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**DEVELOPMENTS IN
FEDERAL REGULATION OF NATURAL GAS & POWER:
COORDINATION, SECURITY & DIVERSIFICATION**

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DEVELOPMENTS IN FEDERAL REGULATION OF NATURAL GAS & POWER: COORDINATION, SECURITY & DIVERSIFICATION

The agenda for federal regulation of the natural gas and electric power industries currently emanates from the executive-branch agencies and the courts, with no significant recent input from Congress. That agenda is driven by two very strong trends. One is the dependence of nearly every aspect of the national economy on a reliable supply and delivery of electric energy to support online exchanges of information and commerce. The other is how that electric energy is generated. The relative abundance and competitive pricing of natural gas occasioned by innovative extraction technologies coupled with mandated reductions in emissions of air pollutants—now including greenhouse gases (GHG)—has set us on a trajectory in which natural gas, renewable power sources and demand response will increasingly displace coal in the next twenty years (if not sooner) as the primary engine of the energy economy.

My presentation addresses these trends in federal energy regulation in this sequence. First I address the Federal Energy Regulatory Commission's (FERC) ongoing priority to coordinate the operation and timing of the Nation's natural gas and electricity markets. Second I outline FERC initiatives to facilitate expansions and upgrades of the Nation's natural gas pipeline delivery network and requirements that the operation and expansion of the high-voltage electricity grid be planned and executed regionally, with input from all participating sectors. Third I describe efforts to protect natural gas and power markets, on the one hand, from financial manipulation, and, on the other hand, from both cyber and physical assaults, as well as atmospheric disruptions.

Fourth my presentation will pivot to the changing sources of energy supplies to the bulk electric system. The drivers here are both federal and state. Increasingly stringent controls under the Clean Air Act (CAA) on air emissions will make coal less-and-less viable as an energy source, barring any federal financial support for developing carbon capture and storage technologies. Strict environmental controls under the Clean Water Act (CWA) on power plant water intake and discharge systems will increase the cost of all thermal generation—coal, natural gas and nuclear—and could make those energy sources unavailable for new or possibly even continued operation in arid climates, such as the desert southwest. Fifth will be the combined federal and state efforts to promote other clean sources of energy for the grid through tax incentives, renewable portfolio standards, and demand response participation in both energy and capacity markets.

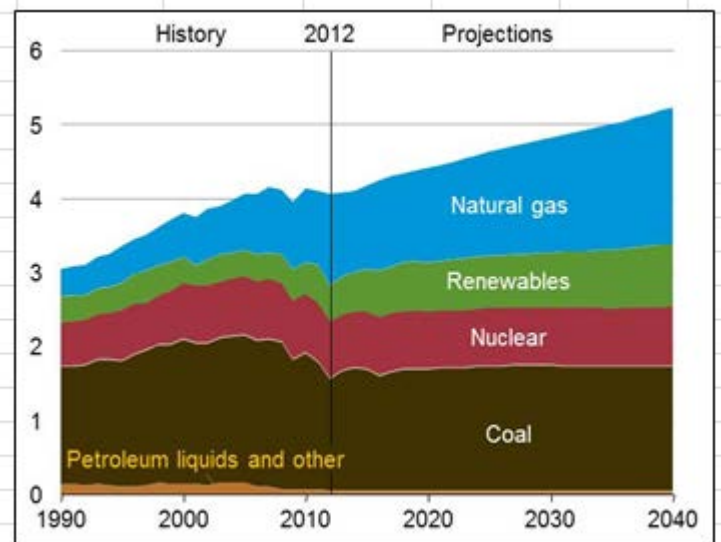
I. ENERGY MARKETS ORGANIZATION & OPERATION

A. Coordination of Natural Gas & Electricity Markets

FERC and the North American Energy Standards Board (NAESB) have devoted considerable attention to synchronizing the timeframe within which natural gas transportation is scheduled and natural gas-fired and other generating units are scheduled and dispatched. This synchronization is the subject of ongoing FERC investigations and a proposed rulemaking on the Coordination of the Scheduling Processes of Interstate Natural Gas Pipelines and Public Utilities.¹

Natural gas's share of baseload and mid-merit power generation has increased over the past decade and, as shown in Figure 1 below, that share is expected to increase to the point that it exceeds the quantity of coal-fired generation by 2035 if not sooner.

Electricity Generation by Fuel in the Reference Case,
1990-2040 (trillion kilowatt hours)



Source: U.S. Energy Information Administration/Annual Energy Outlook 2014

Figure 1

Unlike traditional baseload units that bid into markets as price-takers, natural gas-fired units offer into markets—particularly organized Regional Transmission Organization (RTO) or Independent System Operator (ISO) markets with single-clearing price auctions for next-day or same-day delivery—at prices reflecting their marginal operating costs. Much of that cost is the cost of purchasing and scheduling the transportation and delivery of natural gas. Capturing those economics has proven to be problematic in most markets because the timeframe for scheduling interstate natural

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