

Electricity Market Design Flaws and Market Manipulation

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Powhatan Energy Fund LLC (Powhatan) did not commit market manipulation according to any reasonable definition. Its response to such accusations provides a rare public opportunity to discuss policy associated with electricity market design and market manipulation enforcement. The Federal Energy Regulatory Commission's (FERC, Commission) jurisdictional authority is not properly suited for electricity markets. A discussion of elements of market design, and the respective roles of market operators, regulators and market participants, suggests both changes in policy and in the scope of market manipulation enforcement. Electricity market design requires care in providing the necessary features and rules to support an efficient market. Ideally, behavior that violates these rules and exploits market flaws should be prohibited and subject to enforcement sanctions. However, the problem of designing these markets is complex enough that market manipulation policy must recognize that some apparent market defects are features and not flaws.

Introduction

Electricity market design and enforcement policy should be consistent and reinforcing. The challenges of crafting and implementing such policies are many. Market design features create incentives and market participants will respond to those incentives. Market manipulation policy should recognize and incorporate the implications of the market design. All market participants should support identifying and correcting flaws in the market design.

Recent market manipulation enforcement actions have both raised the profile and created a new urgency to address these challenges. The confidential process of enforcement settlements obscures the issues and complicates the public discussion. The Powhatan case provides an important opportunity to examine the public policy problems that arise both from the limits of FERC's authority and the growing disconnect between market design and enforcement actions. The purpose of the present comments is to describe some of the problems and propose possible reforms that improve both market design and enforcement policy.

The Powhatan Case

The Powhatan case presents an example of allegations of market manipulation in the presence of market design defects.¹ This case presents an opportunity for a public discussion of these issues outside the opaque walls of enforcement settlements.²

The central element of the Powhatan case involves the treatment of the Marginal Loss Surplus Allocation (MLSA, loss surplus) in the PJM electricity market. The MLSA arises because of a feature of electricity pricing that includes marginal losses. The Commission rightly has recognized the importance of using marginal cost information, including for losses, in determining efficient electricity market prices under bid-based, security-constrained, economic dispatch.

“That is, each spot market energy customer pays an energy price that reflects the full marginal cost—including the marginal cost of transmission losses—of delivering an increment of energy to the purchaser’s location. Since losses vary in delivering energy to different locations, marginal losses increase as the number of megawatts (MW) of power moved increases.”³

A feature of this pricing methodology includes total collection for losses that is definitionally greater than the total cost of the losses. Conceptually, the resulting surplus is intimately related to the surplus in congestion costs when the transmission system is constrained. For historical reasons, however, the treatment of losses is seen differently than congestion, and market operators seek an appropriate means for allocating the loss surplus.

Both PJM and the Commission have considered different means for the loss surplus allocation. A full discussion of alternative means of allocation would go beyond the scope of the present comments. Suffice it to say that the original method of allocation by actual load-ratio share for network customers was a better method than the one that was eventually applied by PJM and endorsed by the Commission in 2009. That rule followed after a lengthy discussion within the unhappy frame of esoteric distinctions about who was and who was not paying for the transmission grid.

¹ For details, see the Powhatan web page: www.FERCLitigation.com.

² The Deutsche Bank case involved a related but different set of issues of alleged market manipulation that was headed towards open public discussion. See (Hogan, 2012) for a further discussion of price manipulation, related transactions, and price degeneracy. In the event, the public discussion terminated when Deutsche Bank settled the dispute at about the same time as announcing its intention to leave the commodity trading business.

³ *Black Oak Energy, LLC v. PJM Interconnection, L.L.C.*, 128 FERC ¶ 61,042 at P 3 (2008).

In adopting the MLSA rule, which assigned some of the MLSA to market transactions, the Commission recognized that this would create incentives for transactions that went beyond arbitrage or promoting market efficiency.

“...payment of the surplus to arbitrageurs that is unrelated to the transmission costs could distort arbitrage decisions and reduce the value of arbitrage by creating an incentive for arbitrageurs to engage in purchase decisions, not because of price divergence, but simply to increase marginal line loss payments.”⁴

This is as clear a description of a market defect that one can find in regulatory proceedings. Nonetheless, the Commission and PJM made an affirmative decision to adopt just such a rule that included so-called “Up-To Congestion transactions.”

“Each user or customer would receive its proportionate share of the surplus based on the total MWhs of energy (a) delivered to load in PJM, (b) exported from PJM, or (c) related to cleared Up-To Congestion transactions (where the user or customer paid for transmission service). The Commission finds that PJM’s proposal is a just and reasonable method of allocating the surplus, subject to the condition that PJM clarify that its tariff complies with our finding that payments be made only to those who pay for the costs of the transmission grid.”⁵

The details of the Up-To Congestion transactions include the submission of a bid for transmission between two locations with a limit on the maximum day-ahead congestion that will be accepted. These bids appear in the day-ahead market and, depending on the congestion in the system, the bids may or may not clear.

In some instances, the cleared bids required payment for associated transmission service and these cleared bids would participate in the receipt of loss surplus payments. If the resulting loss surplus payments were large enough, the loss allocation alone could make the transaction profitable.

As the Commission had anticipated, this produced an incentive for “arbitrageurs to engage in purchase decisions, not because of price divergence, but simply to increase marginal line loss payments.” Powhatan and others, working with Dr. Houlian Chen who designed and implemented the trades, developed various market analyses and tools to estimate possible loss surplus payments and engaged in paired trades that could benefit from these payments. The trading strategy worked.

⁴ *Black Oak Energy, LLC v. PJM Interconnection, L.L.C.*, 128 FERC ¶ 61,042 at P 41 (2008).

⁵ *Black Oak Energy, LLC v. PJM Interconnection, L.L.C.*, 128 FERC ¶ 61,262 at P 23 (2009).

The use of paired transactions had the effect that when both transactions cleared in the market, these transactions would offset each other. However, eligibility for loss surplus allocation would remain for the cleared transactions that had also paid for transmission service. The details of all the payments and transactions costs, likely exposure to one but not both transactions clearing, and so on, do not affect the simple observation that the strategy was in part responsive to the incentives created by the loss surplus allocation rules.

Powhatan advises that the PJM Market Monitor contacted Dr. Chen and indicated that there would be a referral to FERC regarding the trading strategy, particularly in respect to paired trades, if Dr. Chen continued implementing the strategy. Upon this notification, Dr. Chen stopped using this strategy.

Should the mere fact that the trades were motivated in part by something other than “price divergence” lead to the conclusion that this was market manipulation? As discussed below, the answer should be that this is not market manipulation. However, Powhatan and others became the subject of just such a FERC enforcement action for market manipulation.

There was a market defect in the poorly crafted rules for loss surplus allocation. The rule was adopted in the full light of day, with explicit discussion of the incentive effects and the likely implications for trading strategies of market participants. This was not a hidden flaw. The market feature was already known and accepted by the Commission.

The loss surplus allocation rule was like other features of electricity markets such as the production tax credit for wind or the demand response double payment for behind the meter actions. Arguably, when both Up-To Congestion transactions cleared, the paired trading strategy had no market impact other than on the loss allocation. By contrast, the wind tax-credit-induced negative cost offers and inefficient demand response decisions impose real costs on the system in addition to transferring payments among market participants.

The loss surplus allocation rule illustrates a market defect. The basic principle that market participants can and should seek to profit from trading within the market rules should apply. The trading strategy was a response to flawed incentives. This was not fraud. This was a failure of the market designer and the Commission in its oversight role. It cannot be a principled way to define or enforce rules against market manipulation to sanction market participants for responding to the incentives created by the market rules.

Electricity Market Design

A purpose of good electricity market design is to support efficient operations and investment incentives. However, the development of efficient rules is neither easy nor guaranteed. Electricity market designs and the accompanying business protocols can create inefficient incentives and unintended opportunities for profit. In some cases, inefficient market elements

may be intentional. In other cases, the market design defects may be inadvertent. In either case, in hindsight, inefficient market design defects could be interpreted as features or flaws, with different implications for judging the behavior of market participants.

Policy questions arise as to how to treat defects in the market design, and how this policy should relate to enforcement of general rules against market manipulation. Flawed design elements could and should be changed and the unintended consequences eliminated or at least mitigated. However, until the flaws are corrected, should market participants pursue strategies influenced by otherwise imperfect market incentives? Or is such behavior to be treated as market manipulation? And how can market participants know the difference?

These circumstances of imperfect markets raise important issues about the respective roles and responsibilities of regulators, market operators, and market participants. What should be done in the face of market defects, and who should have a burden to act? This is a difficult topic to address in part because many of the details of market manipulation enforcement actions are not public. However, the general problem and the limited available public discussions illustrate gaps in the authority of the Commission and suggest prospective reforms in market rules. The purpose of the present comments is to help frame the problems of creating well-functioning electricity markets and address the general challenge of deterring market manipulation while simultaneously providing market participants clarity about the rules.

Market Manipulation Policy

A problem for dealing with real market manipulation is that current FERC jurisdictional authority follows from statutes that were designed for securities markets and not efficient electricity markets. Securities attorneys inform me that there must be “fraud” for FERC to have enforcement authority in dealing with market manipulation. But there are trading practices and other behaviors that would be inconsistent with efficient outcomes that do not involve fraud in the conventional definition of the word. The exercise of market power is a good example. There is nothing necessarily fraudulent about the exercise of market power and to say otherwise is Orwellian doublespeak.

The practice of forcing the round peg of undesirable behavior into the square hole of fraud produces a perverse result of constantly redefining or obfuscating the meaning of the words in order to expand the definition of fraud to include whatever “bad” acts that are the subject of immediate attention. There are high costs of continuing down this road. The practice makes it almost impossible to be clear about the underlying analysis to see if the actions deviated from what is allowed under the market design. It makes it difficult, if not impossible, to describe market participation standards in plain terms that connect to the market design. In the process, the confusion produces the *de facto* result that the prohibited behavior is either everything or nothing, depending on the preferences of the person who holds the pen that day. This cannot be good governance or good public policy.

Rather than redefining fraud beyond recognition, it would be better to expand and clarify the authority at FERC to allow it to better support well-functioning electricity markets and have better procedures for identifying and correcting market defects. In hindsight, some of the market flaws and the implied bidding practices are embarrassing for the FERC and for those like the author who work on issues of market design. But the market design flaws were not created by the market participants. The right policy response should be to focus on improving the regulatory and market framework, not imposing *ex-post* responsibilities on market participants to rise above the market design in ways that would be impossible to implement in practice.

Workable Electricity Market Design

Good electricity market design seeks to provide a platform to utilize the advantages of competitive markets to achieve a broad social benefit. (Joskow & Schmalensee, 1983) In particular, a core principle of organized market design is embodied in the basic ideas of an efficient market built around the model of bid-based, security-constrained, economic dispatch with locational prices and financial transmission rights. (Hogan, 1992) The use of economic dispatch, to maximize the difference between bid-in benefits and costs, explicitly embraces the social welfare objective and efficient markets. A central feature of the standard competitive market model is that the regulatory and market design policy objective of achieving economic efficiency need not be shared by the market participants. In particular, the assumption is that the market participants individually pursue the objective of maximizing their own profits or benefits. Under stylized assumptions about the nature of the underlying technology and the absence of market power, a fundamental result is that with fixed market clearing prices, market participants maximizing their own profits or benefits will produce a workably efficient outcome consistent with welfare maximization. Profit maximizing behavior by market participants is central to the theory. There is no requirement for market participants to do anything to forego profitable transactions in order to achieve better market outcomes. This market principle is often embodied in the shorthand description that prices will clear the market so that in equilibrium there will be no remaining unexploited profitable transactions—a no arbitrage condition.

In practice, no market is perfect and no market design is without its defects. The basic market design for the ideal case goes a long way, but there will always remain design elements that do not or cannot support a fully efficient outcome. In these circumstances, the best principled practice is to refine the market design as much as possible to support efficient outcomes, deal with any remaining problems through general behavioral rules or regulations to the extent possible, and then accept the small remaining imperfections under the rubric of workable competition.

A good example of a limit on fully efficient market design arises in the practices of the independent system operator in organizing and operating the market under the standards of security-constrained dispatch. The problem arises from the externality associated with reliability

and avoiding cascading blackouts. The individual profit maximizing transactions of decentralized market participants could threaten reliability for everyone, but there is no practical decentralized way to price or internalize the threat to reliability. Hence, good electricity market design follows the well-established engineering practice of imposing conservative “N-1” contingency limits to constrain the economic dispatch and protect against the worst case. It would be easy to make an argument that these constraints are too conservative and that a careful cost-benefit calculation would relax these constraints at some times or under some conditions. However, the regulators and system operators who oversee the system believe it is better to err on the side of caution and respect the security constraints at the cost of some loss in economic efficiency. Market participants are not expected to seek greater efficiency by deviating from the reliability rules as stated. Adherence to conservative security constraints, even at the cost of loss of some market efficiency, is a feature and not a flaw.

This distinction between features and flaws is important because the difference is not always obvious. For example, consider the effect of the production tax credit for electricity produced with wind generation. The production tax credit is a related payment for wind generation that creates an incentive to make negative cost supply offers. It is clear that a purpose of national policy is to support the development of wind generation and the production tax credit is one of the tools employed. However, the production tax credit creates now well-known unintended consequences when it produces negative prices that affect everyone in the electricity market. If the purpose of the tax credit is to provide an economic incentive to invest in wind generation, then it would be possible to apply the same incentive as an offer tax credit that would be paid when the wind generator was available for generation, but without incurring the unintended consequences of creating negative prices. If the purpose of the tax credit is to account for carbon free generation, then a more efficient approach would be to impose a carbon tax on actual emissions rather than create negative prices. It would be easy to argue that the production tax credit is inefficient, but is it a flaw or a feature? From the perspective of an electricity market designer, it would be fair to characterize the tax credit as a design flaw and to predict that it will not survive much longer. But from the perspective of a market participant, it would seem natural to describe the tax credit as a feature. And for such a feature, both FERC and any market designer should predict and expect market participants to follow the profit maximizing incentive to make negative supply offers that produce negative market clearing prices.

Wind generators submitting negative offers would be responding to the incentive of the tax code, but not the underlying economics of wind generation. The negative offers would be transparent, so there is no fraud in the ordinary dictionary sense of the word. The negative offers would alter market outcomes and affect everyone else, but there need be no manipulation to profit from related transactions other than the unavoidable related transaction effect on the tax liability. In the case of wind generators, there would be no need for an enforcement action based on an argument that the offers were inconsistent with economic efficiency and based solely on the

benefits of the tax credit. Negative offers from wind generators are not market manipulation, even if they do follow from a market design flaw. The proper attention of reform would be to improve the rules so that the flaw of the inefficient production tax credit would no longer be a feature for market participants.

Another example of a putative market design flaw seen as a feature from the perspective of market participants arises in the case of demand response and payments for demand reduction without charging for the demand baseline. Before FERC adopted this policy there was an extensive debate that laid out the perverse incentives of asymmetric treatment of demand response and generation behind the meter versus the treatment of generation that is not behind the customer's meter. (Federal Energy Regulatory Commission, 2011) For example, the demand response policy provides an incentive for customers to install and operate inefficient diesel generators that would never be economic in the ordinary wholesale market. The customer avoids paying the purchase price of the electricity it generates and is then paid again for having reduced its electricity purchases even though its total electricity consumption has not decreased. (Hogan, 2009) From this perspective the demand response policy is a flaw that will eventually be a subject of reform. But as long as this is the announced policy and embedded in an electricity tariff, the effective double payment for metered demand reduction is a feature from the perspective of the market participant. Profiting from the inefficient incentive would be neither fraud nor manipulation. The design is the policy problem. The resulting market participant behavior is expected, and expected to be economically inefficient.

The distinction between a feature and a flaw appears to depend on the perspective of the viewer. In the case of both the production tax credit example and the demand response payment policy, available alternative market designs could remove the flaw. But from the perspective of the market participants, they properly think of these design flaws as market features and assume that they should respond to economic incentives created by these features with the objective of maximizing profits.

By contrast, there are other problematic electricity market defects that are not design flaws in the same sense because there is no design alternative that would be sufficient to resolve the inefficient incentives. The treatment of start-up costs and minimum load levels for generation presents such a challenge. The simple competitive market model presumes the existence of market-clearing prices that support the solution. Given those prices, economic dispatch is consistent with profit maximization and market equilibrium. However, the assumptions that drive this conclusion include that the well-behaved underlying technology is completely flexible. In particular, there are no lumpy decisions such as start-up and minimum load. These so-called "non-convexities" do not foreclose economic dispatch and efficient solutions. But these non-convexities do create situations where there is no market-clearing price that supports the economic dispatch. (Gribik, Hogan, & Pope, 2007) If the dispatch considers the start-up and

minimum load requirement, the resulting market prices imply that dispatched generation may lose money. At these prices, the profit maximizing choice would be not to participate in the dispatch. Or some other generator that is not dispatched would find it profitable to enter the market even though it was not part of the efficient economic dispatch. There is no market price that would avoid this problem. This pricing deficiency is a characteristic of the technology and the market design. Faced with this fact, organized markets have created rules for various bid-cost recovery mechanisms to ensure that dispatched generators at least recover their offer or bid costs. These rules are intended to make possible an economic dispatch and an efficient market outcome. Generators that make cost-based bids and benefit from related payments under these bid-cost recovery rules are not manipulating the market.

Another prominent example confronting the limits of market design would be the textbook exercise of market power. A market participant with market power would not have to take the market prices as given. In particular, by withholding some real-time production from the market, a generator could influence prices that would apply to its other production. Depending on many factors including the portfolio of other generation and the response of the rest of the market, the loss on the generation withheld may be small compared to the increase in the profitability of the rest of the generation portfolio. The market participant with market power may find withholding production as a profit maximizing strategy across its entire portfolio.

This exercise of market power by a generator is a special case of the larger problem of engaging in transactions that affect market prices and alter the profitability of related transactions. To some degree, all transactions have some impact on market prices. If a market participant engages in more than one transaction, then the change in market prices could affect the profitability of the related transactions. Within the confines of the available efficient market design, electricity market designers know of no easy design rule that would eliminate this incentive. The vulnerability to market power and price manipulation is a flaw that is an inherent defect of any practical market design.

The policy response to such an inherent limitation of efficient market design has been and should be to adopt general rules that prohibit or mitigate the possible market manipulation. For example, generator offer caps and must offer requirements are ubiquitous constraints on behavior intended to mitigate generator market power in organized markets. Electricity market designers constrain otherwise profit maximizing behavior by limiting the offers. Similarly, as embodied in the HQ Energy principles, FERC has made a distinction between transactions that are profitable on a stand-alone basis, but which affect market prices and those transactions which are unprofitable alone but which produce profits on related transactions that make up for any direct

losses.⁶ By these principles, a transaction that is profitable on its own is not manipulation, whereas a transaction which is only profitable as part of portfolio benefits that depend on changing market prices is manipulation. Such a rule-based approach is necessary when simple changes in market design are not available.

The fact that there are design flaws that could be exploited is unfortunate and surely captures the attention of the FERC and the electricity market designer. But the policy response must recognize that perfection is not attainable and there always will be market defects. It is important to identify the serious flaws and fix them as quickly as possible, to the extent possible. And where market design cannot overcome the inherent limitations of markets, it is important to adopt reasonable rules and regulations to guide behavior. The same rule of reason implies that the goal is to achieve the efficiency gains of workable competition, not the mirage of perfect competition. Hence, some market limitations, such as ordinary human errors or cumbersome stakeholder processes, will be left alone as not worth fixing. The objective, although challenging, is to improve the process to address the defects that can be fixed.

Addressing Market Defects

What should be the responsibility of the market participant when confronted with a defect or limitation in the market design? Should the market participant interpret the anomaly as a feature and follow profit maximizing behavior to the limits of its capability? Or should the market participant take the anomaly as a design flaw and forego the profits? Or should there be some ground in between? What should be the boundary between acceptable behavior and proscribed market manipulation? The focus here is on what should be the policy given the practical requirements of good practice and good market design.

It is clear that it cannot be the responsibility of the market participant to correct a market design flaw. Nor can it be the responsibility of one market participant to enforce a rule on other market participants that precludes exploiting a flaw. The market participants do not and should not have this authority and hence should not have this responsibility. Changing the market design and supplementing it with behavioral rules is the responsibility of the FERC and market operator.

If electricity systems were simpler, without all the advantages and limitations of organized markets, it might be possible to make a case that market participants bear no responsibility and could simply treat everything as a design feature and use any market strategy that is not explicitly forbidden as being allowed and eligible for exploitation. But such an argument for no restraint ignores the reality of the many rules and regulations that are designed to help market

⁶ *DC Energy, LLC v. H.Q. Energy Servs. (U.S.), Inc.*, 124 FERC ¶ 61,295 at P 22 (2008). More generally, transactions which serve a legitimate business purpose such as hedging would not be manipulation.

participants, such as through the generator bid-cost recovery mechanisms. Surely in a complicated organized market design supported by regulation and intended to expand the size of the pie, all market participants should shoulder some responsibility other than simply to maximize their own profits. A standard that market participants bear no responsibility at all seems untenable.

On the other hand, as the discussion above illustrates, there is no easy way to distinguish market design flaws that should be corrected from market design features that are part of other policies to change incentives away from the idealized short-term efficient competitive market. If market participants were expected to refrain from profit maximizing behavior that would be inefficient in a perfect world, the wind generators would not make negative offers, demand response would not be paid twice for behind the meter generation, and so on. The confusion that such a requirement would create would be substantial and highly controversial. It cannot be good policy to impose on market participants a responsibility to rise above the actual market design. A standard of perfection in bidding practices also seems untenable.

An Expanded Notification Policy

A middle ground would be notification. Many market design flaws are inadvertent and unrecognized by the FERC or market operator. Market participants cannot be responsible for correcting market flaws. Nor should market participants be assigned responsibility to make the judgment call that distinguishes between features that are accepted deviations from efficient design and flaws that should be corrected. But market participants should know that some design elements may be such flaws and market participants should share a fiduciary responsibility to bring possible flaws to the attention of the FERC and the market operator. The basic idea would be to create a safe harbor for a bidding practice that might be suspect. Once the market participant notified the market operator, the market participant would have discharged its responsibility. The FERC or market operator should make the decision whether to change the market design, adopt a general behavioral rule, or leave the practice alone.

A responsibility to notify and a safe harbor for market participants who meet this responsibility, would go beyond the current practice in enforcement of actions against market manipulation. For example, in its Order 670 on prohibiting market manipulation, the Commission stated:

“As there is no new affirmative duty of disclosure under the Final Rule, commenters’ concern over the disclosure implications of the proposed regulations is misplaced. The Final Rule operates within the regulatory framework of the FPA and NGA; the Commission is not adopting the disclosure provisions of the securities laws or the purpose of the securities laws, which is ‘to protect investors by promoting full disclosure of information thought necessary to informed investment decisions.’ Rather, the Final Rule, like section 10(b) of the Exchange Act and SEC Rule 10b-5, is an antifraud provision, not a disclosure provision.

Nothing in the Final Rule requires disclosure of sensitive information that would only function to weaken an entity's bargaining position in arm's-length, bilateral negotiations. Absent a tariff requirement or Commission directive mandating disclosure, there is no violation of the Final Rule simply because an entity chooses not to disclose all non-public information in its possession."⁷

A fiduciary responsibility for market participants to identify possible market flaws would be more than the usual understanding of disclosure requirements. The details of this new policy would have to be worked out. Notification could be confidential and subject to a good faith requirement for clarity. To promote incentives for notification, the safe harbor for confidential notifications could apply only to the party making the notification. The policy could include a limited waiting period before trading on the market feature. In order to promote innovation and competition, after notification the default could be that the bidding practice is allowed unless prohibited by general rule or eliminated by a change in the market design. Employing the bidding practice should not require a formal "no action" decision authorizing the practice.⁸ And so on.

In the case of possible defects that are identified and discussed publicly, like the wind production tax credit, the demand response double incentive, and the MLSA for the Up-To Congestion transactions, the safe harbor provision would extend to all market participants. As noted earlier, in adopting the MLSA rule, the Commission stated that the rule would create incentives for transactions that went beyond the normal arbitrage that promotes market efficiency; neither Powhatan nor anybody else should be held liable for doing what the Commission expected. Almost by definition, if the bidding practice is known to everyone, including the market operator and the FERC, and no change is made in the design or the general rules, the design element and bidding practice must be treated as a feature and not a flaw.

Consistent Policy for Workable Electricity Markets

An essential characteristic of the principles of open access and non-discrimination for electricity markets is the requirement to use a market design built on the foundation of bid-based, security constrained, economic dispatch with locational prices and financial transmission rights. (IEA, 2007) This market design requires and utilizes price incentives interacting with financial contracts in ways that are essential for meeting the Commission's objectives. The companion policies to prevent market manipulation should be consistent with this necessary market design.

⁷ *Prohibition of Energy Market Manipulation*, 114 FERC ¶ 61,047, at P 35 (2006).

⁸ The current FERC practice for "no action" letters does not provide a safe harbor and does not presume the market activity is acceptable absent a change in market design or general rules. There is no obligation for market participants to identify possible market flaws. See www.ferc.gov/enforcement/staff-guid/no-action-letters.asp.

Market manipulation policy should not be defined independent of or in contradiction to the market design.

A good policy response that seeks to promote improvements in market design should respect the essential strengths and limitations of markets. It should be the responsibility of the Commission and the market operator to correct market defects once recognized and to adopt rules or regulations to deal with serious problems that go beyond the limits of good market design. Ideally, it should be the responsibility of market participants to identify possible market design flaws in need of correction. But it should not be the responsibility of the market participants to rise above the market design and depart from profit maximizing behavior.

It would be bad policy to attempt to meet these challenges by labeling transparent bids, schedules and other transactions as fraudulent. This would move the definition of fraud into the eye of the beholder rather than being part of the rule of law. It would be bad policy to describe profit maximizing behavior within the known rules as market manipulation. This would distort a basic principle of competitive market design and make virtually every transaction possibly manipulative. It would be bad policy to prohibit transactions based solely on a state of mind. The knowledge that a bidding practice might exploit a flaw rather than a feature should be relevant but not dispositive. A workable notification practice should be enough to deal with the duties created by a state of mind.

The accumulating experience with market performance and market manipulation have created a need and an opportunity to have a more open discussion of workable approaches for market design and market manipulation policy. The Powhatan case is illustrative, but the importance of the topic goes far deeper to the foundations of electricity markets. Although it is difficult to be certain, because the enforcement actions are so opaque, it is arguable that the legal foundations of FERC's authority are inadequate to the task, and the evolving enforcement policy is undermining the economic foundations of efficient electricity markets (Hogan, 2012).

Conclusion

Electricity market design requires care in providing the necessary features and rules to support an efficient market. Market manipulation that violates these rules should be prohibited and subject to enforcement sanctions. However, the problem of designing these markets is complex enough that market manipulation policy must recognize that some defects are features and not flaws. The current authority of the FERC is too restricted to the narrow case of fraud, and this leads to perversions of both policy and language. The current enforcement rules are not evolving in a way that is compatible with efficient electricity market operations. A change in policy to include notification requirements is recommended. Profit maximizing behavior that flows from the incentives of known market features should not be treated as market manipulation. Meeting a proposed fiduciary responsibility to notify market operators about possible market flaws should

provide a safe harbor for market participants and should alert market operators to requirements and opportunities to change the market rules. The Powhatan case illustrates these principles as a transparent response to known market incentives and should not be seen as market manipulation.

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