



U.S. HOUSE OF REPRESENTATIVES  
COMMITTEE ON ENERGY AND COMMERCE

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November 25, 2015

TO: Members, Subcommittee on Energy and Power

FROM: Committee Majority Staff

RE: Hearing entitled “Oversight of the Federal Energy Regulatory Commission”

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## INTRODUCTION

On Tuesday, December 1, 2015, at 10:00 a.m. in 2123 Rayburn House Office Building, the Subcommittee on Energy and Power will hold a hearing entitled “Oversight of the Federal Energy Regulatory Commission.”

## WITNESSES

- **The Honorable Norman C. Bay**, Chairman, Federal Energy Regulatory Commission;
- **The Honorable Cheryl A. LaFleur**, Commissioner, Federal Energy Regulatory Commission;
- **The Honorable Tony Clark**, Commissioner, Federal Energy Regulatory Commission; and
- **The Honorable Colette D. Honorable**, Commissioner, Federal Energy Regulatory Commission.

## BACKGROUND

Originally established in 1920 as the Federal Power Commission, the Federal Energy Regulatory Commission (FERC) is an independent administrative agency within the Department of Energy.<sup>1</sup> FERC is tasked with regulating the transmission, reliability, and wholesale sale of electricity in interstate commerce pursuant to the Federal Power Act (FPA);<sup>2</sup> the transmission and sale of natural gas for resale in interstate commerce pursuant to the Natural Gas Act (NGA);<sup>3</sup> and the transportation of oil by pipeline in interstate commerce pursuant to the Interstate Commerce Act.<sup>4</sup> FERC also is responsible for evaluating proposals to build liquefied natural gas

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<sup>1</sup> FERC was established in 1977 pursuant to the Department of Energy Organization Act. 42 U.S.C. §§ 7101 *et seq.*

<sup>2</sup> 16 U.S.C. §§ 791 *et seq.* (Part I); 16 U.S.C. §§ 824 *et seq.* (Parts II and III).

<sup>3</sup> 15 U.S.C. §§ 717 *et seq.*

<sup>4</sup> 49 U.S.C. §§ 1 *et seq.*

(LNG) terminals and interstate natural gas pipelines, as well as the licensing of non-federal hydropower projects.

FERC is comprised of up to 5 commissioners, each of whom is appointed by the President and confirmed by the U.S. Senate for a 5-year term. One of the 5 commissioners serves as Chairman, as chosen by the President. Presently, FERC has only 4 sitting commissioners resulting from Commissioner Moeller's recent departure. FERC's organizational structure consists of 12 "offices" within the agency and 5 regional offices. FERC employs approximately 1,480 people. FERC recovers the full cost of its operations through annual charges and filing fees assessed on the industries it regulates. This revenue is deposited into the Treasury as a direct offset to FERC's appropriation, resulting in no net appropriation.

FERC's stated mission is to "assist consumers in obtaining reliable, efficient and sustainable energy services at a reasonable cost through appropriate regulatory and market means." To fulfill its mission, FERC presently identifies the following primary goals: 1) ensure just and reasonable rates, terms, and conditions; 2) promote safe, reliable, secure, and efficient infrastructure; and 3) mission support through organizational excellence.<sup>5</sup>

Given the significant shifts taking place in the energy sector, it is paramount that FERC carefully weigh decisions and policies that can adapt to new challenges and opportunities to build a market-driven, modern and flexible system while ensuring the continued safe, reliable and affordable delivery of energy to consumers. Such shifts also raise important questions as to whether FERC's statutory authorities – namely those derived from the FPA and NGA – require modernization to reflect current energy realities. It is equally critical to evaluate whether FERC is overstepping its existing statutory boundaries to pursue policy goals not intended by Congress.

## ISSUES

The following issues are expected to be examined at the hearing:

- Potential impacts of EPA's Clean Power Plan on electricity markets, fuel diversity, and electric reliability;
- FERC oversight of organized wholesale electricity markets and the operation of such markets, including energy and capacity markets;
- Grid security challenges, including physical and cyber security, geomagnetic disturbances, electromagnetic pulse, and severe weather;
- Integration of intermittent resources and distributed generation resources;
- The role of demand-side management technologies in wholesale markets;
- Electric transmission operations and planning, including implementation of Order No. 1000;
- Natural gas pipeline permitting, LNG siting, and hydropower licensing;
- FERC market manipulation authorities and enforcement practices; and
- FERC's implementation of the mandatory purchase obligation under section 210 of the Public Utility Regulatory Policies Act of 1978.

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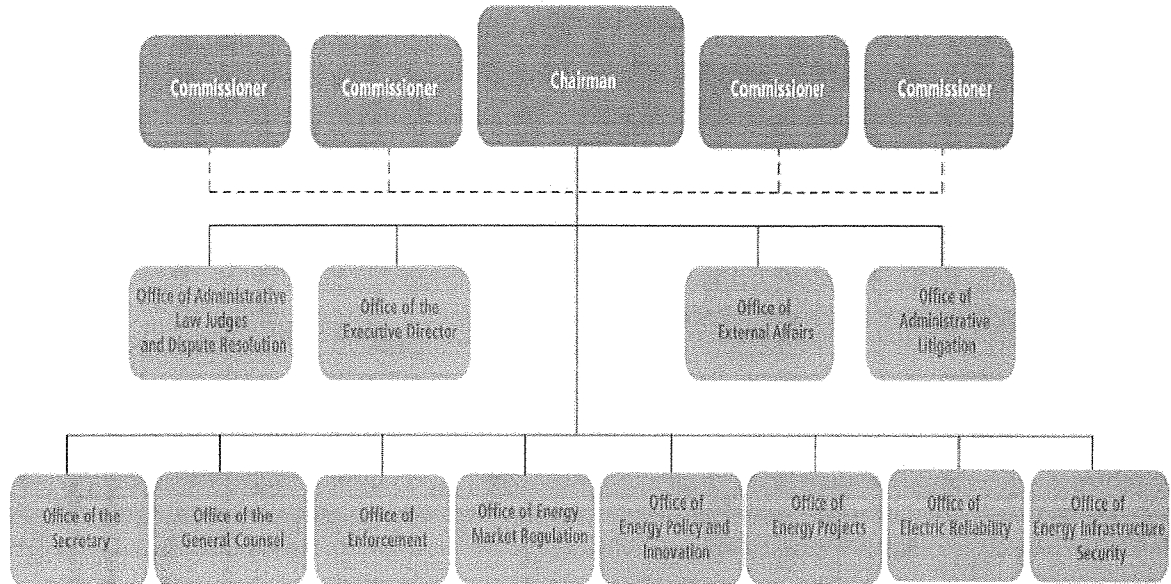
<sup>5</sup> [FERC Strategic Plan, FY 2014-2018](#) (March 2014).

**STAFF CONTACTS**

If you have any questions regarding this hearing, please contact Tom Hassenboehler or Patrick Currier of the Committee staff at (202) 225-2927.

Appendix

Federal Energy Regulatory Commission



**Testimony of Norman C. Bay  
Chairman  
Federal Energy Regulatory Commission  
Before the Committee on Energy and Commerce  
Subcommittee on Energy and Power  
United States House of Representatives  
December 1, 2015**

**Summary**

Chairman Whitfield, Ranking Member Rush, and Members of the Committee:

Thank you for the opportunity to appear before you to discuss the work of the Federal Energy Regulatory Commission (FERC or Commission). My testimony will discuss my priorities in light of the change happening in the energy space. Underpinning each of these priorities is a belief that, in approaching matters that come before the Commission, it is essential to be fair, balanced, and pragmatic; to decide cases on the merits, based on the facts and the law; and to be consensus-oriented.

My first priority is to focus on the fundamentals in the competitive markets to continue to look for ways to improve the efficiency of the markets and to deliver greater value to consumers. The Commission continues to work to promote greater efficiency, competition, and transparency in the wholesale markets, including in reviewing the competitive markets and looking at price formation in the energy markets.

Second, the reliability of the grid is a primary responsibility for the Commission. This encompasses not only the everyday responsibility over Reliability Standards, including physical security and cybersecurity, but it also includes gas-electric coordination issues. While the Commission's reliability authority is limited, it will continue to use what authority it has in a conscientious manner. In my view, it is important for utilities to push beyond the requirements of the standards to implement best practices on cybersecurity.

Third, I believe that infrastructure continues to be an important issue at the Commission. Right now, there is a need for more infrastructure, in terms of both gas facilities and electric transmission, and FERC plays a critical role in permitting and incenting the development of that infrastructure.

Finally, to accomplish my priorities, I will need to focus on human capital at the Commission. The work of the Commission cannot be done without its dedicated staff, and it is important to me that the Commission focus on retaining our current highly qualified employees, ensure knowledge transfer from those employees who do retire, and recruit highly skilled people to replace any departures, while maintaining our status as one of the very best places to work in government.

To meet all of those priorities, it will be essential to use the tools Congress has given the Commission. I look forward to working with you in the future on my priorities and would be happy to answer any questions you may have.

**Testimony of Norman C. Bay  
Chairman  
Federal Energy Regulatory Commission  
Before the Committee on Energy and Commerce  
Subcommittee on Energy and Power  
United States House of Representatives  
December 1, 2015**

**Introduction**

Chairman Whitfield, Ranking Member Rush, and Members of the Subcommittee, thank you for the opportunity to appear before you to discuss the work of the Federal Energy Regulatory Commission (FERC or Commission). My name is Norman Bay, and I am the Chairman of the Commission. My colleagues and I appreciate the opportunity to discuss the work of the Commission, particularly in this time of great change in the energy space.

My testimony will outline my priorities. Commissioner Cheryl A. LaFleur will address reliability and the competitive markets. Commissioner Tony Clark will focus on infrastructure. And Commissioner Colette D. Honorable will discuss a number of issues, including FERC's role with respect to the EPA's Clean Power Plan.

There are at least several major trends or developments driving change in the energy space. First, the shale revolution has resulted in an abundant and historically low priced gas supply. Second, organized markets are expanding, and the Nation is seeing a period of low load growth and increased energy efficiency, which impact the markets the Commission oversees. Third, more renewables and distributed generation are being integrated into the energy system. Fourth, state and federal public policies are affecting the energy industry. Finally, the energy industry is seeing a period of increased technological innovation.

My testimony will discuss my priorities given the change that is happening. Underpinning each of the priorities is a belief that, in approaching matters that come before the

Commission, it is essential to be fair, balanced, and pragmatic; to decide cases on the merits, based on the facts and the law; and to be consensus-oriented.

My first priority is to focus on the fundamentals in the competitive markets. It will be important to continue to look for ways to improve the efficiency of the markets and to deliver greater value to consumers. Second, the reliability of the grid is a primary responsibility for the Commission. This encompasses not only the everyday responsibility over Reliability Standards, including physical security and cybersecurity, but it also includes gas-electric coordination issues. Third, I believe that infrastructure continues to be an important issue at the Commission. Right now, there is a need for more infrastructure, in terms of both gas facilities and electric transmission, and FERC plays a critical role in permitting and incenting the development of that infrastructure. Finally, to accomplish my priorities, I will need to focus on human capital at the Commission. The work of the Commission cannot be done without its dedicated staff, and it is critical to recruit and retain our staff so that the Commission maintains its status as one of the very best places to work in the government.

### **Markets**

On markets, the Commission continues to work with each regional transmission organization (RTO) and independent system operator (ISO) to promote greater efficiency, competition, and transparency. As an example, the Commission's recent price formation proposal seeks to do two things: (1) to align real time settlement and dispatch intervals; and (2) to implement shortage pricing for shortage events. These measures should improve efficiency and transparency in the markets. The premise behind the proposal is very simple: resources should be compensated for the value they provide when they provide it. The proposed action should reduce uplift and promote greater price transparency, which informs decisions to build or

maintain resources, especially flexible resources. It should also promote the more efficient use of resources. The Commission is currently evaluating the comments to that proposal. In addition, the Commission recently issued an order directing each RTO and ISO to submit reports on five price formation issues in its energy and ancillary services market. Identifying best practices for these five areas should provide incentives to maintain reliability, to facilitate accurate and transparent pricing, to reduce uplift, and for market participants to operate consistent with dispatch signals.

The Commission has also signaled that it expects to address other price formation issues, including offer price caps, mitigation, uplift transparency, and uplift drivers. I think this is an example of the way in which the Commission seeks to achieve incremental progress, improving its markets, and building upon what it has done in the past. Commissioner LaFleur will also discuss the Commission's action with respect to the competitive markets and reliability.

### **Reliability**

Bulk-power system reliability is a fundamental responsibility of the Commission. It is important to note that FERC's jurisdiction and reliability authority under section 215 of the Federal Power Act (FPA) is limited to the "bulk power system," as defined in the FPA, which excludes local distribution systems, as well as Alaska and Hawaii. Under its section 215 authority, FERC cannot author or modify reliability standards, but must depend upon the Electric Reliability Organization (or ERO) to perform this task. While the Commission's authority is limited, it will continue to exercise the authority it has in a conscientious manner. The Commission and the North American Electric Reliability Corporation (NERC), the Commission-certified ERO, have made steady progress in addressing both the day-to-day nuts-and-bolts



activities necessary to keep the lights on, like tree trimming and relay setting coordination, and emerging threats, like cybersecurity, geomagnetic disturbances (GMD), and physical security. However, we will need to continue to monitor challenges with respect to day-to-day issues, building on the progress that FERC and NERC have made in setting priorities, developing and implementing reliability standards, mitigating compliance violations, and disseminating lessons learned. With respect to emerging issues, FERC has issued or directed new or modified reliability standards for cybersecurity, GMD events caused by solar storms, and physically securing critical grid infrastructure.

While we have moved forward with respect to cybersecurity, bulk-power system cybersecurity remains a top concern of mine. Compliance with the NERC Critical Infrastructure Protection standards is a good foundation to help ensure a secure grid. However, compliance with the Critical Infrastructure Protection standards will not, by itself, necessarily protect against every potential threat. In my view, it is important for utilities to push beyond the requirements of the standards to implement best practices. Moreover, a key factor in mitigating the risks posed by credible threats is accurate and timely information sharing between government and industry on the threats and vulnerabilities that could disrupt the reliable operation of the bulk-power system. This information sharing should also include any actionable steps that could be taken to minimize potential risks. It is important that government be able to share such threat, vulnerability, and mitigation information with industry without making such information available to potential wrongdoers. It is also vital that resiliency measures be in place to promote timely recovery and restoration of the bulk-power system in the event of a major incident.

The Commission has also recognized the need for greater reliability with respect to gas-electric coordination, cybersecurity, and physical security. On gas-electric coordination, the

Commission has adopted a series of changes to improve communications between interstate natural gas pipelines and electric transmission operators to promote reliable service and operational planning and to revise natural gas pipeline schedule practices to better ensure the reliable and efficient operations of our interstate natural gas pipelines and our electricity systems. The Commission also required the RTOs and ISOs to modify their day-ahead markets to coordinate them with the natural gas pipelines' scheduling practices.

Finally, as Commissioner Honorable will discuss further, the Commission has also made clear that it intends to remain engaged on any reliability issues arising from implementation of EPA's Clean Power Plan. FERC, EPA, and the Department of Energy (DOE) agreed to meet on a quarterly basis, and we are committed to working with EPA, DOE, states, the RTOs and ISOs, NERC, the regional entities, and industry to help maintain reliability. While it will take a lot of hard work, communication, and collaboration, I believe that potential reliability concerns can be addressed.

### **Infrastructure**

FERC plays a critical role with respect to hydropower, natural gas, and electric infrastructure, and Commissioner Clark's testimony will highlight FERC's work on infrastructure in greater detail. Without prejudging any matter before the Commission, I believe that there is an important need for additional natural gas pipeline and electric transmission in different parts of the United States. With respect to electric transmission, the Commission has used its authority to grant incentives for transmission development under section 219 of the FPA and continues its work on Order No. 1000, which promotes regional and interregional planning and cost allocation. On gas infrastructure, the Commission is committed to reviewing pending

licenses, permits, and applications in a thorough, professional, and timely manner. This has resulted in the certification of a number of major gas projects. On hydropower, the Commission continues to implement the Hydropower Regulatory Efficiency Act of 2013 by processing conduit exemptions and preliminary permit extensions. In my view, it is important for FERC to prioritize infrastructure, because infrastructure can enhance reliability and resiliency, provide economic benefit by reducing congestion and making markets more competitive, and further state and federal public policies.

### **Human Capital**

To accomplish any of my goals, I will need to rely on the Commission's greatest strength: its people. I am honored and humbled to work with my colleagues on the Commission and with staff. Our staff has a critical mission – to help ensure efficient, reliable, and sustainable energy for consumers – and I deeply appreciate their hard work, dedication, and commitment to furthering the public interest. I am proud to say that on the 2015 Federal Employee Viewpoint Survey, FERC ranked third out of 37 agencies for employee satisfaction and fourth for employee engagement. However, thirty percent of the Commission's work force is eligible to retire within the next few years. It is important to me that the Commission focus on retaining our current outstanding employees, ensure knowledge transfer from employees who do retire, and recruit highly skilled people to replace any departures. And we must do this in a way that maintains our status as one of the best places to work in government.

### **Conclusion**

In conclusion, in this time of great change in the energy space, my priorities will be to use the tools that Congress has given the Commission to focus on the fundamentals of the energy markets, bulk-power system reliability, energy infrastructure, and human capital. Thank you for

inviting me to testify today. I look forward to working with you in the future on these issues and would be happy to answer any questions you may have.

**Written Testimony of Cheryl A. LaFleur  
Commissioner  
Federal Energy Regulatory Commission**

**Before the  
Committee on Energy and Commerce  
Subcommittee on Energy and Power  
United States House of Representatives**

**Hearing on  
Oversight of the Federal Energy Regulatory Commission**

**December 1, 2015**

Chairman Whitfield, Ranking Member Rush, and members of the Subcommittee:

My name is Cheryl LaFleur, and I am honored to appear before you today as a Commissioner at the Federal Energy Regulatory Commission (FERC or Commission). In addition to serving as a Commissioner, I had the privilege of serving as Acting Chairman and Chairman of the agency from November 2013 through April 2015. Thank you for holding this oversight hearing on the Commission's work, and for the opportunity to testify.

Before joining the Commission in 2010, I spent much of my professional career working to serve electric and natural gas customers in the Northeast, experience that has informed my understanding that all regulatory policies affect real customers. I led energy efficiency programs and other services for business and residential customers, as well as major efforts to improve distribution reliability and safety. I had the experience of working in a vertically-integrated bilateral market as well as in a competitive marketplace served by merchant generation. Since joining FERC, I have tried to bring the breadth of my experiences with customers to further the Commission's responsibility to ensure the reliability of the nation's electric supply at just and reasonable rates. I have also made it a continuing priority to learn about the needs and opportunities of different regions of the country, and to help adapt FERC policy to reflect them.

Because American society and our economy depend upon the reliable supply of electric power, maintaining the reliability of the nation's electric grid has been my top priority since joining the Commission in 2010. In my testimony today, I am going to briefly touch on two core aspects of the Commission's reliability work: (1) our efforts to protect the grid from emerging systemic reliability challenges through the adoption of mandatory reliability standards, and (2) our oversight of wholesale electric markets. My colleague, Commissioner Clark, will address another key component of the Commission's reliability work, our responsibility for authorizing the construction of energy infrastructure.

#### **Supporting Reliability through Mandatory Reliability Standards**

The Commission's direct jurisdiction over electric reliability comes from section 215 of the Federal Power Act, which Congress enacted as part of the Energy Policy Act of 2005. Section 215 directs the Commission to certify and work with an independent Electric Reliability Organization (ERO) to develop reliability standards for the Bulk-Power System. In 2006, the Commission certified the North American Electric Reliability Corporation (NERC) as the ERO. Under the unique statutory relationship established by Congress, reliability standards are typically first developed by NERC pursuant to an open and inclusive stakeholder process, and then submitted to the Commission for review and approval. However, section 215 also vests the Commission with authority to direct NERC to develop or modify reliability standards if the Commission determines that a new or modified standard is necessary to address a reliability concern. The Commission has frequently exercised that authority to help ensure the reliability of the grid.

The reliability standards for the bulk electric system range from day-to-day, nuts and bolts requirements to keep the lights on, to forward-looking standards to address emerging issues, like cybersecurity, physical security, and geomagnetic disturbances. The Commission, NERC, and industry have made significant progress in the past several years on the nuts and bolts issues, including promulgation of standards addressing tree trimming, frequency response, under-frequency load shedding, reliability planning criteria, and protection system maintenance and testing, among other areas.

The Commission has also been actively engaged in efforts to address emerging threats to the grid. These issues present different challenges than the day-to-day activities I mentioned, because in many cases we do not have the benefit of decades of experience to draw upon. Instead, because these threats are either constantly evolving or not fully understood, the Commission must work to develop meaningful, cost-effective protections in an environment of rapid change and imperfect knowledge. Despite this difficulty, the Commission has been proactive to identify and address emerging threats.

Reliability and grid security require protection of the physical security of the assets that make up the grid. In March 2014, the Commission exercised its authority under section 215 of the Federal Power Act to direct NERC to develop reliability standards to enhance physical security measures for critical bulk-power system facilities. In November 2014, the Commission approved the proposed reliability standards, which require owners and operators of bulk-power system assets to (1) perform a risk assessment of their systems to identify critical facilities; (2) evaluate potential threats to, and vulnerabilities of, those critical facilities; and (3) develop and implement a security plan to protect against attacks on those facilities. Entities subject to those requirements are now implementing them to protect the grid.

With respect to cybersecurity, the Commission and NERC have continued to refine and improve the Critical Infrastructure Protection Standards to address new challenges. In late 2013, the Commission approved Version 5 of the Critical Infrastructure Protection Standards, requiring for the first time that all electric system cyber assets receive some level of protection, commensurate with their impact on the grid. The industry is now working to implement those requirements, and the Commission and NERC are working to assist with the transition. In addition, this summer the Commission announced that it is considering whether to direct the development of a Reliability Standard addressing cyber threats to the electric infrastructure supply chain, and the Commission has scheduled an upcoming technical conference to further explore the issue. We will continue to monitor cybersecurity developments and determine whether additional reforms to the reliability standards are appropriate.

The Commission's work on cybersecurity threats is not limited to modernizing the standards, however. Because cyber threats are constantly evolving, we recognize that they cannot be addressed with reliability standards alone. Therefore, the Commission and its staff work with leaders across the electric industry and federal and state governments to identify, communicate, and respond to cyber threats against the grid.

The Commission has also sought to address the threat posed by geomagnetic disturbance (GMD) events caused by solar storms. This issue has been a personal priority during my time at the Commission, given the potentially catastrophic effects that a major blackout triggered by a GMD event could have on the country. To date, the Commission has taken a two-step approach to address this threat. First, using its authority under section 215 of the Federal Power Act, the Commission directed NERC to develop a standard or set of standards that require transmission owners to take operational steps to prepare for GMD events. The Commission approved those



standards in June 2014. Next, the Commission directed NERC to develop standards that require transmission owners to protect against instability, uncontrolled separation, or cascading failures of the Bulk-Power System caused by a GMD event. In May, the Commission proposed to approve NERC's second-phase GMD standards, but to require certain revisions: (1) tightening the definition of a benchmark GMD event, which will be used to establish the baseline protections that must be in place; (2) adding more monitoring and assessment of GMD data; and (3) ensuring that corrective action plans are implemented in a timely manner. That proposal is currently pending before the Commission.

As the Commission, NERC, and industry have gained additional experience under the current standards, we have made adjustments to the reliability standards and the oversight processes to prioritize the protection of critical assets. Going forward, we will continue to be vigilant in our efforts to improve on the progress the Commission and NERC have made in setting priorities, developing and implementing reliability standards, mitigating violations, and disseminating lessons learned.

### **Supporting Reliability through Market Oversight**

In addition to our reliability standards work, the Commission's oversight of wholesale electric markets plays a critical role in ensuring reliability of the nation's electric supply. To continue to meet our core responsibilities – promoting reliability and ensuring just and reasonable rates – the Commission has worked to ensure that these markets adapt to the significant changes in the nation's generation resource mix.

Two-thirds of the nation's population is served by the competitive regional electric markets run by Regional Transmission Operators (RTOs) and Independent System Operators

(ISOs). These markets have expanded in recent years, as more entities recognize the value of markets in ensuring reliability and the affordability for customers. At the end of 2013, the Midcontinent ISO expanded to include large parts of Louisiana, Mississippi, Arkansas, Texas, and Missouri. In October 2015, the Southwest Power Pool nearly doubled in size to incorporate the “Integrated System,” which spans seven states in the Upper Midwest. Finally, the Energy Imbalance Market, which is run by the California ISO and covers parts of six states, began in late 2014, and several additional utilities have announced their intention to join.

The nation is experiencing significant change in the resource mix used to generate electricity. There are three primary drivers of this change. First, we are experiencing a significant increase in the reliance on natural gas for electric generation, due primarily to the increased availability and affordability of domestic natural gas, but also to its relative environmental advantages and its role in balancing the growing fleet of variable resources. Second, we are seeing considerable growth in renewable and demand-side resources, fostered by developments in technology and by policy initiatives at both the state and Federal level. Finally, new environmental regulations, particularly the Environmental Protection Agency’s Mercury and Air Toxics Standards and Clean Power Plan, which Commissioner Honorable will address in her remarks, are driving changes in power supply.

These changes are stress-testing the competitive markets. The growth of natural gas resources as well as new environmental requirements are leading to the retirement of baseload capacity, particularly coal, and driving the need for new investment. During the initial transition to competitive market structures, most regions had excess capacity, and regional markets produced efficiencies that led to lower wholesale prices. As resources have retired, some areas are transitioning from generation surpluses to scarcity. That scarcity is leading to higher forward

capacity prices and more focus on market outcomes. At the same time, affordable and abundant domestic natural gas is creating challenges for other resources, while the deployment of new renewable technologies is leading to integration challenges. In many places, we see lower energy prices during most hours due to the low variable cost of renewables and gas, yet we also see spikes in the cost of electricity during times of system stress.

These changes are also causing the competitive market operators across the country to examine their rules to ensure that reliability is properly valued and sustained. At a time of resource change and the need for new investment, it is particularly important that markets send accurate price signals to both existing and new resources. The Commission's recent efforts have focused on all aspects of our competitive markets, including the energy, capacity, and ancillary services markets. As I mentioned when I previously testified before this committee, starting in 2013, the Commission has worked to help adjust capacity markets to these new challenges and attract needed investment in new and existing resources. In the last year and a half, the Commission approved market changes in eastern RTOs that redefine the capacity product to procure generation resources that can perform when needed most, to ensure that we can keep the lights on during extreme weather events and other times of system stress.

In addition to our efforts on the organized capacity markets, last year the Commission began an effort to examine price formation in organized energy markets, to ensure that energy prices are providing accurate and transparent price signals to both existing and new resources. The primary goal of the price formation effort is to ensure that marginal energy prices properly and transparently reflect the true costs of supplying electricity and support efficient investments to maintain reliability. FERC held a series of technical conferences over the last year on significant but highly technical issues that impact energy prices in the wholesale markets, and the

Commission has begun to act on discrete issues identified through that process. In September, the Commission issued a Notice of Proposed Rulemaking on aligning settlement intervals with dispatch intervals and on shortage pricing, to help ensure that real-time prices reflect the true value of providing energy and provide appropriate signals for resources to respond to the operating needs of the market. Last month, the Commission issued an Order Directing Reports, seeking more information on several other technical areas that impact price formation in the markets, including pricing of fast-start resources, commitments to manage multiple contingencies, look-ahead modeling, uplift allocation, and transparency. The Commission has also signaled its intent to act in the coming months on other price formation issues.

Separately, the Commission has also focused on gas-electric interdependence issues, an effort that grew out of the increased reliance on gas-fired generation, particularly in regions that also rely on natural gas for heating during the winter. After engagement with stakeholders, the Commission determined there was a need to better align the gas markets and the electricity markets to optimize the use of our pipelines to ensure the reliable operation of gas-fired generation. On that front, FERC established new rules to better harmonize scheduling in the gas and electric markets to provide the most efficient scheduling rules for both industries. The Commission also modified its rules to promote increased communication between transmission operators and gas pipelines. These market rules changes should help maintain reliability at times when gas pipeline capacity is stressed.

The Commission also adopted a number of other markets rules to help accommodate the integration of renewables and other new technologies into the energy markets. In recent years, FERC has issued rules to integrate variable energy resources, compensate resources for providing frequency regulation in a way that recognizes greater contributions from faster

ramping resources, compensate demand response resources, and reform transmission planning and cost allocation requirements so that they consider, among other things, transmission needs driven by state and federal public policy requirements. All of these rules are intended to ensure that we are optimizing the resources that serve customers and support our goals of ensuring grid reliability.

Ultimately, maintaining the reliability of the electric grid is of paramount importance to our way of life and our economy. The Commission's responsibilities for reliability are at the very core of our work, and I am honored to play a role in those efforts. I thank the Subcommittee for giving me the opportunity to appear before you today, and I welcome your questions.

**Written Testimony of Tony Clark  
Commissioner  
Federal Energy Regulatory Commission**

**Before the  
Committee on Energy and Commerce  
Subcommittee on Energy and Power  
United States House of Representatives**

**Hearing on  
Oversight of the Federal Energy Regulatory Commission**

**December 1, 2015**

Chairman Whitfield, Ranking Member Rush and Members of the Committee, thank you for the invitation to appear before you today. My name is Tony Clark and I am honored to serve as a Commissioner of the Federal Energy Regulatory Commission.

A central focus of FERC's job is to help ensure the provision of reliable, affordable energy to the American people. This mission supports a vibrant economy, and the health, safety and quality of life of our nation. FERC accomplishes its goals through a number of actions, including our oversight of jurisdictional markets, our responsibilities for bolstering reliability, and our duty to oversee the prudent development of certain energy infrastructure.

My submitted testimony focuses on those areas of the Commission's responsibility that relate to energy infrastructure. Necessarily, that discussion will lead me to provide some comments on the Environmental Protection Agency's recently finalized rules related electricity sector CO2 emissions under section 111(d) of the Clean Air Act.

The Commission plays an especially important role in the siting of hydroelectric and natural gas infrastructure.

With regard to hydropower licensing, the Commission continues to advance Congress' initiatives in the Hydropower Regulatory Efficiency Act of 2013 by processing conduit exemptions and preliminary permit extensions.

Since issuance of the Act through November 24, 2015, staff has received notices of intent to construct 67 qualifying conduit facilities, 39 applications for extensions of permit terms, and no small hydropower exemption applications for projects between 5 and 10 MW. Of the 67 conduit facilities, 55 have been qualified, 8 were rejected because they did not meet the criteria set forth in the Act, and the remaining 4 are pending. Of the 39 applications for permit extensions, 20 were granted and 19 were denied due to lack of diligence.

On October 22, 2013, in compliance with the Act, the Commission staff held a workshop to investigate the feasibility of a two-year process for the issuance of a license for hydropower development at non-powered dams and closed-loop pumped storage projects. Participants discussed whether such a process is feasible, presented ideas on the details of a two-year licensing process, and discussed potential criteria for identifying projects that may be appropriate for a two-year licensing process. On January 6, 2014, the Commission issued a notice soliciting pilot projects to test a two-year process. The notice also established certain criteria that a proposed project must meet to qualify to test a two-year process. In response, two pilot project proposals were filed. Commission staff rejected one because the project did not meet the criteria specified in the January 6, 2014 Notice.

The Commission did, however, notice a proposal for Kentucky River Lock & Dam No. 11 Hydroelectric Project No. 14276 on June 3, 2014. Commission staff held a technical conference with the applicant and interested parties on June 19, 2014, to discuss the project's proposed two-year process plan and schedule. On August 4, 2014, Commission staff approved the proposal to test the two-year process for the project, including a proposed license application due date of May 5, 2015. The prospective applicant filed a license application for the project on April 16, 2015. After a series of staff information requests, advisory phone calls, and responses by the applicant, on September 25, 2015, Commission staff issued notice that the application was ready for environmental analysis notice. Comments, recommendations, terms and conditions were due by November 24, 2015. The next step in the process is issuance of staff's environmental document.

On a separate hydropower topic, I feel it important to highlight for the Committee that the number of projects that will begin the relicensing process will substantially increase beginning in FY 2016 and continue well into the 2030s. Between FY 2016 and FY 2030, over 500 projects, which represent about 50 percent of our licensed projects and about 30 percent of the generating capacity under Commission jurisdiction, will begin the pre-filing consultation stages of the relicensing process. For those of you that have licensed projects in your districts, I am sure you will want to be up-to-speed on these matters because hydropower relicensing is the sort of issue that can generate considerable constituent interest.

Once new licenses are issued, the license implementation phase will begin. Currently, the Commission's license compliance and administration division is processing over 3,500 license-related filings per year. This workload is certain to increase given the number of projects to be relicensed.

Many of these projects now on the eve of relicensing were first licensed in the early to mid-1980s. This was prior to enactment of modern environmental standards, including those of the Electric Consumers Protection Act of 1986, which first directed the Commission, when issuing licenses, to give equal consideration to energy conservation, fish and wildlife protection, recreational opportunities, and environmental quality, and required that licenses be granted upon the condition that the project adopted shall, in the judgment of the Commission, be the one best adapted to a comprehensive plan encompassing fish and wildlife protection, irrigation, flood control, and water supply.

As we work through this period of substantial relicensing, I hope you and your staff members will see FERC as a resource to help provide background on the various projects and the Commission's regulatory process.

Moving to natural gas; within the natural gas sphere of our responsibilities, since I last appeared before you, the Commission has continued its work related to the siting of interstate pipelines and LNG export facilities. With regard to pipeline projects, although the Commission's work is perhaps more visible than it has ever been, the Commission's pipeline certification activity itself is within the historical norm as shown by the table below:



<b>Major Projects</b>				
<b>Year</b>	<b>Number of Projects</b>	<b>Capacity (MMcf/d)</b>	<b>Miles of Pipeline</b>	<b>Horsepower (HP)</b>
2005	17	8,746.4	703.0	123,036
2006	19	8,480.6	1,241.4	306,557
2007	28	18,874.2	2,591.2	849,110
2008	24	13,954.2	2,084.1	648,838
2009	23	9,781.0	953.9	728,129
2010	21	9,079.1	1,568.6	496,994
2011	15	4,032.8	303.8	280,255
2012	18	4,449.0	193.1	145,920
2013	17	7,308.9	262.9	185,011
2014	20	10,999.9	418.6	472,932
2015-Nov	20	9,537.0	262.9	292,490
<b>Totals</b>		<b>105,243.1</b>	<b>10,583.5</b>	<b>4,529,272</b>

In addition, the Commission continues to carry out its responsibilities related to the siting of LNG facilities. As of November 2015, the Commission has authorized 7 LNG export projects, totaling 10.62 Bcf/d in capacity. Another 10 projects have pending formal applications in various stages of review totaling 12.53 Bcf/d in capacity. Not included in these totals are the 12 other projects that are in the “pre-filing” stage.

The ongoing demand for natural gas infrastructure is not surprising given the changes occurring in the energy world. A combination of affordable natural gas and certain state and federal environmental policies have sharply increased electricity generation from natural gas and renewables, often at the expense of coal.

Working within the statutes passed by Congress, FERC has the responsibility to ensure that this infrastructure is sited the right way, which is accomplished through a siting process that allows various parties and stakeholders to be heard via a record that is compiled with both written submissions and public testimony.

While the Commission is generally able to handle most energy projects in a timely matter – in the last 10 years, 92% of all applications have been processed and completed within 12 months, I believe it is fair to observe that infrastructure development and siting is becoming more challenging.

Infrastructure, be it related to natural gas, large hydropower projects, electric transmission or generation (the last two being sited at the state level) engenders a level of opposition that was rarely seen in the past.

In years gone by, intervention in regulatory proceedings tended to be driven by those most directly affected by the energy project – for example a landowner who would prefer an energy project be located on “Site A” rather than “Site B.” The regulatory process is well equipped to consider and weigh these sorts of comments, and we still do receive a fair amount of this type of intervention in our cases. In fact, as a Commissioner, I have always viewed this type of intervention as particularly critical to our work because it helps develop a complete record regarding where infrastructure is both well and poorly suited.

But today there is an increasing trend towards “Just Say No” intervention. This intervention is designed to block entire classes of infrastructure projects – either through outright denial or through a strategy of defeat through delay. It is not opposition based on a particular project or its location; it is an opposition to all infrastructure as a matter of ideology. Often this opposition is from those expressing concern about climate change and carbon emissions.

The irony is that much of this infrastructure is being necessitated by the very regulations that are being promulgated in the name of reducing carbon intensity in the electric generating sector.

In the case of gas pipelines, it is in large part to fuel generators that are either replacing higher carbon emitting baseload coal plants or being paired with variable energy resources like intermittent wind and solar.

In the case of electric transmission lines, it is often to facilitate geographically distant renewables, and to optimize their use to compensate for their inherent intermittency.

I believe a major challenge for energy regulators over the next several years – both at the federal and state levels – will be to grapple with this tension of dealing with policies that necessitate large infrastructure projects in an era of heightened infrastructure opposition.

Dealing with these issues will be even more important should the Environmental Protection Agency's new 111(d) carbon regulations come to pass. For if infrastructure development is largely delayed or blocked, I have difficulty envisioning affordable or reliable ways for utilities to meet the EPA mandates.

These 111(d) rules put regulatory commissions at the state and federal level in a very precarious position. The rules are not ours; they are the product of the EPA. Yet nearly all of the potential negative outcomes fall squarely on our shoulders, whether related to affordability or reliability. While I continue to have concerns related to potential market impacts and jurisdictional issues, for the purposes of this testimony, I will highlight the potential tension between 111(d) and infrastructure.

In this regard, I note the timelines contained in the EPA's rules. While the final rule, as compared with the draft rule, extended state compliance timelines by up to 2 years, it is worth remembering how long it takes infrastructure projects to be developed.

Final state implementation plans would not be due, in many cases, until 2018. Compliance targets begin in 2022. Yet major pipeline and transmission projects can take anywhere from 3-12 years, or longer, to accomplish from concept to in-service completion.

I would emphasize that if a generation resource shift is compelled prior to necessary infrastructure completion, electric reliability could be a challenge, but regardless, affordability will almost certainly suffer. Substantially higher energy costs have been the result everywhere this has occurred, and it will not be any different in this case if expanded infrastructure is not built in time to meet the generation mix changes required by the regulation.

This problem, at least from an affordability standpoint, will be compounded in certain parts of the country, where there is a significant risk of infrastructure assets being stranded years before the end of their useful lives. This means consumers will be paying not just for the new infrastructure, but also for the previous investments in assets that are being retired to comply with the EPA regulation.

The impact of this rule will not be evenly felt because of the nature of the EPA targets themselves. To be perfectly honest, some states don't have all that difficult a road to compliance. This is often related not so much to any particular policy choice the state made, but rather to the vagaries of the math behind the state-by-state targets set by EPA in relation to the nature and vintage of a state's legacy electric generation fleet.

For example, some states have older conventional plants that were just recently retired or are soon to be retired for reasons other than environmental regulations. These states may find targets that are relatively easy to meet because they will get full carbon reduction credit for the retirement of assets that were due to be retired anyway. It can be argued this has more to do with luck than planning.

At the other end of the spectrum are states like my home state of North Dakota. Between the draft and final rules, the state's emissions reduction target skyrocketed from 11% to 45%. In North Dakota, actual emissions were down 11% between 2005 and 2014, despite a rapidly growing economy. Utilities during that timeframe built a significant amount of wind power, in part as a hedge against carbon regulatory risk. Unfortunately, it turned out to be a hedge for which they will receive no credit. Additionally, the state's coal fleet is still relatively young, and has thus incurred recent investments for environmental compliance. In fact, North Dakota is proud to be one of only a few of states in full attainment of EPA's National Ambient Air Quality Standards. Nonetheless, the state was given an emissions reduction target so punitive that I struggle to conceive of a way it can meet it in an affordable manner. Indeed, the North Dakota Health Department has estimated the annual cost of compliance if the state adopted an emissions credit trading program could top \$400 million per year; a staggering figure for a state of less than 750,000 people.

I hope Committee members understand how problematic this is for states like North Dakota that did not fare so well under the EPA's state-by-state emissions target math. Such states stand to see a huge transfer of wealth out of them, and will receive little in quantifiable environmental benefits in return given the worldwide nature of carbon emissions.

Mr. Chairman and Committee Members, that completes my submitted testimony, I would be happy to answer any questions you may have.

**Written Testimony of Colette D. Honorable, Commissioner  
Federal Energy Regulatory Commission  
Before the Committee on Energy and Commerce  
Subcommittee on Energy and Power  
United States House of Representatives  
December 1, 2015**

**Hearing on, “Oversight of the Federal Energy Regulatory Commission”**

Good morning Chairman Whitfield, Ranking Member Rush, and members of the Energy and Power Subcommittee. I am Colette Honorable, a member of the Federal Energy Regulatory Commission (Commission).

Thank you for the opportunity to testify at today’s hearing. I am the newest member of the Commission, having been sworn in this past January. This is my first appearance before this august subcommittee and I am grateful for the opportunity.

Prior to joining the Commission, I served as a commissioner and chairman at the Arkansas Public Service Commission for seven years. I also had the privilege to serve as President of the National Association of Regulatory Utility Commissioners (NARUC) when the Clean Power Plan proposal was issued. This role offered me an opportunity to interact with and gain an appreciation for the diversity of the states and regions and lead the association's engagement with the Administration and other energy principals on a wide range of energy issues. This experience provided a unique foundation for my current tenure at the Commission.

Our mission at the Commission is to regulate the interstate transmission of electricity, natural gas and oil. We oversee the reliability of the Bulk-Power System, regulate wholesale energy

markets, consider proposals to build energy projects, and ensure wholesale sales of electricity in interstate commerce are just and reasonable. This work is especially significant because our economy is increasingly dependent upon reliable and affordable energy. I look forward to discussing the following issues in my testimony today: reliability generally, the Clean Power Plan, infrastructure development, and markets.

### **Reliability**

I will begin with our overarching work regarding the reliability of the electricity grid. In the Energy Policy Act of 2005, Congress granted FERC authority to oversee the development and enforcement of reliability standards and impose civil penalties where necessary to ensure the reliability of the Bulk-Power System. Over the ensuing years, the agency designated the North American Electric Reliability Corporation (NERC) as the Electric Reliability Organization responsible for developing reliability standards. In its oversight role, the Commission has worked collaboratively with NERC to incrementally refine those standards. Moreover, our Office of Energy Infrastructure Security routinely collaborates with federal and state agencies, and energy system owners, users, and operators to identify, communicate, and mitigate cyber and physical threats to the Nation's energy facilities. This also includes a voluntary commitment to proactively assess industry systems for weaknesses and collaborate on securing infrastructure. I believe the systems in place are serving consumers of this country well.

The ongoing implementation of NERC's Risk-Based Compliance Monitoring and Enforcement Program is an excellent example of the collaborative work between NERC and the Commission to ensure the reliable operation of the Bulk-Power System. This program uses risk-based

reliability assurance methods instead of monitoring all reliability standards and requirements or compliance issues in the same manner. This will enable NERC and the industry to dedicate their resources where they are most needed to ensure the reliable operation of the grid. The Commission continues to oversee this effort to ensure that the program becomes more efficient without sacrificing system reliability.

The commission has also approved the consolidation of multiple Reliability Standards in the past year. Through these rulemakings, the Commission seeks to promote efficiency by reducing requirements that are either redundant with current requirements or have little reliability benefit. These consolidated Standards have the potential to increase reliability by improving the efficiency of compliance programs industry-wide.

Separately, the Commission issued a Notice of Proposed Rulemaking to address threats from geomagnetic disturbances, or space weather. These high-impact, low-frequency events have the potential to severely impact the reliable operation of the Bulk-Power System. If implemented, this proposal would require planning coordinators, transmission planners, transmission owners and generator owners to take appropriate actions to prepare to withstand geomagnetic disturbances.

### **Clean Power Plan**

Our focus on reliability has continued through our engagement with stakeholders in the energy sector and the Environmental Protection Agency (EPA) during implementation of the Clean Power Plan. In early 2015, FERC hosted a series of technical conferences on the implications of



compliance efforts with regard to the Clean Power Plan. These conferences, held in Washington, D.C., Denver, and St. Louis, aided the Commission in assessing whether and how the Plan may impact the reliability of the grid. We heard from diverse stakeholder groups: regulators, utilities, regional transmission organizations (RTOs) and independent system operators (ISOs), environmental groups and consumer organizations. These conferences raised a host of issues that informed the Commission's advice and counsel to the EPA. In addition, I co-moderated a "deep dive" workshop in May 2015 sponsored by the Bipartisan Policy Center (BPC) on specific reliability measures such as the Reliability Safety Value and Reliability Assurance Mechanism that many believe will help shore up the reliability during compliance with the Clean Power Plan if necessary.

The feedback the Commission received during our technical conferences, along with information gathered from the BPC event and other types of engagement, including letters and comments from stakeholders, informed our communication to EPA this past May. In a letter signed unanimously by the Commission, we advised EPA to consider reviewing the interim compliance timeline set forth in the proposed Clean Power Plan to ensure flexibility in the early years of compliance. In addition, we encouraged EPA to consider adopting both a "Reliability Safety Valve," which would allow the Commission to work with the EPA to address temporary, unexpected impacts upon Bulk-Power System reliability, and a proactive process to provide for reliability monitoring and assistance. Under the latter process, existing planning procedures should be used initially to review state plans for potential reliability concerns. The EPA accepted our recommendations in the final rule.

Going forward, the Commission stands ready to work with EPA, the Department of Energy (DOE), the states, regions, NERC and other stakeholders. The Commission has offered to review analyses or request additional assessments as necessary. We also noted that the Commission could continue holding technical conferences or other public workshops as states and utilities begin implementation of the rule. Pursuant to a joint staff working document that informs our interagency work, we will continue participating in future discussions with EPA and the Department of Energy (DOE). This may include further engagement with NARUC or the BPC, in addition to continuing our work with RTOs, ISOs, NERC and regional entities.

Since the issuance of the final Clean Power Plan, I have continued engaging with diverse groups. For example, in October I was invited to participate in a workshop hosted by the BPC and the Great Plains Institute which focused on compliance in the Midwest. Although most of these states are challenging the rule in court, many are also working in parallel on compliance plans should the rule be upheld. Indeed, my home state of Arkansas is a fitting example. During my tenure as chairman of the Arkansas Public Service Commission, we worked closely with the Arkansas Department of Environmental Quality and a diverse group of stakeholders to evaluate the issues associated with Arkansas's compliance with the Clean Power Plan. These discussions have continued, even though the state has joined the litigation against the final rule. According to press reports, thirteen other states have reportedly indicated they will follow a similar path as Arkansas. A number of studies indicate that if the rule is upheld, fully contemplated compliance plans will have considerable potential to reduce compliance costs, particularly those undertaken in regional efforts. In the Midwest, for example, both the Southwest Power Pool and the Midcontinent Independent System Operator have released studies concluding that regional

compliance with the Clean Power Plan is more efficient, less costly, and therefore better for consumers. It is imperative that all affected stakeholders engage and work collaboratively to maintain reliability while minimizing any potential cost impacts of plan implementation going forward.

### **Infrastructure**

Market realities, new technologies and innovation, and policy and regulations at the Federal and state levels are causing a dynamic shift in our energy usage. With natural gas and renewables comprising a larger role in the U.S. generation resource mix, many new gas infrastructure projects are being proposed for our consideration. The Commission's role includes review of proposals to construct liquefied natural gas terminals and interstate natural gas pipelines, as well as licensure of hydropower projects to ensure that such projects are in the public interest.

In September 2015, the Commission's Office of Energy Projects reported that 60% of the new generation-in service this year (January-September 2015) was from renewable sources. Most of this new capacity was wind—2,966 MW of installed capacity—and solar, with 1,137 MW of installed capacity. Gas accounted for 2,884 MW, or 39.6% of installed capacity thus far in 2015. In order to bring this new and diverse generation to market, new infrastructure—pipelines, power lines, and other technologies—will be necessary.

In the electric industry, RTOs, ISOs, transmission providers, and their respective stakeholders are addressing the need for additional transmission projects and the ability to integrate storage, energy efficiency and demand response in regional and interregional planning processes. We

have continued to refine the Order No. 1000 competitive solicitation process, which has helped bring together a number of significant stakeholders around regional planning processes. While the planning processes are almost fully underway, as demonstrated in compliance filings, regional differences and modeling issues are proving to be particularly challenging for interregional planning processes. As these new processes are evolving, we will continue to listen to stakeholders and be open-minded on changes necessary to improve Order No. 1000. I look forward to working with my colleagues to ensure that our efforts pursuant to Order No. 1000 meet their intended goals.

### **Markets**

The last matter I will discuss in my testimony is our ongoing work regulating wholesale electricity markets.

Overall, we have a responsibility to ensure that electricity markets are functioning as intended. To that end, the Commission is currently undertaking a broad review and assessment of price formation in energy and ancillary service markets. Energy and ancillary service markets are more mature than capacity markets, but I believe it is important to scrutinize these markets to observe recent trends in generation retirement and renewable resource penetration. We have seen generation resources retiring due to economic considerations, along with an increased need for ramping capabilities and flexible resources as more intermittent resource connect to the grid. The Commission recently conducted three technical conferences to explore these and other issues. Our continuing work on price formation will focus on: compensating generation resources for the value they provide; appropriately reflecting commitment and dispatch decisions

in market prices; providing needed transparency and certainty; and, minimizing cost to consumers. The Commission recently took several steps to improve energy and ancillary service price signals and I expect more actions will follow.

Federal and state policies often interact to influence capacity markets. We will continue to evaluate the design and operation of all capacity markets and find new ways to balance the interests of Federal and state policies. As capacity markets across the country continue to respond to dynamic changes in generation, I have appreciated the opportunity to engage with RTOs and ISOs and stakeholders to gain a better appreciation of the diversity of the regions and their robust efforts to support efficient market operations.

We are also observing growth and shifts in regional organization participation as well. The successful launch of market operations as well as markets yielding benefits greater than originally expected all demonstrate that, while not perfect, regional markets continue to yield benefits for consumers nationwide.

### **Conclusion**

I'd like to take this opportunity to offer my appreciation for the hard work of my colleagues and our staff. The work we do is essential to supporting the ongoing work by industry, regulators and other stakeholders in the energy sector, which is vital for a thriving economy. We take our jobs seriously and I am proud to be a member of this Commission.

I am also appreciative of the important oversight work of the Energy and Power Subcommittee. I look forward to working with you throughout my term at the Commission and am pleased to answer any questions you may have.

Thank you.