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

November 27, 2017

TO: Members, Subcommittee on Energy

FROM: Committee Majority and Minority Staff

RE: Hearing entitled "Powering America: Examining the Role of Financial Trading in the Electricity Markets"

I. INTRODUCTION

The Subcommittee on Energy will hold a hearing on Wednesday, November 29, 2017, at 10:15 a.m. in 2322 Rayburn House Office Building. The hearing is entitled "Powering America: Examining the Role of Financial Trading in the Electricity Markets." The hearing will examine the role and effects of financial trading in the nation's wholesale electricity markets. It will also evaluate whether market design changes are necessary to ensure the efficiency of financial transactions and to protect against improper trading activity.

II. WITNESSES

- **Wesley Allen**, CEO, Red Wolf Energy Trading, *on behalf of* the Financial Marketers Coalition
- **Eric Hildebrandt**, Director of Market Monitoring, California ISO
- **Max Minzner**, Partner, Jenner & Block LLP
- **Noha Sidhom**, CEO, TPC Energy, *on behalf of* the Power Trading Institute
- **Vince Duane**, Sr. Vice President and General Counsel, PJM Interconnection
- **Chris Moser**, Sr. Vice President of Operations, NRG Energy

III. BACKGROUND

Financial market participants play an increasingly visible role in the organized wholesale electricity markets. The trading of financial products can improve the efficiency of the physical electricity market by providing increased liquidity, mitigating market power, and improving price formation, all of which can result in lower-cost electricity to end users. However, the complex nature of these financial transactions is not widely understood by the general public and their contributions to market efficiency are hard to measure with specificity. Additionally, the highly technical nature of these financial transactions and the use of complicated trading

strategies have allowed certain traders with ill-intent to engage in manipulation schemes that are often difficult to detect.

In addition to operating both real-time and day-ahead electricity markets, each of the nation's grid operators, also known as Regional Transmission Organizations (RTOs) and Independent System Operators (ISOs), allow financial participants to transact in their markets. Wholesale electricity is a volatile commodity with prices that can change dramatically throughout a given day; speculative trading allows market participants to assume and manage risk associated with this price uncertainty. Since these financial transactions are purely bids and offers unbacked by any intent to deliver or consume physical power in the real-time market, they are sometimes referred to in the industry as "virtual transactions."

Those who engage in virtual transactions have diverse interests and motivations. While some financial participants are large banks and financial institutions that trade purely to seek profits, other participants, such as traditional utilities, use financial products to hedge price volatility and manage risk exposure. Overall, these financial transactions are credited with being a valuable feature in the electricity markets due to the fact that such trading: (1) adds liquidity (allowing market participants to more easily assume or exit forward positions); (2) allows for price convergence between the day-ahead and real-time markets; and (3) serves to mitigate market power distortions.

Regulation of Financial Transactions in an RTO or ISO

As the regulator for the RTO/ISO markets, the Federal Energy Regulatory Commission (FERC) has primary responsibility for the oversight and regulation of the virtual transactions occurring within the wholesale electricity markets. However, the Commodity Futures Trading Commission (CFTC) has also maintained that it has overlapping, if not exclusive, jurisdiction over these financial transactions. Notwithstanding, in 2013, the CFTC conditionally exempted financial transactions in the RTO/ISO markets from most of its statutory requirements on the basis that such financial transactions are subject to extensive regulation by FERC.[1] Subsequently, in 2014, the two agencies signed a memorandum of understanding setting forth a process under which they will notify each other of activities that may involve overlapping jurisdiction and coordinate to address any regulatory concerns.

Along with the RTOs/ISOs and its respective market monitors, FERC continuously reviews financial transactions by participants in the electricity markets. A review of FERC's *Annual Report on Enforcement* reveals that many cases under active investigation or in litigation focus on alleged misconduct involving the trading of financial products.[2] Further, in 2016, FERC issued a white paper to provide guidance and examples of practices that are effective in detecting and deterring manipulation of financial products. The white paper provides specific guidance to financial institutions employing traders who engage in both virtual and other financial trading in the RTO/ISO markets.[3] While important, sound compliance practices will

[1] Final Order in Response to a Petition from Certain ISOs and RTOs, CFTC (April 2, 2013).
[2] 2017 Report on Enforcement, FERC, Office of Enforcement (Nov. 16, 2017).
[3] Staff White Paper on Effective Energy Trading Compliance Practices, at p. 15, FERC (Nov. 2016).

not prevent all manipulative conduct involving financial trading. As such, vigilant oversight and continued prosecution of those seeking to manipulate the market remains necessary.

Financial Transmission Rights in the RTO/ISO Markets

Various types of financial instruments are available to market participants seeking to engage in energy-related transactions, including financial derivatives and virtual products. However, one of the most common financial transactions that occur in the RTO/ISO markets involves a financial instrument known as a Financial Transmission Right (FTR).[4] In the most basic terms, FTRs entitle their holders to receive revenue (or require them to pay charges) based on price differences along a specific transmission line path. Price differences are often caused by congestion between two points (or "nodes") on the transmission system. Congestion typically occurs if there is not enough capacity on the transmission line, if the line is out of service for maintenance, or if an unplanned outage occurs. Congestion can also occur for other reasons including weather and modeling errors.

Load-serving utilities use FTRs to mitigate the risk of price increases for transmission services.[5] FTRs are available to the extent allowed by the physical limits of the grid, which means that only a certain number of these rights can exist. For example, if the transmission capacity flowing from Point A to Point B is 100 MW, but the RTO or ISO needs to flow 150 MW of power from Point A to Point B, the path will be congested and the price of service will increase because a more expensive generator at Point B will need to be dispatched to serve load. However, in this example, the holder of the FTR (the load-serving utility) will not be exposed to the increase in price due to congestion on the transmission line. In short, the FTR allows the holder to avoid congestion charges by being fully hedged against congestion risk.

Historically, FTRs have been allocated to load-serving entities (who funded the construction of the transmission facilities) and then any remaining FTRs (for otherwise uncommitted physical transmission capacity) are offered by the RTO or ISO in an annual or monthly auction. FTRs can also be sold in some markets by individual parties on a bilateral basis. FTR auctions typically attract speculators and other purely financial traders who place bids on these rights to unsold capacity and offer financial products to market participants seeking to hedge congestion price volatility.[6] Ultimately, the difference between the original cost of the FTR and the actual day-ahead congestion prices along a specific transmission path will determine whether the trader receives a payment or incurs a liability. However, when congestion revenues are insufficient to fully fund the FTR payouts, a revenue shortfall exists. In such cases, while the FTR holder is paid in full, the shortfall in collected congestion revenue is absorbed by load-serving entities. State utility regulators have called for market design changes to ensure that consumers are not ultimately harmed by underfunded FTRs.[7]

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[4] FTRs are similar to other instruments used to hedge congestion risk such as Congestion Revenue Rights (CRR), Transmission Congestion Contracts (TCC), and Up-To-Congestion offers (UTC).
[5] A load-serving entity secures energy and transmission services to serve the electrical demand and energy requirements of its end-use customers.
[6] Energy Primer: A Handbook of Energy Market Basics, at p. 114-115, FERC (Nov. 2015).
[7] Resolution Concerning Financial Transmission Rights, Organization of PJM States, Inc. (Aug. 18, 2016).

Measuring the Contributions of Virtual Transactions

Financial transactions in the electricity markets have the potential to increase the efficiency of the markets by a number of ways. By having many financial participants in the market, supporters contend that more competition results in more bidding, which in turn results in better prices. More competition also has the effect of increasing trading volume and market liquidity while reducing market volatility and diversifying risk. The Independent Market Monitor for the Midcontinent ISO recently stated that "[v]irtual transactions provided essential liquidity and improved the convergence of day-ahead and real-time energy prices" and that "virtual trading continues to be a vital component in the MISO's market."[8] Additionally, while measuring the precise costs of virtual bidding in electricity markets is difficult, advocates believe that the key measure of value should be whether the transactions increase the net benefits in the market, including the mitigation of market power and improvement of price formation.[9]

Other observers contend while virtual trading should produce market efficiencies in theory, the advertised benefits do not always occur in practice. Researchers have established that under certain situations, "the profits are a purely parasitic transfer from electricity producers and consumers" and that "[u]nderstanding when virtuals contribute to system performance and when they are parasitic and also hurt system performance is a difficult, empirical challenge."[10] The largest RTO in the country, PJM, also noted that while virtual transactions can and do provide efficiencies for its market, it has found examples where these transactions are not being used as intended, resulting in profits to traders without adding any commensurate benefit and a decline in the performance of its day-ahead market.[11] To this end, PJM recently filed proposals with FERC to implement market rule reforms that would address financial trading in certain circumstances and under certain conditions.

IV. ISSUES

The following issues may be examined at the hearing:

- Whether consumers realize benefits from the trading of financial products, including virtual transactions, in the RTO/ISO electricity markets.

- Whether financial trading increases the economic efficiency of the wholesale electricity markets and provides sufficient price signals to ensure investment in grid infrastructure.

- Whether RTO/ISO reforms are necessary to improve or correct for inefficiencies in the trading of financial products, including FTRs and virtual transactions.

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[8] 2016 State of the Market Report, at p. xii-xiii, Potomac Economics (June 30, 2017).
[9] Virtual Bidding and Electricity Market Design, at p. 27, William W. Hogan, PhD, Harvard University (May 25, 2016).
[10] Financial Arbitrage and Efficient Dispatch in Wholesale Electricity Markets, at p. 2, 51-52, John E. Parsons, PhD, Massachusetts Institute of Technology (February 2015).
[11] Virtual Transactions in the PJM Energy Markets, at p. 1-12 and 47-48, PJM Interconnection (Oct. 12, 2015).

- Whether financial market participants face unique challenges when trading in RTO/ISO markets.

- Whether efforts by FERC and the RTOs/ISOs to enforce market rules and prosecute improper trading conduct are sufficient to maintain confidence in market outcomes.

V. STAFF CONTACTS

If you have any questions regarding this hearing, please contact Jason Stanek, Wyatt Ellertson, or Annelise Rickert on the Majority Committee staff at (202) 225-2927, or Rick Kessler on the Minority Committee staff at (202) 225-3641.