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Before the Subcommittee on Energy
Energy and Commerce Committee
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Summary: NRG Energy, Inc. ("NRG") is an owner and operator of power plants across the United States. We also have a retail business that serves approximately 3 million customers. As a purely competitive company with no captive ratepayers, NRG and its shareholders bear the risks (and the profits or losses) associated with its participation in the wholesale and retail electricity markets. We believe that fair and robust competition in the electric sector is the best means of delivering value to consumers.

Management of financial and operational risk is critical to the competitive markets and the participants in those markets. NRG relies on a wide variety of tools to manage these risks and reduce the delivered cost of power to consumers. Included in that tool chest are a wide-array of financial products traded within the organized energy markets, bilaterally between market participants, and through centrally-cleared exchanges.

NRG uses Financial Transmission Rights ("FTRs") and "virtual" transactions every day to produce, hedge and deliver affordable power to customers. On the retail side, NRG uses FTRs to hedge against congestion charges on the transmission system, which allows us to sell power to end-use consumers at a predictable price. By allowing us to protect against unpredictable congestion costs on the transmission system, we are able to offer customers affordable, fixed-price, power offerings. Without these products, our company and others would have to charge higher prices to manage the increased risk. This "risk premium" cost would wind up being included in retail sales, which directly increases consumer costs.

On the wholesale side, NRG likewise utilizes financial products to ensure that our large central station generators receive a predictable price for the power they produce. This includes selling power on a forward basis, which allows NRG (and other generators) to avoid the potentially serious financial consequences of unexpected outages on the transmission system by

purchasing FTRs and utilizing virtual transactions to move power sales from the day-ahead market to the real-time market, or vice-versa. These tools are critical to the profitable operation of our power plants and to the overall stability of wholesale competitive markets for electricity.

Testimony

Good morning Chairman Upton, Ranking Member Rush, members of the Subcommittee and fellow panelists. My name is Chris Moser, and I am Senior Vice President for Operations at NRG Energy, Inc.

Background on NRG and My Role at the Company:

NRG is one of the largest owners and operators of power plants in the United States. Our portfolio includes conventional plants powered by coal, nuclear, natural gas, and oil, as well as a large fleet of wind and solar generators. NRG also operates a retail business that serves approximately 3 million retail customers, largely in Texas and in Eastern states that allow customers to choose their retail electricity provider. Thus, NRG comes at the issues before the Subcommittee this morning from both a competitive generating and load serving perspective. I am responsible for operations at NRG, which includes the physical operation of our power plants, as well as the purchase and sale of billions of dollars of coal, natural gas and power each year.

NRG's business is premised on one key concept: that fair and robust competition, and not monopoly, is the best tool for providing value to consumers. As a purely competitive company with no captive ratepayers, NRG and its shareholders bear the risks and the economic consequences – positive or negative – associated with its participation in the wholesale and retail electricity markets. As this Subcommittee has heard in previous hearings, some companies are seeking corporate bailouts to undo the results of competition in the electricity markets. NRG's

position is very different. We urge this Subcommittee to ensure that the organized markets utilize competition to drive investment in energy infrastructure, lower costs for consumers, and provide reliable electricity to power the economy.

One important contributor to such competition is ensuring that our markets have effective rules for price formation. Another is that policymakers say "no" to bailouts when competition produces a different result than some companies might want. Today's focus is on the third leg of the stool – ensuring that companies operating in competitive electricity markets can use financial trading and hedging tools to manage risk. This Subcommittee can help ensure that the Federal Energy Regulatory Commission focuses on all three of these important contributors to competition in our electricity markets.

Financial Products are a Critical Part to Delivering Low Cost Power to Consumers:

Financial transactions are an important tool we use every day at NRG. In organized markets, electricity prices should include: (i) the cost of the underlying commodity; (ii) a congestion component, which reflects the value of electricity in varying locations and takes into account physical constraints on the transmission system; and (iii) transmission line losses, which reflect the fact that some electricity is lost as it flows across a transmission line. As the Subcommittee's Hearing Memo noted, "[w]holesale electricity is a volatile commodity with prices that can change dramatically throughout a given day…" This volatility only increases as we deliver power into "load pockets," which are typically constrained areas of the transmission system where the transmission losses and congestion components of electricity pricing can be higher.

Proper pricing of electricity involves some degree of volatility as market participants respond to pricing and other dynamics. High prices signal to consumers that they may wish to

reduce their consumption of energy during a period of high prices, and low prices tell generators that they should decrease their output. Financial products allow us to manage this volatility and deliver reliable, low-cost power to end-use consumers.

NRG's Sales of Forward Power:

The organized markets and associated financial exchanges are critical to allowing NRG to "hedge" expected production of electricity from our power plants. Forward sales of power provide us a predictable stream of revenue from the expected generation capability of our power plants, while allowing consumers to lock-in their long-term power costs. For example, entering 2017, NRG had sold forward 30% of its expected generation capacity for 2017-2020 in the Eastern portion of the country. In Texas, the number was even higher, with 46% of our coal generating capacity being sold forward in 2017-2020.

Without access to forward financial markets, NRG would be entirely dependent on spot market pricing to determine whether the continued operation of any of its power plants will be profitable or not. Because forward sales of power are typically based on today's prices, issues like wholesale market price formation are a top priority for the company – price formation effects not only today's revenues, but also those we receive in the future. This is particularly true in markets without capacity markets (such as ERCOT) or markets where capacity revenues are not established on a competitive long-term forward basis (such as the California ISO, Mid-Continent ISO, and New York ISO). In such markets, forward sales of power are the best way to determine if a particular power plant will be profitable in the long run or if a particular capital investment is warranted.

NRG's Use of Financial Transmission Rights:

NRG utilizes Financial Transmission Rights, or FTRs, in three primary ways:[1]

Retail Power Sales:

NRG purchases FTRs to hedge its retail sales of power. In the organized RTO/ISO electricity markets, there can be significant differences in the price we: (i) receive for sales from our power plants and (ii) pay to purchase power needed to serve our retail load obligations. These price differentials result from the fact that NRG's generation resources or power purchases are not always co-located with the customers we serve, which exposes NRG to the risk of congestion on the transmission system. Electricity costs more to make and deliver in crowded (or "congested") areas of the grid, such as large cities or areas that are far from generation.

NRG utilizes FTRs to manage this risk and provide predictable and stable prices to its end-use customers. Specifically, NRG can purchase an FTR along the path between a generating facility (or, more likely, a liquid point on the system, usually known as a "hub") and its end-use customers. For example, New York City's electric grid is as congested as its roadways. So if NRG sells electricity to a customer in the middle of New York City from a power plant located in upstate New York, it is likely that the transaction will incur additional congestion charges. Without FTRs, it would be difficult to predict exactly how much we would pay in extra congestion charges and we would have to include a larger "risk premium" in our prices to account for that uncertainty. A higher risk premium directly increases the price paid by end-use consumers. Purchasing an appropriate FTR, however, allows the parties to "lock in" those congestion charges, eliminating much of the congestion risk in exchange for an upfront payment.

Of course, purchasing FTRs costs money, which may reduce the profits we would otherwise earn. But the tradeoff is that we will not lose large amounts of money if unexpected

[1] While not the focus of my testimony today, NRG also engages in limited speculative FTR trading.

congestion appears on the system. Overall, FTRs allow NRG to protect against unpredictable congestion on the transmission system, minimize the costs to retail customers, and increase our ability to offer customers long-term, fixed-price power deals.

Wholesale Power Sales:

FTRs are also critical to the process of selling our generation output to other retailers of electricity. For example, NRG often sells power from its power plants on a bilateral basis to other companies, who then re-sell the power to end-use consumers. The organized electricity markets facilitate these bilateral sales by providing both parties with open access to the transmission system and clear, transparent prices.

Whether the buyer or seller takes the risk of congestion is often a significant negotiating point. Sellers of power typically prefer that all risk of congestion (or even outright failure of the transmission system) transfer to the buyer at the point where the power plant injects the power into the grid. Buyers, on the other hand, typically prefer that the seller maintain the risk of successfully delivering the power. FTRs allow either party to manage the risk of transmission congestion by buying an FTR. If the sale of electricity is ultimately accompanied by any additional congestion costs, then the FTR makes the parties whole for those costs. Thus, FTRs provide an "insurance policy" against the risk that congestion will appear on the system and substantially alter the economics of the underlying transaction.

FTRs are particularly important when selling the output of large-scale renewable generators, which are often located far from load. In many cases, generators located far from load are subject to increased risk of congestion between the point of injection into the power grid and the point of delivery to an end-use customer. FTRs protect both sides of the transaction from congestion risk, which facilitates stable prices for both buyers and sellers of renewable power.

Transmission System Investments:

FTRs can be a powerful means of attracting additional at-risk capital into the transmission system, which is typically dominated by utility investment using captive ratepayer dollars. Most organized markets permit non-utilities to pay to upgrade an "element" of the transmission system that constricts the flow of power from Point A to Point B. In exchange for fronting the capital to make or advance the construction of the upgrade, the investor receives the value of any additional power flows across that element, usually in the form of FTRs or related products. Thus consumers receive new or accelerated improvements to the transmission system, while investors only make money to the extent the new/upgraded transmission improvement is actually used. This moves risk from captive customers to private investors, while increasing total infrastructure investment.

NRG's Use of Virtual Transactions:[2]

NRG likewise uses virtual transactions to manage sales from its power plants and to manage retail market positions. Virtual transactions are a powerful tool for managing the risk inherent in two-settlement electricity markets, where some power sales take place in the day-ahead market (the first settlement), and other sales take place in the real-time market (the second settlement). Prices can diverge between day-ahead and real-time markets as physical conditions on the grid evolve over time. These price differences are critical to the proper functioning of electricity markets, and are often caused by changing load forecasts (i.e., as we get closer to real-time, we better understand consumer demand, based on weather and other factors), changes in generator or transmission line outages, changing fuel costs, or other factors.

As a result, it is often more or less advantageous to sell (or purchase) power in either the day-ahead or real-time markets. Virtual transactions allow generators to pay a (usually small)

[2] As noted above with FTRs, NRG also engages in limited speculative trading of virtual power.

fee to “virtually” shift their sales of power from the day-ahead to the real-time market, if conditions warrant.

Conclusion:

Financial bilaterals, FTRs and virtual transactions all play a critical role in the production and delivery of affordable power to consumers. On the retail side, these products provide a “hedge” against unexpected congestion charges on the transmission system. On the wholesale side, these products ensure that generators receive a predictable price for the power they produce.

Thank you, again, for the opportunity to appear before the Subcommittee today on these important matters. I would be happy to answer any questions that Members of the Subcommittee might have.