernible benefits to consumers of electricity.	Retail prices of electricity	Commissioned by the Virginia State Corporation Commission. Addressed retail and wholesale restructuring. Recognized that RTOs' "marginal cost" pricing is needed for an efficient market under competitive conditions, but expressed concern that RTO markets were not sufficiently competitive because consumers had very limited ability to respond to high prices by reducing demand and because of evidence of market power on the supply side.
Estimating the Benefits of Restructuring Electricity Markets: An Application to the PJM Region (2003)	R. J. Sutherland	Restructuring and competition resulted in significant reductions in the prices consumers pay for electricity.	Residential, commercial, and industrial prices	Used a comparison of prices for 1997 and 2002, assuming that prices were lower in 2002 due to a large extent to restructuring. Estimated that PJM electricity consumers saved about $3.2 billion in 2002 from restructuring, equivalent to about 15 percent of their electricity bills that year.

Source: GAO.

Note: Studies are listed alphabetically by author.

[a]For comparison, the 2007 average retail price of electricity was about 9 cents per kilowatt-hour (see fig. 9).

[b]Blumsack, Lave, and Apt, *Electricity Prices* (2008), p. 24: "Overall, simply joining an RTO has had little effect on price-cost markups, although the combination of RTO membership and retail competition appears to dampen the increase in price-cost margins."

[c]Although the article did not explicitly model the effect of RTO membership, the proxy measure for restructuring in the analysis was related to RTO membership. The share of electricity generated by unregulated generators is likely to be much higher in states that were members of RTOs than in states that were not members of RTOs.

Appendix IX: Comments from FERC

FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, DC 20426

OFFICE OF THE CHAIRMAN

August 28, 2008

Mr. Mark Gaffigan
Director, Natural Resources and Environment
United States Government Accountability Office
441 G Street, NW
Washington, DC 20548

Dear Mr. Gaffigan:

Thank you for your July 31, 2008 letter enclosing the draft report, *FERC Could Take Additional Steps to Analyze Regional Transmission Organizations' Benefits and Performance*. I appreciate the opportunity to comment on this report.

In general, I want to commend the report's useful discussion of these complex issues and I appreciate its helpful conclusions. I respond to the report's specific recommendations in more detail below, and also address several other statements in the report.

The report recommends, among other things, that the Commission take the following actions with respect to regional transmission organizations (RTOs): (1) "develop a consistent approach for regularly reviewing expense information contained in RTO budgets;" and (2) "routinely review and assess the accuracy, completeness, and reasonableness of the financial information RTOs report to FERC in their Form No. 1 filings."

The Commission already has begun implementing part of this recommendation, in the context of audits. As the report notes, the Commission commenced an audit in May 2008 of the Midwest Independent System Operator (MISO). Docket No. PA08-28. The audit scope includes, for example, an examination of the RTO costs reported in the FERC Form No. 1 to determine whether MISO: (1) recorded its costs in compliance with the Uniform System of Accounts and (2) reported the costs correctly in the FERC Form No. 1. In future audit cycles, the Commission intends to perform audits periodically of financial information reported by RTOs in the FERC Form No. 1.

As to reviewing RTO budgets and the reasonableness of RTO costs, the report correctly notes that RTOs provide extensive opportunities for stakeholder input on RTO costs, and that RTOs consider such input when making decisions on expenditures. This open, transparent process allows consumer input in ways not matched by other public utilities. More importantly, the report explains that RTO costs for administration and

overhead are a small fraction of consumers' total cost of electricity. For example, the report notes that these costs were less than one percent of a typical New England consumer's electricity costs. This fact is significant in evaluating how the Commission can best use its limited resources to ensure that consumers are protected from excessive costs.

In any event, I agree with the recommendation that the Commission should increase its efforts to review RTO budgets and the reasonableness of RTO costs. I have directed the Commission's staff to evaluate possible approaches for implementing this recommendation.

The report also recommends that the Commission "work with RTOs, stakeholders, and other experts to develop standardized measures that track the performance of RTO operations and markets." Finally, the report recommends that the Commission "report the performance results to Congress and the public annually, while also providing interpretation of (1) what the measures and reported performance communicate about the benefits of RTOs and, where appropriate, (2) changes that need to be made to address any performance concerns."

I agree with the recommendation that the Commission work with RTOs and others to develop more standardized measures on the performance of RTOs. I am still considering appropriate procedures for developing such measures but agree with the goal. Also, as the report notes, it may be useful to explore whether the same measures should be developed for non-RTO regions, to provide an appropriate basis for comparison.

If the Commission's work with RTOs and others results in development of appropriate measures, I also agree that results should be transparent and could form the basis for continued improvement in RTO operations and markets. RTOs currently provide certain types of information in their annual reports on the "State of the Markets," and this may be an appropriate vehicle for providing additional information to the public on RTO performance. While I am not sure that a formal Commission evaluation of results and recommendations for changes would be feasible, useful and cost-effective on an annual basis, the Commission can work with RTOs and others to determine an appropriate interval for assessing performance and possible changes.

Apart from the foregoing, I would like to address two other statements in the report. First, the report states that the Commission "approves planning decisions the RTO makes about the need for transmission infrastructure." While the Commission approves the general procedures used by RTOs to plan transmission infrastructure, and the rate recovery of facilities built pursuant to such planning processes, the Commission does not approve RTO decisions about which projects should get built.

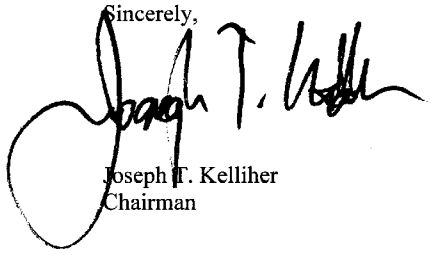
Second, the report states that RTOs, compared to other public utilities, are "in a position of greater public trust." Although it is true that RTO public utilities operate large transmission systems in the public interest, many non-RTO public utilities operate similarly large, often multi-state, transmission systems. For example, based on 2008 transmission system planning data reported to the Commission, the Southern Company forecasts a peak transmission system demand of 49,221 MW, in excess of ISO-New England's forecast peak transmission system demand of 30,768 MW and Southwest Power Pool's forecast peak transmission system demand of 43,834 MW. Further, the Southern Company reports 9,581 miles of extra-high voltage (230 kV and above) transmission lines, compared to ISO-New England's reported 7,708 circuit miles for its entire (69 kV and above) transmission system. Likewise, the Tennessee Valley Authority and Entergy Corporation forecast 2008 peak transmission system demands of 34,815 MW and 28,134 MW, and report transmission system circuit mileage of 17,000 and 15,500, respectively, also comparable in size to these RTOs.

There is no public policy reason to hold RTOs to a position of greater public trust with regard to planning and operating large regional transmission systems. All public utilities are in a position of "public trust" with regard to their operation of transmission systems and administration of electric markets. While the Commission has emphasized the need for RTOs to be independent of market participants, the Commission generally applies the same ratemaking practices to RTOs as it does to all other public utilities. For example, once the Commission approves fixed rates for a public utility, the Commission generally does not reexamine the rates annually. This is particularly true when inflation and other factors are causing costs to increase (as they are now), because any changes in the rates are more likely to be increases than decreases. Moreover, Commission efforts to treat RTOs differently than other public utilities have been rejected by the courts. *E.g., California Independent System Operator Corp. v. FERC*, 372 F.3d 395 (D.C. Cir. 2004) (rejecting FERC's effort to change CAISO's governing board, stating that the "same statutory terms that apply to FERC's regulation of CAISO apply to its regulation of all other jurisdictional utilities"); *Electric Power Supply Ass'n v. FERC*, 391 F.3d 1255 (D.C. Cir. 2004)(rejecting FERC's effort to exempt RTO market monitors from *ex parte* restrictions).

With these minor clarifications, I find that your report provides a useful discussion of issues that have been debated extensively in the electricity industry. Your recommendations generally represent meaningful measures to enhance public

understanding of the performance of RTOs and ISOs and the benefits they provide to our Nation's electricity consumers. Thank you again for the opportunity to comment on your report.

Sincerely,



Joseph T. Kelliher
Chairman

Appendix X: GAO Contact and Staff Acknowledgments

GAO Contact

Mark Gaffigan, (202) 512-3841, gaffiganm@gao.gov

Staff Acknowledgments

In addition to the individual above Jon Ludwigson, Assistant Director; Pedro Almoguera; Dan Egan; Philip Farah; N'Kenge Gibson; Paige Gilbreath; Randy Jones; Jennifer Leone; Ying Long; Alison O'Neill; Glenn Slocum; Barbara Timmerman; Walter Vance; and George Warnock provided significant contributions.

GAO's Mission

The Government Accountability Office, the audit, evaluation, and investigative arm of Congress, exists to support Congress in meeting its constitutional responsibilities and to help improve the performance and accountability of the federal government for the American people. GAO examines the use of public funds; evaluates federal programs and policies; and provides analyses, recommendations, and other assistance to help Congress make informed oversight, policy, and funding decisions. GAO's commitment to good government is reflected in its core values of accountability, integrity, and reliability.

Obtaining Copies of GAO Reports and Testimony

The fastest and easiest way to obtain copies of GAO documents at no cost is through GAO's Web site (www.gao.gov). Each weekday, GAO posts newly released reports, testimony, and correspondence on its Web site. To have GAO e-mail you a list of newly posted products every afternoon, go to www.gao.gov and select "E-mail Updates."

Order by Mail or Phone

The first copy of each printed report is free. Additional copies are $2 each. A check or money order should be made out to the Superintendent of Documents. GAO also accepts VISA and Mastercard. Orders for 100 or more copies mailed to a single address are discounted 25 percent. Orders should be sent to:

U.S. Government Accountability Office
441 G Street NW, Room LM
Washington, DC 20548

To order by Phone: Voice: (202) 512-6000
TDD: (202) 512-2537
Fax: (202) 512-6061

To Report Fraud, Waste, and Abuse in Federal Programs

Contact:

Web site: www.gao.gov/fraudnet/fraudnet.htm
E-mail: fraudnet@gao.gov
Automated answering system: (800) 424-5454 or (202) 512-7470

Congressional Relations

Ralph Dawn, Managing Director, dawnr@gao.gov, (202) 512-4400
U.S. Government Accountability Office, 441 G Street NW, Room 7125
Washington, DC 20548

Public Affairs

Chuck Young, Managing Director, youngc1@gao.gov, (202) 512-4800
U.S. Government Accountability Office, 441 G Street NW, Room 7149
Washington, DC 20548