UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Offer Caps in Markets Operated by Regional Transmission Organizations and Independent System Operators	Docket No. RM16-5-000

COMMENTS OF THE TRANSMISSION ACCESS POLICY STUDY GROUP

Pursuant to the Commission's February 4, 2016 Notice of Proposed Rulemaking,[1] the Transmission Access Policy Study Group ("TAPS") comments on the Commission's proposal to revise its regulations to require that each regional transmission organization and independent system operator ("RTO") cap each resource's incremental energy offer to the higher of $1,000/MWh or that resource's verified cost-based incremental energy offer. As discussed below, TAPS opposes the NOPR's proposal to allow incremental energy offers above $1,000/MWh to set locational marginal prices ("LMPs") in RTO energy markets. Offer caps are a critical safety valve to protect consumers from excessive prices in anomalous conditions when markets are not operating normally. Moreover, the $1,000/MWh offer cap applicable in most markets today is reasonable; it is far above the short-run marginal operating cost of generators in all but the most extreme circumstances, providing ample room for LMPs that allow all generators to recover their full marginal costs.

---

[1] Offer Caps in Markets Operated by Regional Transmission Organizations and Independent System Operators, 81 Fed. Reg. 5951 (proposed Feb. 4, 2016), FERC Stats. & Regs. ¶ 32,714 (proposed 2016) ("NOPR").

Should the Commission nevertheless proceed with its proposal to allow cost-based offers above $1,000/MWh to set LMPs, TAPS urges it to modify or clarify the proposal to assure that the resulting rates are just and reasonable. In that circumstance, as discussed below, TAPS supports the NOPR's proposal to require cost-verification for any offer above $1,000/MWh, and to allow such an offer to set the LMP only if it is cost-verified *prior* to market clearance. TAPS also supports the NOPR's proposed treatment of imports from external resources and virtual transactions. The following changes to the NOPR proposal, however, are needed:

- A hard backstop price cap is still needed to protect consumers from astronomical prices that are not the outcome of fundamental supply and demand forces and robust competition, for example in the presence of market power abuse, gaming, or dysfunction in other markets that artificially drives up the costs of inputs to electric generation. Based on the range of likely generator heat rates and natural gas prices, the hard offer cap for cost-based bids should certainly be no higher than $1,500/MWh.

- Market monitors should not be allowed to include adders for either uncertain short-run marginal cost components or opportunity costs in the cost-verification methodology for energy offers above $1,000/MWh. The cost verification requirement is intended to assure that such offers reflect only the generator's actual costs; adders for uncertainty are not an actual cost paid by the generator. In addition, at the extreme price levels at issue, lost opportunity costs are irrelevant, as there can be no reasonable expectation that prices will be higher in later time periods. Elimination of such adders should also reduce seams issues and price variation between neighboring RTOs in extreme conditions.

I. TAPS'S INTEREST IN THE NOPR

TAPS is an association of transmission-dependent utilities ("TDUs") in more than 35 states, promoting open and non-discriminatory transmission access.[2] Because TAPS members rely on transmission facilities owned and controlled by others, TAPS supports open and non-discriminatory transmission access, and has supported the Commission's

[2] Duncan Kincheloe, Missouri Public Utility Alliance, chairs the TAPS Board. Jane Cirrincione, Northern

initiative to form independent RTOs fostering efficient transmission and generation investment and robust wholesale competition. TAPS views RTO energy markets as generally working well. However, the potential for market power abuse is significant when resources are tight and individual sellers may become pivotal suppliers; and experience has shown that extreme prices can be driven by conditions in which the underpinnings of a robustly competitive wholesale energy market—e.g., competitive markets for inputs and adequate transportation and transmission infrastructure—have been compromised.

TAPS therefore opposes allowing energy offers above $1,000/MWh to set the LMP. Permitting a tiny subset of unusually inefficient resources to set the LMP for an entire RTO footprint, at a time of when markets are experiencing both extraordinary fuel costs and extreme demand, would result in a massive wealth transfer from load to generators with no corresponding benefits. If the Commission decides to proceed with the NOPR's proposal to raise the existing offer price cap, however, TAPS also proposes modifications and clarifications to protect consumers and reduce the ability to exercise market power or manipulate wholesale energy markets.

California Power Agency, is the TAPS Vice Chair. John Twitty is the TAPS Executive Director.

II. COMMUNICATIONS

Communications regarding these proceedings should be directed to:

John Twitty
Executive Director
TRANSMISSION ACCESS POLICY STUDY GROUP
4203 E. Woodland St.
Springfield, MO 65809
Tel: (417) 838-8576
Email: 835consulting@gmail.com

Cynthia S. Bogorad
William S. Huang
Latif M. Nurani
SPIEGEL & MCDIARMID LLP
1875 Eye Street, NW, Suite 700
Washington, DC 20006
Tel: (202) 879-4000
Email: cynthia.bogorad@spiegelmcd.com
william.huang@spiegelmcd.com
latif.nurani@spiegelmcd.com

III. COMMENTS

TAPS has structured its comments based on the NOPR's list of questions on which the Commission seeks comment. NOPR, P 73.

1. *Whether a hard cap on cost-based incremental energy offers used for purposes of calculating LMPs should be included in any final rule in this proceeding and, if so, whether the hard cap should equal $2,000/MWh or another value?*

TAPS Response:

A. The Commission should retain the existing $1,000/MWh offer cap.

TAPS believes that offer caps continue to play an important role in preventing market power abuse, and that permanently increasing the offer cap above $1,000/MWh is unwarranted and unjust and unreasonable.

Offer caps are critical safety valves to protect consumers from excessive prices when other market power mitigation measures prove inadequate. As the NOPR recognizes (P 23), several market monitors believe that offer caps have an important backstop role in market power mitigation. TAPS agrees. Mr. Patrick Connors,

representing WPPI and TAPS at the October 2014 Price Formation Workshop, explained in more detail:[3]

> In the absence of large quantities of price-responsive demand, there is a significant potential for market power abuse when resources are tight and individual sellers may become pivotal suppliers. This problem can occur market-wide; or it may exist only in locally constrained areas, while the remainder of the market is competitive. Price caps provide a crucial circuit-breaker for such situations, and may play an increasingly important role in market power mitigation as the national economy recovers and the capacity surpluses of the past several years become smaller in the face of generation retirements due to environmental compliance efforts.

The current value of $1,000/MWh continues to be an effective level at which to set offer caps. Under normal circumstances, there are no generators with a short-run marginal operating cost anywhere close to $1,000/MWh.[4] In fact, California Independent System Operator's ("CAISO's") market monitor has stated that "99.99 percent" of the time, the $1,000/MWh price cap is only reached when the RTO's software causes a constraint to bind "within the computer and not physically."[5] In other words, software bugs or modeling flaws—not fundamental forces of supply and demand—have been the most likely cause of prices clearing at the offer cap in that RTO.

---

[3] Written Statement of Patrick T. Connors on Behalf of WPPI Energy and the Transmission Access Policy Study Group Regarding Impacts of Offer Caps and Market Power Mitigation at 4, Dec. 3, 2014, *Price Formation in Ancillary Servs. Mkts. Operated by Reg'l Transmission Orgs. & Indep. Sys. Operators*, Docket No. AD14-14-000, eLibrary No. 20141203-4014 ("Statement of Patrick Connors").

[4] Statement of Patrick Connors at 6. *See also* Transcript of Technical Conference at 215:1-25, Oct. 28, 2014, *Price Formation in Energy & Ancillary Servs. Mkts. Operated by Reg'l Transmission Orgs. & Indep. Sys. Operators: Scarcity & Shortage Pricing, Offer Mitigation, & Other Price Caps Workshop*, Docket No. AD14-14-000, eLibrary No. 20141028-4008 ("October Workshop Tr.") (Joseph Bowring, stating that cost-based bids of $1,000/MWh or higher only occur under extreme circumstances).

[5] *See, e.g.*, October Workshop Tr. at 210:14-211:8 (Eric Hildebrandt, CAISO).

In the extreme circumstances when a few resources do have a short-run marginal operating cost above $1,000/MWh, those resources—if needed—should recover their extraordinary costs through uplift. Prior to bidding, a resource could inform the RTO that its short-run marginal cost is greater than $1,000/MWh, and the RTO could dispatch it (and any other resources that also have claimed costs above $1,000/MWh) in merit order based on that information. Costs above the cap would not, however, set the LMP. Instead, the RTO would verify them after the fact, and compensate the resource through uplift for any actual costs above the LMP.

Allowing those resources to set the LMP would result in an enormous wealth transfer from load to generators. Even during extreme price events, the vast majority of generation will have costs far below $1,000/MWh. It is those infra-marginal resources—not the unusual units with costs above the cap—that will reap a massive windfall at the expense of ratepayers. For example, if a single 100 MW resource on a very unusual day in the Midcontinent Independent System Operator ("MISO") happened to have a marginal cost of $1,100/MWh, that single resource— if it were allowed to set the LMP throughout the MISO footprint—could increase the price of electricity for load by more than $240 million a day. If this unusual unit, which was called on during abnormal market conditions, were instead compensated through uplift, load would only pay an additional $240,000 a day.

The rare but massive wealth transfer that would occur if the Commission allows offers above $1,000/MWh to set the LMP would also have no practical impact on resource investment decisions. A higher offer cap will not directly raise LMPs—in the vast majority of hours, the marginal resource is not bidding anywhere near the price cap.

Indeed, until Winter 2013-2014 and the extreme conditions of the Polar Vortex, many people believed that cost-based offers would never reach $1,000/MWh.[6] No one will make significant capital investments—whether in building new resources or maintaining or improving existing ones—in hopes that energy prices will be extremely high for just a few hours in some years, or even every year.[7]

B. Alternatively, the Commission should adopt a $1,500/MWh hard offer cap on cost-based offers.

If the Commission nevertheless proceeds with its proposal to allow pre-verified, cost-based offers above $1,000/MWh to set the LMP, a hard offer cap is still a necessary safety valve to protect against extreme prices in anomalous conditions when markets are not operating normally—for example as a result of market manipulation or market power abuse, extraordinary circumstances or catastrophes, or dysfunction in markets for fuel or other inputs to electric generation.

Other well-established markets also have "circuit breakers" to address anomalous conditions. Stock markets, for example, have a variety of mechanisms to halt trading of individual securities or even entire markets under specified circumstances.[8] The SEC has

---

[6] October Workshop Tr. at 209:18-22 (Joseph Bowring).

[7] *See* The Brattle Group, *The Importance of Long-Term Contracting for Facilitating Renewable Energy Project Development* at 10 & n.21 (May 7, 2013) (citing Elise Caplan, *What Drives New Generation Construction? An Analysis of the Financial Arrangements Behind New Electric Generation Projects in 2011*, Elec. J., July 2012, at 48-61), http://www.brattle.com/system/publications/pdfs/000/004/927/original/The_Importance_of_Long-Term_Contracting_for_Facilitating_Renewable_Energy_Project_Development_Weiss_Sarro_May_7_2013.pdf?1380317003 (estimating that just two percent of all new generation in 2011 was built by an independent power producer based solely on wholesale market revenues); American Public Power Association, *Power Plants Are Not Built on Spec: 2014 Update* at 1 (2014), http://appanet.files.cms-plus.com/PDFs/94_2014_Power_Plant_Study.pdf (estimating that just 2.4 percent of new capacity built in 2013 was based solely on organized market revenues).

[8] *See* U.S. Securities and Exchange Commission, Order Granting Accelerated Approval of Proposed Rule Changes as Modified by Amendment No. 1, Relating to Trading Halts Due to Extraordinary Market Volatility (May 31, 2012) ("SEC Order"), https://www.sec.gov/rules/sro/bats/2012/34-67090.pdf; *see also*

approved such circuit-breaker rules because they are "designed to promote just and equitable principles of trade, to remove impediments to and perfect the mechanism of a free and open market … and to protect investors and the public interest."[9]

The Commission's existing approach—establishing and maintaining a hard offer price cap as a backstop, before specific market power problems emerge—should be maintained. As in the stock markets, anomalous conditions can and have occurred in electricity markets. But a trading halt is no solution for electricity markets, where instantaneous demand must be matched by instantaneous production of energy. To maintain reliability and avoid blackouts, trades must continue. Thus, an alternative form of circuit breaker—a hard offer cap—is required.

Comments from RTO market monitors during the Price Formation technical workshops support maintaining a hard offer cap. One market monitor candidly admitted that computer-generated—rather than actual physical—congestion is the most likely reason that LMPs would reach the offer cap.[10] And several market monitors stated that offer caps are an important backstop when existing market power mitigation mechanisms are not fully effective.[11] Other factors may also contribute to extremely high, non-competitive electricity prices. Disasters—natural or otherwise—could damage the infrastructure necessary to support the robust competition needed to discipline prices.

U.S. Securities Exchange Commission, *Investor Bulletin: Measures to Address Market Volatility*, https://www.sec.gov/investor/alerts/circuitbreakersbulletin.htm (Jan. 4, 2016); Financial Industry Regulatory Authority, *Rule 6440 Trading and Quotation Halt in OTC Equity Securities*, http://finra.complinet.com/en/display/display_main.html?rbid=2403&element_id=4414.

[9] SEC Order at 11 (citation omitted).

[10] *See* October Workshop Tr. at 210:14-211:8 (Eric Hildebrandt, CAISO).

[11] NOPR, P 23.

And dysfunction in markets for fuel and other inputs to electric generation could cause artificially high prices in electricity markets.

These are not just hypothetical problems. In the aftermath of the 2000-2001 California Market Meltdown, for example, the Commission found that manipulation of natural gas markets had driven electricity prices in CAISO's single-price market above just and reasonable levels.[12] Lacking authority to retroactively unwind gas transactions during the period to remove the effects of that manipulation, the Commission instead required recalculation of CAISO electricity market prices based on an alternative natural gas price index recommended by Commission Staff, and it allowed individual generators to seek out-of-market compensation to the extent their actual fuel costs exceeded the market-clearing price resulting from that alternative index.[13] Fifteen years later, litigation related to these measures is still underway.

A hard offer cap—particularly one set higher than $1,000/MWh—will not prevent all such problems. But it can provide crucial damage control protection that partially shields electricity consumers from the devastating economic impact of similar situations and other distortions of the natural gas market, such as the irrational exuberance of gas marketer pricing during extended periods of constrained pipeline operations.

Nor should the Commission's price formation rules enable and endorse limitless profiteering from natural disasters like earthquakes and hurricanes, or other events that fundamentally disrupt the normal functioning of electricity markets by damaging or destroying the basic infrastructure that is used to produce and deliver electricity—

---

[12] *San Diego Gas & Elec. Co.*, 102 FERC ¶ 61,317, PP 56-61 (2003).

[13] *Id.*

infrastructure that is essential to supporting a robust competitive market capable of disciplining prices to just and reasonable levels in a single-price market. While individual generators that incur costs in excess of the hard cap could be made whole through out-of-market payments, imposing a hard offer cap on cost-based offers is an essential backstop mechanism to prevent sky-high LMPs from imposing extraordinary burdens on consumers in the rare situations when normal markets have broken down.[14]

As the Supreme Court recently ruled, the Commission has a statutory duty to protect against excessive prices.[15] Allowing energy prices to rise without limit fails to meet that obligation. TAPS believes that the existing hard cap of $1,000/MWh already provides plenty of room for legitimate cost-based offers to set LMPs; but if the Commission ultimately decides to allow pre-verified, cost-based bids to set LMPs above $1,000/MWh, the hard offer cap for cost-based bids certainly should be no higher than $1,500/MWh. In its Energy Offer Cap Evaluation, MISO's Market Subcommittee proposed an approach for setting an offer cap using known heat rates and extreme natural gas prices.[16] Their analysis showed that virtually all of the natural gas capacity in MISO

---

[14] Although it pre-dates the formation of a single-price RTO energy market in the Midwest, the June 1998 Midwest Price Spike also illustrates the potentially devastating impacts of unlimited prices. *See* Comments of TAPS, Sept. 14, 1998, *Cincinnati Gas & Elec. Co.*, Docket No. EL98-53-000, eLibrary No. 19980915-0014. Electricity prices rose to $3,000-7,000/MWh (as compared with maximum production costs for even the most inefficient generator in the $100/MWh ballpark), with price jumps of thousands of dollars per MWh in a matter of minutes. Those were obviously not prices being set by a well-functioning, robustly competitive market. If all wholesale transactions during that period had been settled at those levels in a single-price market, a good part of the economy in the Midwest would have been destroyed. As it was, those prices forced a number of participants out of the market or into bankruptcy, spawned a series of lawsuits, and compelled several utilities and marketers to disclose quarterly losses pending resolution of these lawsuits. A hard offer cap in today's RTO markets would mitigate such a devastating impact if the markets were to fail like that again.

[15] *FERC v. Elec. Power Supply Ass'n*, 136 S. Ct. 760, 764 (2016). *See also id.* at 773 (core FPA purposes are to "curb prices and enhance reliability in the wholesale electricity market"); *id.* at 781 ("The statute aims to protect 'against excessive prices' and ensure effective transmission of electric power.").

[16] MISO Market Subcommittee, *Energy Offer Cap Evaluation*, Sept. 29, 2015,

would have a marginal cost below $1,138/MWh if gas prices were to spike to $65/MMBtu and that more than 98 percent of the capacity would have a marginal cost below $1,500 if gas prices were to ever reach $100/MMBtu.[17] This suggests that $1,500/MWh is a more than ample level to serve as a safety valve.

In contrast, the $2,000/MWh hard offer cap the Commission recently approved for PJM[18] is too high. PJM provided no basis for selecting $2,000/MWh, other than that it reflected a compromise amongst stakeholders in that region.[19] In contrast, the type of analysis reflected in the MISO evaluation—which indicates that a $1,500/MWh cap would accommodate cost-based bids from virtually every generator in the footprint when natural gas prices are 20 to 30 times higher than current average natural gas prices[20]—is a more appropriate basis for setting a national hard offer cap.

In short, the Commission should include a hard offer cap in any final rule issued in this proceeding to protect consumers from excessive prices. The current offer cap level of $1,000/MWh has proven to be an effective and appropriate level in the vast majority of situations, and it should be retained. Alternatively, if the Commission determines that the level should be raised, the hard offer cap should not arbitrarily be increased to $2,000/MWh, but instead should be set no higher than $1,500/MWh.

---

https://www.misoenergy.org/Library/Repository/Meeting%20Material/Stakeholder/MSC/2015/20150929/20150929%20MSC%20Item%2005c%20Energy%20Offer%20Cap.pdf.

[17] *Id.* at 6.

[18] *PJM Interconnection, L.L.C.*, 153 FERC ¶ 61,289, P 25 (2015).

[19] *Id.* P 11 & n.9.

[20] *See* FERC, *State of the Markets Report 2015* at 4 (Mar. 17, 2016), http://www.ferc.gov/CalendarFiles/20160317120158-A-3-staff-presentation.pdf.

2. *The ability to timely verify the costs within incremental energy offers above $1,000/MWh prior to the day-ahead or real-time market clearing process, including whether the verification of physical offer components is also necessary?*

TAPS Response:

As discussed above, TAPS opposes changing the existing $1,000/MWh Offer Price Cap to allow energy offers above that level to set the market-clearing price. Should the Commission nevertheless direct such a change, TAPS agrees with the NOPR's proposal to require cost-verification for all energy offers above $1,000/MWh (NOPR, PP 57-58), and to allow only such energy offers cost-verified *prior* to clearing the market to set the LMP (*id.* P 59). Allowing extraordinarily high offers, above $1,000/MWh, invites market power abuse. As explained by Mr. Connors,[21]

> there is a significant potential for market power abuse when resources are tight and individual sellers may become pivotal suppliers. This problem can occur market-wide; or it may exist only in locally constrained areas, while the remainder of the market is competitive.

The Commission has recognized that "[e]lectricity markets possess unique characteristics including, but not limited to, inelastic demand and the need to balance the entire transmission grid in real-time."[22] According to the Commission, "[e]conomic theory and empirical estimates of the short-run elasticities of electricity demand suggest that these unique conditions allow sellers in wholesale electricity markets to exercise market power using a much more limited withholding of supply than [other] industries."[23]

---

[21] Statement of Patrick Connors at 4.

[22] Market-Based Rates for Wholesale Sales of Electric Energy, Capacity and Ancillary Services by Public Utilities, Order 697-A, 73 Fed. Reg. 25,832, 25,838 (May 7, 2008), FERC Stats. & Regs. ¶ 31,268, P 37 (2008), *clarified*, 124 FERC ¶ 61,055 (2008) (remaining subsequent history omitted).

[23] *Id.*

The NOPR's proposal to allow energy offers above $1,000/MWh to set the LMP only if they are cost-verified *before* the market clears is needed to protect the integrity of RTO energy markets and avoid setting LMPs based on individual generator bids that may reflect the exercise of market power. As illustrated by the Informational Report submitted by the PJM market monitor on energy offers during the January 28, 2014 Polar Vortex event, relying on generator estimates of their own costs above $1,000/MWh to set LMPs would be unjust and unreasonable.[24] For that day, generators in PJM sought additional out-of-market compensation of over $583,774 for claimed costs in excess of $1,000/MWh; the market monitor concluded that only $9,118 of additional costs were actually incurred.[25] Requiring pre-verification will also enable market participants to make production and consumption decisions based on real-time market prices; and it should help avoid the massive costs and resources—perhaps including through litigation and complicated RTO re-settlement procedures—of re-running markets after-the-fact to unwind the effects of energy offers later determined not to be cost-justified.

The NOPR's proposed pre-verification requirement for offers above $1,000/MWh is workable. Only a small percentage of generators would need to have their costs verified for this purpose. The incremental cost of the vast majority of generators, including baseload units and renewable generation, will never reach levels close to $1,000/MWh; cost verification would therefore be needed only for the most expensive units in each RTO—primarily older, inefficient oil- and gas-fired generators. As TAPS

---

[24] Monitoring Analytics, LLC, Informational Filing re Waiver to Permit Make-Whole Payments, Mar. 26, 2014 ("Monitoring Analytics Informational Filing"), *PJM Interconnection, LLC*, Docket No. ER14-1144-000, eLibrary No. 20140326-5181.

[25] *Id.* at 2-3.

explained in its post-technical workshop comments (at 14-15),[26] advance review and verification of energy offers above $1,000/MWh should be straightforward for most of these units.[27] So long as a generator has provided the market monitor with up-to-date information on its heat rates, it should be possible to calculate a cost-based energy offer reference level quickly from data on the generator's fuel costs and other documented incremental costs.[28]

While RTOs may differ,[29] the offer price mitigation approach currently used in MISO for Narrow Constrained Areas is an example of the feasibility of a pre-market-clearance cost verification system for energy offers above $1,000/MWh.[30] The MISO market monitor develops a reference level price for each unit located within a Narrow Constrained Area, based on information submitted by the unit's owner on the unit's characteristics and fuel costs. If a generator experiences substantial cost increases—e.g., a large increase in its fuel cost, or penalties for operating in excess of emissions-permitted

---

[26] Responses of TAPS to Staff Questions at 14-15, Mar. 6, 2015, *Price Formation in Energy and Ancillary Services Markets Operated by Regional Transmission Organizations and Independent System Operators*, Docket No. AD14-14-000, eLibrary No. 2015036-5257.

[27] Limiting the cost verification methodology to actual, documented costs—including elimination of opportunity cost and other adders that lack a documented and verifiable cost basis, as discussed in response to NOPR Question No. 3, below—will also facilitate timely review by market monitors of costs in advance of market clearing.

[28] Recognizing that a generator's actual fuel costs may be different from the spot price because of the generator's specific purchase arrangements, generators could be given the option of working with the market monitor in advance to come up with a method to review and verify its cost-based offers, to the extent that an RTO's tariff and business practices do not already provide an adequate mechanism.

[29] We note that PJM has raised questions about its ability to verify prices before market clearance. Comments of PJM at 4, Mar. 6, 2015, *Price Formation in Energy and Ancillary Services Markets Operated by Regional Transmission Organizations and Independent System Operators*, Docket No. AD14-14-000, eLibrary No. 20150306-5315. While an *ex ante* verification process that includes consumer protections should be further developed in those RTOs where it may be deficient, unless and until such processes exists, TAPS recognizes that the practical effect of this recommendation is that no offers above $1,000/MWh could set LMP in those RTOs.

[30] *See* FERC, *Staff Analysis of Energy Offer Mitigation in RTO and ISO Markets*, Appendix at A-8, A-9, Oct. 2014 ("Energy Offer Mitigation Staff Analysis"), *Price Formation in Organized Wholesale Electricity*

levels—it can contact the market monitor in advance of market clearing, explain the change, and submit backup documentation. If adequate cost support is provided, the reference level will be changed before the market clears.

Some changes to MISO's existing cost verification methodology for Narrow Constrained Areas would of course be necessary to adapt that system to this new context. However, it demonstrates the feasibility of a cost verification methodology that—by collecting baseline information and establishing reference level formulae tailored to individual units in advance—should be able to timely verify the cost basis of energy offers in excess of $1,000/MWh from individual generators before market clearance. The number of units with actual costs above $1,000/MWh should be extremely small. Even on January 28, 2014, during the height of the 2014 Polar Vortex, only seven units that had submitted offers at the then-applicable $1,000/MWh cap requested payment from PJM (through out-of-market compensation) for costs in excess of that cap.[31] And to the extent that some offers cannot be verified before market clearance (e.g., because generators do not know or cannot document their actual costs in time, or because too many offers have been submitted for pre-verification), out-of-market compensation would always be available to all accepted offers that can be verified after-the-fact to ensure that such generation owners fully recover their actual costs[32]—just as they would if their offers had been pre-verified. Those offers just could not set the LMP. The compliance filing

---

Markets, Docket No. AD14-14-000, eLibrary No. 20141021-4012.

[31] Monitoring Analytics Informational Filing at 2-3.

[32] Generators should be entitled to full recovery of actual costs, provided those resources are acting in accordance with prudent utility practice and all applicable market rules. The verification process should be robust enough to also protect consumers from excessive prices and manipulation of any markets.

process would provide a vehicle for assessment, and if necessary revision, of the RTO verification processes to ensure that they are up to the tasks envisioned by the NOPR.

3. *Whether the Market Monitoring Unit or RTO/ISO may need additional information to ensure that all short-run marginal cost components that are difficult to quantify, such as certain opportunity costs, are accurately reflected in a resource's cost-based incremental energy offer and to the extent that RTOs/ISOs currently include an adder above cost in cost-based incremental energy offers, whether such an adder is appropriate for incremental energy offers above $1,000/MWh?*

TAPS Response:

TAPS opposes allowing market monitors to include adders for either uncertain short-run marginal cost components or opportunity costs in the verification methodology for cost-based incremental energy offers above $1,000/MWh. The purpose of a cost verification requirement is to assure that energy offers in excess of $1,000/MWh reflect only the generator's actual costs. Adders for cost uncertainty are not an actual cost paid by the generator for fuel, service, or material used to generate incremental energy; they should be disallowed in this context.

At the extreme price levels at issue in this NOPR, such adders could dramatically increase offer prices. For example, at prices above $1,000/MWh, PJM's 10 percent adder would increase the allowed offer price for the incremental generator by $100/MWh or more. That adder, by itself, is almost twice the total PJM real-time, load-weighted average LMP for 2014, the last full year for which such data are available.[33] Even assuming for the sake of argument that a 10 percent adder for uncertain or difficult-to-

[33] Monitoring Analytics, LLC, *PJM State of the Market Report*, Vol. 2 at 247, http://www.monitoringanalytics.com/reports/PJM_State_of_the_Market/2014.shtml ("[t]he real-time load-weighted average LMP was 37.4 percent higher in 2014 than in 2013, $53.14 per MWh").

quantify costs might be justifiable at lower price levels, there is no basis for assuming the percentage is valid when energy prices are orders of magnitude higher.[34]

When energy markets are clearing at extremely high price levels, supplies are tight, and the potential for market abuse is high, it is crucial that market participants have confidence that the energy offers setting the LMP accurately reflect the actual marginal cost of the last unit dispatched. This requires a consistent methodology for verifying cost that excludes adjustments lacking a documented cost basis. To the extent a market monitor believes that the documented costs included in its existing verification methodology do not already adequately capture the actual short-run incremental costs of generators, it should develop an accurate, verifiable metric for those specific costs, rather than rely on percentage adders or allowances. Absent rigorous metrics and documentation, claimed costs should be excluded.

In addition, at the extreme price levels at issue in the NOPR, opportunity cost adders do not make sense and should be eliminated for all RTOs. The Commission has previously explained that:

> An opportunity cost exists if a unit must be run … for a transmission constraint and if that unit has only a significantly limited number of available annual run hours (a hydro unit or a unit with environmental run-time limits). The opportunity cost associated with providing 'must run' output is the value associated with the lost opportunity to produce energy during a higher valued time period within the year.

PJM Interconnection, L.L.C., 126 FERC ¶ 61,145, P 28 n.34 (2009). When prices are above $1,000/MWh, however, there can be no reasonable expectation that prices will go

---

[34] For offers below $1,000/MWh, TAPS is not here requesting any change to the application of adders where RTOs already allow them.

even higher during later time periods. While opportunity cost adders may be appropriate when prices are low to allow generators and the market to make the best use of a limited resource by preventing its premature depletion, that is no longer a concern when prices are already above $1,000/MWh. During such conditions, it makes no sense to save such resources for a "rainy day"; it is already pouring, and the RTO should be directing all available units to run.

Eliminating adders for uncertainty and opportunity cost from the cost verification methodology applicable to offer prices above $1,000/MWh will also reduce regional variation in offer price caps and LMPs in extreme conditions. By directing a generic change to the offer cap applicable to all RTOs, the NOPR (P 70) seeks to avoid exacerbating seams issues. However, the NOPR's proposal to allow RTOs to use different processes and criteria to verify energy offers (NOPR, PP 61-62) introduces a new source of variation in energy prices among RTOs. Opportunity cost adders are a potentially significant contributor to such variation—as Staff noted in its October 2014 report on Energy Offer Mitigation, all RTOs include provisions to account for opportunity costs in reference prices,[35] but there appears to be substantial regional variation in how opportunity cost is handled.

While TAPS recognizes the benefit of using existing RTO mitigation processes to perform the cost verification needed for energy offers in excess of $1,000/MWh, regional variation in the formulae and methodologies used for cost verification may well result in substantial differences in the valuation of virtually identical resources. In contrast to interregional differences in LMP due to resources with different short-run marginal costs

[35] Energy Offer Mitigation Staff Analysis at 7.

being on the margin—which the Commission believes will not adversely affect seams because the discrepancies are driven by actual costs (NOPR, P 71)—this type of price variation is an artifact of individual RTO market rules and procedures, not economics.

Reducing those differences by removing adders above documented cost for uncertainty and opportunity cost—which are, in any event, inappropriate for offers at extreme price levels—should mitigate the seams problems created by the NOPR's proposal to allow LMPs to rise above $1,000/MWh.

5. *Whether the proposal should apply to imports and whether a cost verification process for import transactions is feasible?*

TAPS Response:

Because the verification process for cost-based incremental energy offers is intended to build on existing RTO mitigation processes, the NOPR proposes that external resources would *not* be eligible to submit offers above $1,000/MWh. NOPR, P 63. The Commission states, however, that it would consider RTO proposals to develop verification methodologies for external resources in their compliance filings. *Id.*

TAPS supports the NOPR's proposed restriction on offer prices submitted by external resources. As a practical matter, an RTO cannot reasonably be expected to be able to verify the costs of all potential imports. Individual RTOs, however, should be allowed to propose cost verification methodologies for external resources if they wish to do so. An RTO with complex seams and large volumes of imports and exports, for example, should have the option of proposing a methodology that would allow an

external resource to set the market clearing price if the cost basis for its offer is verified by the importing RTO prior to market clearance.[36]

RTOs should also be allowed to propose a post-market-clearance cost-verification methodology to enable external resources to recover their actual costs from the importing RTO through out-of-market payment, in the event that LMPs in the importing region do not equal or exceed the external generator's actual costs. It is reasonable for an importing RTO to provide a mechanism for external resources to recover their actual costs above $1,000/MWh—particularly if the alternative is that such resources will simply decline to offer their energy to the importing RTO. Indeed, if the importing RTO determines that the costs of developing and maintaining a separate cost verification system for after-the-fact, out-of-market compensation to external generators exceeds the benefit, it might be reasonable for it to rely on cost-verification information provided by the exporting RTO for this limited purpose, if such information is available.

6. *Whether excluding virtual transactions above $1,000/MWh could limit hedging opportunities, present opportunities for manipulation or gaming, create market inefficiencies, or have other undesirable consequences, and whether alternatives exist which would allow virtual increment offers and decrement bids to be submitted and cleared at prices above $1,000/MWh?*

TAPS Response:

TAPS supports the NOPR's proposal to exclude virtual transactions above $1,000/MWh. As the Commission correctly recognized, "virtual transactions have no

[36] Any such pre-verification methodology for external resources proposed by the importing RTO must be consistent with the method the importing RTO uses to pre-verify the costs of internal resources. Allowing offers that have been cost-verified using different methodologies to clear in the same market and set a single LMP would undermine the smooth functioning of RTO markets. Particularly given the ability to pseudo-tie units to a neighboring RTO—which would give an individual generator some control over the cost verification methodology applied to its resource—it could even invite gaming. For the same reason, even if the external resource is able to provide cost verification information from the RTO where it is located, that is not an adequate substitute for pre-verification by the importing RTO responsible for clearing

short-run marginal production costs and, thus, could not provide a cost-basis for a virtual transaction above $1,000/MWh." NOPR, P 64. Raising the caps for virtual increment offers and decrement bids would increase the potential energy price above $1,000/MWh at all times, with no cost-verification requirement. It would also provide increased incentives to engage in activity, via virtual bids and offers, that forces prices up during conditions of potential shortage. Those incentives would be particularly pronounced among market participants with portfolios of generation that would benefit from very high LMPs produced by virtual transactions.

Under the offer price regime proposed by the NOPR, there is no need to take on these additional market power risks. In contrast to the day-ahead and real-time market construct at issue in *PJM Interconnection, L.L.C.*, 139 FERC ¶ 61,057 (2012)—where the Commission approved virtual transactions up to $2,700/MWh[37]—the NOPR proposes to apply the same offer price cost-verification requirements in both the day-ahead and real-time markets (NOPR, P 52). There is therefore no need to allow virtual transactions at levels above $1,000/MWh in order to encourage price convergence between those two markets.

7. *The impact the proposal would have on seams?*

TAPS Response:

The NOPR's proposal to allow offer prices above $1,000/MWh to set LMP will affect seams in extreme conditions. Under a nationwide $1,000/MWh offer price cap,

---

the relevant market and setting LMPs.

[37] Under the PJM shortage pricing system at issue in that order, administratively determined shortage prices were only imposed in the real-time market, where prices could rise to $2,700/MWh—not the day-ahead market, where offers were capped at $1,000/MWh. The Commission reasoned that virtual transactions up to $2,700/MWh would prevent distortions in the day-ahead market and allow market participants to hedge

once prices reach that level in two neighboring RTOs, all generators would face the same energy price in both regions.

In contrast, under the NOPR's proposal, neighboring regions could have energy market clearing prices above $1,000/MWh that are different. In theory, this could be beneficial if it encourages exports to the region with higher incremental energy costs. However, as discussed above with respect to NOPR Question No. 3, differences in market clearing prices between RTOs might be an artifact of the different cost verification methodologies, rather than differences in actual cost.

While it might not be possible to eliminate all such discrepancies without forgoing the benefits of building cost verification on existing RTO mitigation systems, it is appropriate to reduce the areas of difference. Eliminating adders for uncertainty and opportunity cost from the cost verification methodology applicable to offer prices above $1,000/MWh, as discussed above, would help avoid exacerbating new seams issues created by the NOPR's proposal to raise the $1,000/MWh offer price cap applicable in most RTOs. Imposition of a new across-the-board hard offer cap, as discussed above with respect to NOPR Question No. 1, would also help reduce seams issues once prices reach the level of that hard offer cap.

---

against real-time market exposure. *Id.* PP 125-127.

CONCLUSION

The Commission should clarify and modify the proposed rule as set forth above.

Respectfully submitted,

/s/ Cynthia S. Bogorad

Cynthia S. Bogorad
William S. Huang
Latif M. Nurani

Attorneys for Transmission Access Policy Study Group

Law Offices of:
Spiegel & McDiarmid LLP
1875 Eye Street, NW, Suite 700
Washington, DC 20006
(202) 879-4000

April 4, 2016