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September 24, 2014

VIA EMAIL

Mr. Steven C. Tabackman  
Mr. Samuel G. Backfield  
Office of Investigations  
Division of Enforcement  
Federal Energy Regulatory Commission  
888 First Street NE  
Washington, DC 20426

RE: *FERC Enforcement Staff's Investigation of Up To Congestion Transactions by Dr. Houlian Chen on Behalf of Himself and the Principals of Huntrise Energy Fund LLC and Powhatan Energy Fund, LLC, Docket No. IN10-5*

Dear Messrs. Tabackman and Backfield:

We write to respond to your 1b.19 notice that you intend to recommend that the Commission issue an Order to Show Cause why Dr. Houlian (“Alan”) Chen, HEEP Fund Inc., and CU Fund Inc. “should not be made the subject of a public proceeding to assess a civil penalty and require the disgorgement of unjust profits derived from certain Up To Congestion transactions” that Dr. Chen executed between June 1, 2010 and August 3, 2010.<sup>1</sup> As you know, we have made several submissions on behalf of our clients, advocating that your office should close this investigation. Because your 1b.19 notice did not say anything new on the substance of the case, we attach and incorporate those submissions by reference here, and add the following brief points. Because we have no expectation that you will change course, we gear this response to the Chairman and Commissioners themselves, and will email it to them directly.

*I. PROCEEDING WITH THIS CASE IS UNCONSTITUTIONAL BECAUSE THE COMMISSION NEVER GAVE PRIOR NOTICE THAT THE CONDUCT AT ISSUE WAS UNLAWFUL*

This case suffers debilitating constitutional due process problems. While we offer several other very strong arguments in favor of dropping this case, even if the Commission disagreed with each of those arguments, terminating this case still is the right—and lawful—

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<sup>1</sup> Letter from S. Tabackman to J. Estes at 1 (Aug. 15, 2014).

thing to do. While the Commission's fraud-based market manipulation case necessarily can apply to conduct not expressly prohibited in advance—assuming there is fraud—the Commission still must give sufficient “fair warning . . . of what the law intends to do if a certain line is passed.”<sup>2</sup> And that never happened here.

To explain why, it is useful to start with a brief explanation of the factual context. During the time period at issue, up-to congestion trades had three financial components:

- (1) there was the prospect of either receiving congestion revenues or paying congestion costs;
- (2) there were transaction costs, including payments for transmission service; and
- (3) there was the prospect of receiving transmission loss credits.

As we understand it, Enforcement's theory is that the disputed trades at issue were manipulative because their sole purpose was to collect transmission loss credits. According to Enforcement, during the two months at issue here, the first category—congestion revenues—was always zero, because the transactions were “paired” as two trades each in an opposite direction—what has been described as A-B and B-A. Hence, we are told, *if* both trades cleared, the congestion cancelled out, and the economics of the trades depended entirely on how the second and third categories netted out. If transmission loss credits were higher than transaction costs, the trades made money; if transmission loss credits were lower, the trades lost money.<sup>3</sup> Hence, we are told, Dr. Chen traded solely to make money from transmission loss credits.

As we show in the next section of this response, that is not an accurate view of the facts; the trades here *did* have exposure to congestion gains and losses. *First*, of the five categories of “paired” trades at issue, three involved unmatched daily volumes, meaning the congestion elements did not cancel out in the aggregate. There thus *was* a directional bet on congestion for these unmatched-volume trades, which make up about 62% of the total megawatt-hours at issue. *Second*, all of the five pairs were exposed to congestion payments and costs if one leg did not clear. Notably, during the Polar Vortex, all of the paired trades, whether matched- or unmatched-volume, would have had one leg break, reaping profits, and sometimes losses, from congestion.

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<sup>2</sup> *McBoyle v. United States*, 283 U.S. 25, 27 (1931).

<sup>3</sup> In its preliminary findings letter, Enforcement complained about trades, “in essence wash trades,” where there was no possibility of congestion gains or losses, and “the possibility of profit depended entirely” on whether the amount of transmission loss credits exceeded the transaction costs. Preliminary Findings Letter at 13. Similarly, the PJM Market Monitor's referral described trades “that had no economic basis other than to collect [transmission loss credits].” Monitoring Analytics Referral at 3. PJM's referral similarly describes “offsetting transactions with no other purpose than to garner [transmission loss credits].” PJM Referral at 6.

In any event, putting aside those factual problems aside for the moment, the prior notice doctrine poses an insurmountable hurdle for Enforcement's case. The reason is that when the Commission originally ordered PJM to pay transmission loss credits to traders engaging in up-to congestion transactions, it expressly anticipated the very types of transactions Enforcement now claims are manipulative. Specifically, in October 2008, the Commission said, in a footnote, that it was "concerned" that paying transmission loss credits to financial traders "would provide an incentive for the arbitrageurs to conduct trades simply to receive a larger credit."<sup>4</sup> But the Commission nonetheless decided to create *precisely* that incentive, and *never cautioned* that there would be *anything unlawful* about traders *following* that incentive.

While the Commission expressed "concern[]," nowhere did it state that "conduct[ing] trades simply to receive a larger credit" was unlawful, unauthorized, or unintended.<sup>5</sup> If anything, the order implies that it was acceptable. First the Commission noted the consequences it anticipated if it approved the new revenue stream provided by transmission loss credits. Then the Commission approved that new revenue stream, never stating that there were any legal problems with those envisioned consequences.

And the Commission took this action on rehearing, having first issued an order discussing, at great length, how all market participants respond to price signals as incentives, and flatly declining to pay transmission loss credits to financial traders.<sup>6</sup> As the Commission explained it, no specific market participants had any entitlement to receive transmission loss credits, but one way to distribute them was on a *pro rata* basis to those who reserved and paid for transmission service, because they were paying costs associated with the power grid.<sup>7</sup> After certain financial traders argued, on rehearing, that up-to congestion trades required payment of transmission charges, the Commission agreed that it was unduly discriminatory to exclude those transactions from the allocation of transmission loss credits.<sup>8</sup> The bottom line of those orders therefore is that payment of transmission service charges entitles the payer to transmission loss credits. Set in this context, the Commission's expression of "concern" about traders transacting

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<sup>4</sup> *Black Oak Energy, L.L.C.*, Order on Rehearing, 125 FERC ¶ 61,042 at P 38 & n.46 (2008).

<sup>5</sup> *Id.*

<sup>6</sup> *Id.* at P 49; *see also Black Oak Energy, L.L.C.*, Order Denying Complaint, 122 FERC ¶ 61,208 at PP 48-52 (2008).

<sup>7</sup> *Black Oak Energy, L.L.C.*, Order on Rehearing, 125 FERC ¶ 61,042 at P 33, 37-38.

<sup>8</sup> *Id.* at PP 48-49 (noting that up-to congestion transactions pay transmission costs); *see also Black Oak Energy, L.L.C.*, Order Denying Rehearing, 131 FERC ¶ 61,034 at PP 33, 35 (2010) (denying rehearing and summarizing principles of credit distribution, including the need to apply methodology "on a not unduly discriminatory basis").

“simply” to earn transmission loss credits cannot colorably be said to provide prior notice that such trades were unlawful fraud-based market manipulation.<sup>9</sup>

Adding to the prior notice problem, the rehearing order itself was not a model of clarity. PJM had to file a request for clarification asking whether the Commission really wanted it to pay transmission loss credits for up-to congestion transactions, eliciting confirmation that the Commission did, in fact, mandate that outcome.<sup>10</sup>

It is, we submit, indisputable that once PJM began paying transmission loss credits for up-to congestion transactions, those payments changed the incentives for everyone engaging in those transactions. Instead of one possible revenue source—congestion profits—now there were two. The ultimate question for any given trade always is whether or not it makes money. Transmission loss credits materially changed that equation for every trade that received them. Just as, in the normal course, businesses provide rebates to incentivize customers to do business with them, the payment of transmission loss credits necessarily incentivized traders to engage in more up-to congestion trades. Because, for the two months at issue here, the size of the transmission loss credits often exceeded the transmission and other charges imposed on up-to congestion transactions, the resulting incentives were powerful indeed. And the Commission did nothing to warn anyone about Enforcement’s eventual view that responding to those incentives would be market manipulation.

To be sure, it would have been odd for the Commission to issue an order requiring PJM to pay transmission loss credits to traders engaging in up-to congestion trades, and in the same order state that it would be market manipulation for traders to seek to collect those payments. The obvious solution there would be not to provide the incentive to begin with. To mandate a payment, but to outlaw any interest in receiving it, seems capricious at best. But that anomalous scenario only becomes *less* rational, *more* unlawful, and *more* unfair if the agency mandates the payments in question *without* giving guidance, then, years down the road, proclaims that it always has been fraud-based market manipulation to seek to collect them. And that essentially is what Enforcement would have the Commission do here.

Enforcement might respond that all traders should have known not to engage in wash trades to collect transmission loss credits. As we explain below, however, the trades at issue here were not wash trades. There are several reasons for that, but one is that the trades did

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<sup>9</sup> Moreover, the context of that footnote suggests that the Commission’s concerns were not directed at up-to congestion transactions. In the October 2008 order, the Commission expressed concerns about *other* financial arbitrageurs who did not pay transmission costs, 125 FERC ¶ 61,042 at P 43 (expressing concern about “payment of the surplus to arbitrageurs that is unrelated to the transmission costs”), but suggested that it would be inappropriate not to pay some of the surplus to up-to congestion traders and others who “also support the fixed costs of the transmission grid.” *Id.* at P 49. Later, the Commission reaffirmed that consistent with the requirement that the transmission loss credits be distributed on a “not unduly discriminatory basis,” it was *necessary* “for certain Up-To Congestion transactions . . . [to] receive their proportionate share of the credit.” *Black Oak Energy, L.L.C.*, Order Denying Rehearing, 131 FERC ¶ 61,034 at PP 33, 35.

<sup>10</sup> *Black Oak Energy, L.L.C.*, 126 FERC ¶ 61,164 at PP 13-14 (2009).

involve exposure to congestion gains and losses. Presumably Enforcement would agree that, at some point, congestion exposure would be significant enough, in comparison to transmission loss credits, to mean that the transactions would be legitimate. But even today we have no guidance as to where such a line might be drawn. Certainly there was no such guidance given in advance.

This case therefore is not about unintended consequences, or “exploiting a loophole.” The consequences here not only were foreseeable, but were actually foreseen. And that, we respectfully submit, should move this case out of the realm of after-the-fact market manipulation prosecutions. The Commission is free to change market rules prospectively to change incentives it ultimately decides it does not want to create. It did that here. Similarly, the PJM Market Monitor picked up the phone and called Alan Chen in early August 2010, asking him to stop the trades in question. Alan did so.<sup>11</sup>

And that is where this case should stop. It cannot possibly be defensible for the Commission to allege that any trading conduct it ultimately decides, in hindsight, that it dislikes is unlawful fraud-based market manipulation. Where the market rules are followed, there is no fraud, and there is no prior notice, the right thing to do is to change the rules and move on. We respectfully submit that this is just such a case.

Terminating this case for prior notice reasons necessarily is a fact-bound result unlikely to set precedent for future cases. The unique facts here—with a Commission order essentially foreseeing the conduct Enforcement seeks to prosecute, but without providing any indication that the Commission considered that conduct unlawful—are unlikely to be repeated. And if the Commission confronts a similar situation in the future, it would be an unambiguously good thing for the Commission to specifically prohibit conduct it considers problematic in advance, rather than to remain silent and later seek retroactive sanctions. As the court in one prior notice case observed, “[a] regulation cannot be construed to mean what an agency intended but did not adequately express.”<sup>12</sup>

Terminating this case for prior notice reasons also eliminates the risk of the Commission losing one or more of the remaining issues we now address. A loss on any one of them would have important consequences for the Commission’s enforcement program. While we think that ultimately they all will be resolved against the Commission, for the reasons set forth here, this case presents a particularly poor vehicle for testing the boundaries of the Commission’s anti-manipulation authority.

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<sup>11</sup> See Email from Alan Chen to Joseph Bowring, Subject Line: Large Volume Trades (Aug. 2, 2010) [HF-000284]; Email chain between Alan Chen and Kevin Gates, Subject Line: RE: PJM Daily Volume and PnL Update for 08/02/2010 (Aug. 2, 2010) [HF-014234 through HF-014235]. Dr. Bowring also told Alan that if he stopped the trades at issue, Bowring would not refer the trading to FERC Enforcement. Though Alan did just as he was asked, Dr. Bowring nonetheless made the referral.

<sup>12</sup> *Usery v. Kennecott Copper Corp.*, 577 F.2d 1113, 1119 (10th Cir. 1977) (citing *United States v. Ray*, 488 F.2d 15 (10th Cir. 1973); *Diamond Roofing Co. v. OSAHRC*, 528 F.2d 645 (5th Cir. 1976)).

In our view, this case poses critical policy questions for the Commission, which necessarily stands as gatekeeper to prosecutions Enforcement wants to bring, but needs the Commission to approve. Eight years ago in Order No. 670, the Commission said that a finding of fraud depends on all of the facts and circumstances of a case.<sup>13</sup> As an initial pronouncement that might be understandable, but it gives no real guidance because, as the saying goes, when everything is important, nothing is important.

Now, eight years later, there is no further guidance. A few months ago Enforcement argued in federal court in the paper mill cases that fraud depended on all of the circumstances.<sup>14</sup> After the judge called that a meaningless standard,<sup>15</sup> Enforcement conjured up Justice Potter Stewart, saying “it’s very much along the lines of the famous pornography quote that you know it when you see it.”<sup>16</sup>

Typically the debate centers around whether the Commission failed to draw a line in advance between lawful and unlawful conduct. That debate raises serious prior notice issues. As Commissioner Moeller has repeatedly stated, “[t]hose who are subject to Commission penalties need to know, in advance, what they must do to avoid a penalty.”<sup>17</sup>

But this case is still more problematic, because here the Commission drew a line, seeming to say that the conduct at issue was foreseen and acceptable. Now, years later, Enforcement seeks to redraw that line. And that, by any measure, goes too far.

## II. *THERE IS NO FRAUD HERE*

### A. *The Expert Statements Posted at FERCLitigation.com Strongly Support the Conclusion that the Transactions at Issue Were Not Manipulative*

As you are aware, since we sent our prior submissions, including the affidavit of Professor Craig Pirrong, the principals of Powhatan have engaged numerous additional experts to write papers on Enforcement’s investigation and have published those papers on their website,

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<sup>13</sup> See *Prohibition of Energy Market Manipulation*, Order No. 670, FERC Stats. & Regs. ¶ 31,202 at P 50 (2006).

<sup>14</sup> Transcript of Hearing at 25:13-14, *FERC v. Silkman*, Nos. 13-cv-13054, 13-cv-13056 (D. Mass. July 18, 2014) (“FERC cases are built around all the relevant facts.”); see also *id.* at 29:18-21 (“What’s relevant here is that under the facts of this case, like in all fraud actions, taken as a whole there was fraud ...”).

<sup>15</sup> *Id.* at 25:15-25 (“You know, when I was a lawyer appearing in the state courts, the state district courts, one of the things that used to irritate me more than anything else was whenever a judge made a ruling, he would say *res gestae*. It was two layers of protection for the judge. The first is when you don’t know what you are doing, render it in Latin. The second part is to say *res gestae*, all the relevant circumstances. That tells me nothing.”).

<sup>16</sup> *Id.* at 39:23-25; see also *Jacobellis v. Ohio*, 378 U.S. 184, 197 (1964) (Stewart, J., concurring).

<sup>17</sup> *Seminole Energy Servs., LLC*, 126 FERC ¶ 61,041, at 61,270 & n.1 (2009) (Moeller, C., dissenting) (citing *Concurring Opinions of Commissioner Moeller in Enforcement of Statutes, Regulations, and Orders*, 123 FERC ¶61,156 (2008), and *Compliance with Statutes, Regulations, and Orders*, 125 FERC ¶61,058 (2008))

FERClitigation.com. On September 23, 2014, counsel for Powhatan took the additional step of submitting those papers in this investigation, which we hereby incorporate by reference. The experts submitting those papers are:

- Susan J. Court, Principal, SJC Energy Consultants, LLC, and former Director of Enforcement at FERC;
- Jeffrey H. Harris, Ph.D., Gary Cohn Goldman Sachs Endowed Chair in Finance at the Kogod School of Business, American University, and former Chief Economist at the CFTC;
- Larry Harris, Ph.D., Fred V. Keenan Chair in Finance, University of Southern California Marshall School of Business, author of *Trading and Exchanges: Market Microstructure for Practitioners*, and former Chief Economist at the SEC;
- Terrence Hendershott, Ph.D., Cheryl and Christian Valentine Chair, Haas School of Business, University of California at Berkeley;
- William W. Hogan, Ph.D., Raymond J. Plank Professor of Global Energy Policy, John F. Kennedy School of Government, Harvard University;
- David Hunger, Ph.D., Vice President, Charles River Associates International, Inc., and former Senior Economist at FERC;
- Stewart Mayhew, Ph.D., Principal, Cornerstone Research, and former Deputy Chief Economist at the SEC;
- Roy Shanker, Ph.D., independent energy consultant with over 40 years of experience in PJM markets; and
- Chester S. Spatt, Ph.D., Pamela R. and Kenneth B. Dunn Professor of Finance, Tepper School of Business, Carnegie Mellon University, and former Chief Economist at the SEC.

The weight of these independent expert views leaves no room for Enforcement Staff's unfounded theories. We next expand on why that is the case.

*B. There Was No Deceptive Conduct*

Alan Chen never engaged in any conduct that was deceptive. The Preliminary Findings Letter says the trades at issue were wash trades. The Notice of Alleged Violations says those trades “falsely appeared to be spread trades.” Both statements are wrong.

*1. The “paired” trades were not wash trades*

The disputed trades were “paired.” They have been described as A to B and B to A. If both legs clear, and the volumes are equal, aggregated on a daily basis, the congestion components cancel each other out and profit or loss is governed by whether the transmission loss credits are greater or less than the transaction costs. Enforcement has always focused on the fact, known only in hindsight, that during the two months at issue here, both legs always cleared.

But as we noted above, the paired trades nonetheless exposed the portfolio to the possibility of earning congestion profits and suffering congestion losses in at least two ways. *First*, the majority of the paired trades had unmatched daily volumes, meaning that overall there was a directional congestion bet.<sup>18</sup> *Second*, both the matched- and unmatched-volume paired trades were exposed to congestion if one leg failed to clear. This congestion exposure is one reason why the disputed trades are not wash trades.

In addition, as we explained in our first submission,<sup>19</sup> and as several experts also have explained,<sup>20</sup> wash trades by definition do not make money themselves; they instead are used to make money in other ways. Here, the trades at issue *did* make money themselves. So they by definition are not wash trades.

Furthermore, even when the congestion elements completely cancelled each other out, we still would have the net outcome of paying transaction charges and receiving transmission loss credits. And that outcome was not zero. Here too the wash trade assertion runs aground on the facts.

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<sup>18</sup> Specifically, the MWh volume of the import-leg did not match the MWh volume of the export-leg on a daily aggregate basis. As the table on p. 11 below shows, only pairs 1 (COMED) and 5 (AEP) involved matched volumes on each leg. For pairs 2 (DAY), 3 (COOK), and 4 (ROCKPORT)—which represent approximately 62% of MWhs at issue—the aggregate volumes do not match. Volumes on the import leg exceeded volumes on the export leg for pairs 2 and 3, and volumes on the export leg exceeded volumes on the import leg for pair 4.

In the Preliminary Findings Letter, Enforcement challenged a broader array of up-to congestion trades, including one-way A-B trades, and another form of paired trades, A-B and B-C. As we understand it, Enforcement has terminated its investigation into those other variations. But its 1b.19 notice does not give any additional details about exactly what specific transactions *are* being pursued. We know they are notionally described as A-B and B-A. But we do not, for example, specifically know how Enforcement views the unmatched-volume paired trades. Perhaps they would argue that the daily aggregated positions should be disaggregated into one matched-volume set of positions and one one-way position. We think that would be inaccurate cherry-picking of data, because the real exposure to congestion occurs on a daily basis, and thus can be accurately viewed only on a daily aggregate basis.

<sup>19</sup> Written Submission to Commission Investigative Staff on Behalf of Dr. Houlian Chen at 7-8, 27-35 (Dec. 13, 2010), attached here as Attachment 1.

<sup>20</sup> *See, e.g.*, Mayhew Report at ¶ 45; Wallace Aff. at ¶ 54; Pirrong Aff. at ¶ 25; L. Harris Report at p. 4; Hunger Report at pp. 1-4.

At bottom, Enforcement's wash trade assertion boils down to an assumption that it somehow is improper to trade in ways that earn transmission loss credits. For all of the reasons set forth herein, and previously, that assumption is false. Transmission loss credits were compensation paid in dollars. It was inevitable that traders would trade to receive them, particularly when they often became larger than the transaction costs. Enforcement's effort to outlaw such trades after the fact is akin to claiming that it is fraud to buy a McDonald's Happy Meal for the toy. Or, more accurately, akin to claiming that it is fraud to buy a Happy Meal for the toy *after* parents have been buying Happy Meals for years, with no prior warning about the perils of pursuing the plain incentives the toy presents.

2. *The "paired" trades were spread trades*

Several of the experts have addressed why the trades are spread trades.<sup>21</sup> As Dr. Mayhew explains (at ¶ 29):

"Spread Trading" is a generic term for a type of trading strategy commonly used by traders in securities, commodities, and derivative securities markets and widely recognized by regulators as a legitimate trading strategy. In a spread trade, a trader takes offsetting positions in two or more instruments, such that the combined position has little or no risk exposure to movements in the market.

The paired trades at issue here match that definition. In one of his depositions, Dr. Chen mathematically proved that, using the pricing formula for up-to congestion trades.<sup>22</sup> Thus, even though the paired trades take at least partially "offsetting positions," they are *not guaranteed to offset*. As noted above, the net of paying transaction costs and receiving transmission loss credits is not zero (except randomly). And if one leg fails to clear, the paired trades are exposed to congestion payments and congestion costs. For the unmatched-volume trades, the congestion exposure obviously is greater.

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<sup>21</sup> L. Harris Report at p. 2; Mayhew Report at ¶ 48.

<sup>22</sup> See Chen Dep. Ex. 50 (July 20, 2011); see also *id.* at 162:5- 168:21 (discussing Exhibit 50). As Dr. Chen explained, under the maximum allowable bid prices of -\$50 and +\$50, the formula for the import leg indicated that the bid would clear if  $DALMP_B$  minus  $DALMP_A$  were less than or equal to the bid price of \$50. The formula for the export leg would clear if  $DALMP_B$  minus  $DALMP_A$  were greater than or equal to the bid price of -\$50.

Under certain conditions, both legs would clear (i.e., if  $DALMP_B$  minus  $DALMP_A$  were between -\$50 and \$50). Under other conditions, one leg would break: for example, if  $DALMP_B$  minus  $DALMP_A$  were greater than \$50, then the export leg would clear but *not* the import leg. If  $DALMP_B$  minus  $DALMP_A$  were less than -\$50, then the import leg would clear, but *not* the export leg. There are no conditions in which both legs could break.

Note: DALMP stands for Day-Ahead LMP. This example assumes a bid price of \$50 for the import leg. If the bid price were \$35, or another price under the permitted cap, then the import leg would clear if  $DALMP_B$  minus  $DALMP_A$  were less than or equal to \$35 (or the other bid price). Similar logic follows for the export leg, which uses a bid price of -\$50.

Enforcement claimed in its Preliminary Findings Letter that this risk-reward profile would be distributed 50-50, so it was just as likely that congestion outcomes would lose money as make money. That is mistaken. As Dr. Shanker has explained, it is inherent in PJM's market structure, with congestion potentially occurring in both the day-ahead and real-time energy market, that the risk-reward profile is tilted towards profitability.<sup>23</sup> That is because the direction of the A-B and B-A trades meant they would make money if one leg failed to clear and congestion lessened as PJM moved from its day-ahead to its real-time markets. Because market participants and system operators can and do respond to congestion outcomes occurring in the day-ahead market, that inherently means it is more likely that congestion will lessen in the real-time market.

And that is a good thing for the system. We expect Enforcement will claim that the transactions here served no beneficial purpose and merely served to collect transmission loss credits. There was no requirement, when these trades took place, that traders transact only in ways they thought would benefit the PJM system. Traders seek profits. And there was no prior notice that traders engaging in up-to congestion transactions had to forego profitable transactions where there might not be any system benefit. That might suggest the need to prospectively change the market design. Or it might prompt the Commission to adopt some prospective "system-benefit" rule. But no such rule was in place at the time those trades occurred.

Nonetheless, it remains the case that if one leg had failed to clear, the matched-volume paired trades would have helped reduce real-time congestion. And the trades would have had that effect precisely when day-ahead congestion was substantial—in excess of the caps, typically \$50/MWh or \$35/MWh, that Alan used for his paired trades.

In addition, because the PJM-import leg of those trades involved paying for one MWh of transmission service for every MWh of up-to congestion trading, the paired trades contributed to paying part of the costs of the PJM system—the litmus test for receiving transmission loss credits. These trades thus offered the only benefit the rules required—contributing dollars to the grid by paying for transmission service.

Enforcement previously has claimed that there was no contemporaneous evidence that the possibility of congestion revenue was part of the paired trade strategy. As we have pointed out, the unmatched-volume paired trades involve exposure to congestion profit and loss in all instances. Where the matched-volume trades are concerned, the exposure comes when one leg fails to clear. And the lower the "cap" used in an up-to congestion trade, the greater the chances of a leg not clearing. The only conceivable purpose to Alan sometimes using a cap lower than \$50/MWh, such as \$35/MWh, was to increase exposure to a leg not clearing.<sup>24</sup> And when Dr.

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<sup>23</sup> See Shanker Report at ¶¶ 43-43.

<sup>24</sup> Moreover, as Enforcement's preliminary findings show, the average bid prices for the paired transactions entered for HEEP fund and Powhatan were less than \$50. See Preliminary Findings Letter at 17 (paired trades at AEP, COMED, COOK, DAY, and ROCKPORT all have average bid prices less than \$50).

Bowring first contacted Alan about stopping the paired trades, Alan emphasized his view that those trades absolutely carried risk.<sup>25</sup>

Historical data shows that too. We recently examined PJM market outcomes over the past nine years. Those data show that a leg has broken for each of the five “paired” combinations Alan traded. As the table below shows, there was a pronounced pattern of that occurring during the well-known “Polar Vortex” earlier this year. Under normal conditions, day-ahead congestion for the five paired-trade combinations typically would be within the range of negative-\$50/MWh and positive-\$50/MWh. Under those conditions, the matched pairs would clear both legs. But particularly when the system is under stress, like in the Polar Vortex, the matched pairs would have broken down and provided valuable price convergence to the system.

Matched Pairs (HEEP Fund Inc) (Source -> Sink)	Volume (6/1/2010- 8/3/2010)		PJM Up-to-Congestion Trades for January 2014 (Total Hours = 744)									
			Bid @\$35/MWh					Bid @\$50/MWh				
			Hours Rejected	Profit (\$/MWh-Month)	Profit (\$)	Hours Rejected	Profit (\$/MWh-Month)	Profit (\$)				
1 COMED->MISO MISO->COMED	17.04%	34.08%	0	5	\$788.56	\$218.84	\$17,828	0	2	\$788.56	\$114.88	\$9,359
	17.04%		5	5	(\$569.72)			2	2	(\$673.68)		
2 DAY->MISO MISO->DAY	14.20%	30.11%	0	102	\$814.25	\$1,349.32	\$95,979	0	56	\$814.25	\$1,544.34	\$110,813
	15.91%		102	102	\$535.07			56	56	\$730.09		
3 COOK->MISO MISO->COOK	7.58%	18.81%	0	10	(\$689.12)	\$525.50	\$40,239	0	4	(\$689.12)	\$341.73	\$30,373
	11.23%		10	10	\$1,214.62			4	4	\$1,030.85		
4 ROCKPORT->MISO MISO->ROCKPORT	8.37%	13.14%	80	80	(\$3,368.01)	\$2,462.45	(\$1,812)	53	53	(\$3,976.64)	\$1,853.82	(\$26,167)
	4.77%		0	80	\$5,830.46			0	53	\$5,830.46		
5 AEP->MISO MISO->AEP	1.93%	3.86%	0	132	(\$2,840.87)	(\$1,481.42)	(\$13,669)	0	58	(\$2,840.87)	(\$698.45)	(\$6,445)
	1.93%		132	132	\$1,359.45			58	58	\$2,142.42		
Total	100.00%	100.00%	170	170	\$3,074.69	\$3,074.69	\$138,565	90	90	\$3,156.32	\$3,156.32	\$117,933

**Notes:**

1. The column "Hours Rejected" shows total hours the UTC trades were rejected. For example, MISO->COMED was rejected in 5 hours out of 744 hours.
2. The column "Profit (\$/MWh-Month)" shows total monthly profit or loss of the UTC trades with 1 MW for every hour (for a total of 744 hours). For pair 2, both legs would have been profitable.
3. The column "Profit (\$)" shows the total monthly profit or loss of the imaginary UTC trades with the same average volume as those executed during 6/1/2010 to 8/3/2010 for HEEP Fund Inc. These five matched pairs would have made \$138,565 if all bids were submitted at \$35/MWh, and \$117,933 if all bids were submitted at \$50/MWh. Pair 4 would have been very profitable if it had been perfectly matched.

Focusing on one day during the polar vortex period—January 28, 2014—highlights the exposure that all of the paired trades had to congestion outcomes:

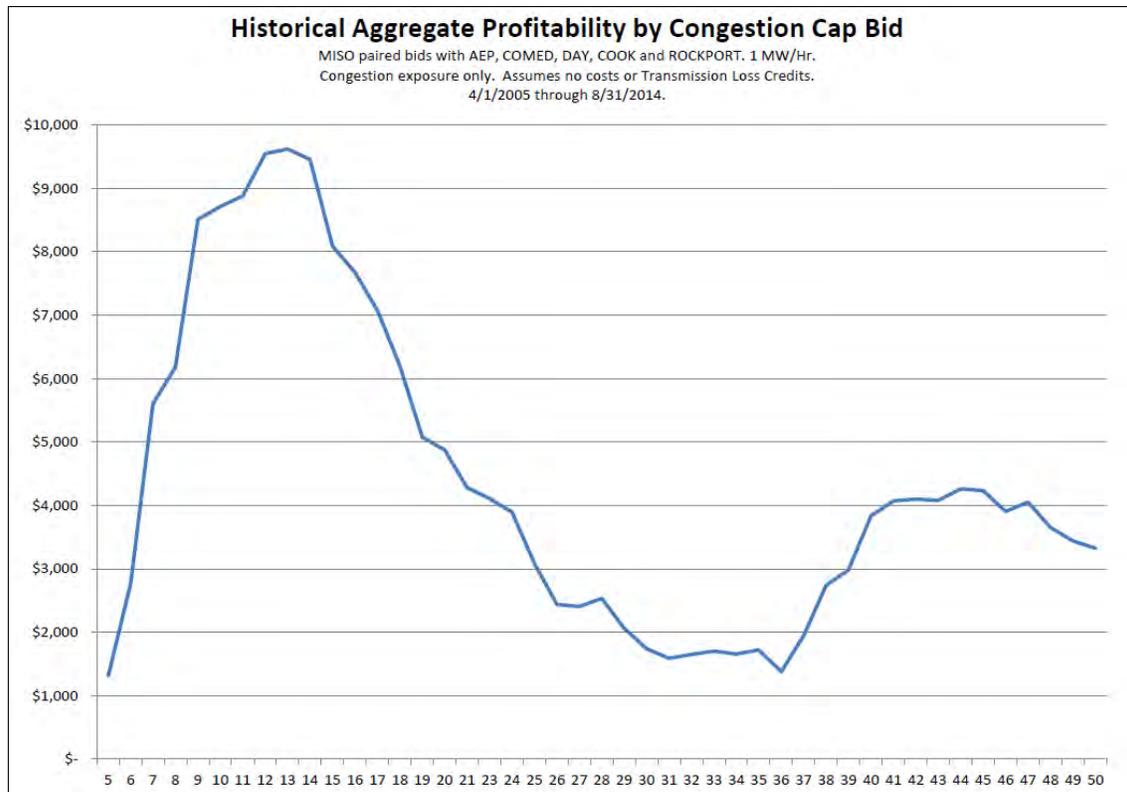
<sup>25</sup> Email from Alan Chen to Joseph Bowring (Aug. 6, 2010) [HF-000292] (explaining conditions in which a leg might be rejected, resulting in losses).

Hour	DA Prices		RT Price		DA			
	MISO	AEP	MISO	AEP	Congestion	PnL	\$35 Cap	\$50 Cap
0	\$ 189.54	\$ 216.74	\$ 25.37	\$ 27.08	\$ 27.19	\$ 25.48		
1	\$ 144.95	\$ 170.64	\$ 27.32	\$ 29.31	\$ 25.69	\$ 23.71		
2	\$ 150.00	\$ 175.99	\$ 27.80	\$ 29.85	\$ 25.99	\$ 23.94		
3	\$ 187.82	\$ 214.57	\$ 22.02	\$ 23.76	\$ 26.75	\$ 25.01		
4	\$ 208.70	\$ 238.63	\$ 27.95	\$ 30.86	\$ 29.93	\$ 27.02		
5	\$ 283.54	\$ 328.48	\$ 60.80	\$ 71.20	\$ 44.94	\$ 34.54	\$ 34.54	
6	\$ 483.68	\$ 542.27	\$ 43.68	\$ 80.62	\$ 58.60	\$ 21.66	\$ 21.66	\$ 21.66
7	\$ 798.16	\$ 868.07	\$ 20.77	\$ 51.27	\$ 69.91	\$ 39.41	\$ 39.41	\$ 39.41
8	\$ 791.42	\$ 851.03	\$ 88.48	\$ 106.86	\$ 59.61	\$ 41.23	\$ 41.23	\$ 41.23
9	\$ 704.63	\$ 755.54	\$ 126.63	\$ 144.92	\$ 50.91	\$ 32.62	\$ 32.62	\$ 32.62
10	\$ 587.08	\$ 630.93	\$ 124.36	\$ 145.17	\$ 43.85	\$ 23.04	\$ 23.04	
11	\$ 572.77	\$ 617.56	\$ 74.15	\$ 86.12	\$ 44.79	\$ 32.82	\$ 32.82	
12	\$ 410.45	\$ 450.31	\$ 88.75	\$ 102.28	\$ 39.86	\$ 26.33	\$ 26.33	
13	\$ 393.67	\$ 437.62	\$ 31.30	\$ 45.25	\$ 43.95	\$ 30.00	\$ 30.00	
14	\$ 300.22	\$ 342.76	\$ 78.09	\$ 101.82	\$ 42.54	\$ 18.81	\$ 18.81	
15	\$ 275.00	\$ 318.49	\$ 33.87	\$ 50.83	\$ 43.49	\$ 26.53	\$ 26.53	
16	\$ 369.07	\$ 414.15	\$ 85.82	\$ 114.17	\$ 45.08	\$ 16.73	\$ 16.73	
17	\$ 489.30	\$ 548.94	\$ 65.91	\$ 96.33	\$ 59.64	\$ 29.22	\$ 29.22	\$ 29.22
18	\$ 811.51	\$ 863.65	\$ 83.11	\$ 113.79	\$ 52.14	\$ 21.46	\$ 21.46	\$ 21.46
19	\$ 801.49	\$ 851.02	\$ 114.19	\$ 134.63	\$ 49.53	\$ 29.08	\$ 29.08	
20	\$ 580.88	\$ 625.70	\$ 96.12	\$ 132.65	\$ 44.82	\$ 8.29	\$ 8.29	
21	\$ 484.68	\$ 525.53	\$ 78.42	\$ 92.08	\$ 40.85	\$ 27.19	\$ 27.19	
22	\$ 306.84	\$ 347.62	\$ 37.30	\$ 40.34	\$ 40.78	\$ 37.73	\$ 37.73	
23	\$ 229.90	\$ 257.79	\$ 34.81	\$ 41.16	\$ 27.88	\$ 21.53		

Enforcement may contend that it is misleading to focus on unusual events like the Polar Vortex to show how the paired trades exposed the portfolio to congestion outcomes. But the matched pairs have “broken” under other circumstances; that is not purely a Black Swan occurrence. And future price outcomes cannot be known with any certainty, which also was the case when the trades at issue were placed in the Summer of 2010. The possibility of one leg breaking was always there. The U.S. bulk power market commonly is considered the most volatile commodity market in the world. Unexpected events happen in those markets every day. Holding a Ph.D in power systems engineering, Dr. Chen was keenly aware of this.

Neither Alan Chen nor any other trader caused transmission loss credits to often exceed transaction costs for up-to congestion trades. That outcome was due to decisions made by the Commission and systems administered by PJM. Given that reality, Alan’s trades exposed his portfolio to a range of outcomes. There is no doubt that transmission loss credits were very important, but they were not the only outcome. Congestion risk and reward existed for the unmatched-volume paired trades, even if both legs cleared, and for both the unmatched- and matched-volume paired trades, if only one leg cleared. There was a range of potential outcomes, and there were “tails” in the distribution that reflected both positive and negative congestion outcomes. History shows that those “tails” have occurred, even for the matched-volume paired trades. And when the trades were placed, there was no way to know with certainty what would happen.

The chart below demonstrates the irreducible congestion component of the matched-volume paired trade strategy. It assumes the placement of paired trades of 1 MWh using each of the five paths relevant here for every hour over the past nine years. It presents a range of “caps”—from \$5/MWh to \$50/MWh (shown on the x-axis). It assumes no transaction costs or transmission loss credits. This means it isolates the congestion component.



The chart shows positive—not negative—congestion revenues across a range of caps. It shows that congestion is an active component of the matched-volume paired trades, meaning that it is an even more active component of the unmatched-volume paired trades. And it shows that Dr. Shanker’s expected asymmetric profitability is, in fact, borne out historically.

In sum, the matched-volume paired trades at issue did carry exposure to congestion profit and loss. That is beyond question. And the unmatched-volume paired trades carried greater exposure to congestion profit or loss. The receipt of transmission loss credits offset transaction costs, at least in part, and often exceeded them, thus offering an independent profit opportunity. They thus subsidized the exposure to congestion, and often even paid the portfolio to take on that exposure. But there were always two potential revenue streams, neither known with certainty in advance.

Enforcement presumably will contend that the degree of congestion exposure was too small to matter. But as several of the experts have explained, spread trades in other markets can

carry very little, and even no, risk. Yet they are considered legitimate transactions and we know of no agency or court that has found them to constitute fraudulent market manipulation.

For example, as Dr. Mayhew has explained, Alan's trading strategy is "economically similar and closely analogous to a well-documented strategy done in the exchange-traded stock option markets" called the "dividend spread" strategy.<sup>26</sup> That strategy "involves trading call options on dividend-paying stocks, on the last trading date before the 'ex-dividend' date," in order to "capture the dividend."<sup>27</sup> Like Enforcement's allegations here, that strategy ends up holding offsetting positions,<sup>28</sup> it "involves little or no market risk,"<sup>29</sup> and it profits from "diverting benefits away from other market participants."<sup>30</sup> But even though the dividend spread strategy "may involve trading volume sufficiently large that it has a substantial impact on total trading volume," it is not viewed as illegal by SEC staff because "the motivation of the strategy was not to deceive, and the success of the strategy does not depend on deception."<sup>31</sup> Similarly, Dr. Larry Harris has described how Dr. Chen's trades are no different from statistical arbitrage trades that appear commonly in stock markets and that are not in and of themselves manipulative or illegal.<sup>32</sup> And Dr. Wallace explains that "trading for the purpose of collecting a rebate is considered a lawful and recognized practice in the securities markets," on which FERC's market manipulation statute is based.<sup>33</sup>

C. *Order No. 670's "Impairing a Well-Functioning Market" Definition of Fraud Does Not Survive Analysis*

Enforcement may be claiming—though it has not stressed the point to date—that the trades at issue were fraudulent because they "impaired a well-functioning market."<sup>34</sup> But that

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<sup>26</sup> Mayhew Report at ¶ 52.

<sup>27</sup> *Id.* ¶ 53.

<sup>28</sup> *Id.* ¶ 93.

<sup>29</sup> *Id.* ¶ 97.

<sup>30</sup> *Id.* ¶ 95.

<sup>31</sup> *Id.* ¶ 96.

<sup>32</sup> L. Harris Report at pp. 2-3.

<sup>33</sup> Wallace Aff. ¶ 15. Enforcement's only counterexample is an unpublished Third Circuit opinion where the court was bound by a deferential standard of review, but indicated that if it had "*de novo* review of the record, [it] might well reach a different conclusion." *Amanat v. SEC*, 2008 WL 7239890, at \*2 (3d Cir. 2008) (Unpublished Opinion). Furthermore, as Dr. Jeff Harris explains, the distinctions between Dr. Chen's strategy and the trading in *Amanat* illustrate that case is not persuasive authority here. J. Harris Report at ¶¶ 25-28.

<sup>34</sup> See *Prohibition of Energy Market Manipulation*, Order No. 670, FERC Stats. & Regs. ¶ 31,202 at PP 50 & n.103 (citing *Dennis v. United States*, 384 U.S. 855, 861 (1966)).

definition of fraud in Order No. 670 is doomed to failure in court. The case cited in Order No. 670 assumed fraud at the outset and thus cannot defend any effort to avoid proving fraud here.

*Dennis*, as we have explained before, was about a conspiracy to defraud the government, brought under a general conspiracy statute against criminal defendants who were alleged to have fraudulently obtained the services of the National Labor Relations Board on behalf of a labor union by knowingly filing false affidavits denying their affiliation with the Communist Party. The statute in question, 18 U.S.C. § 371, was a general prohibition against any conspiracy “to defraud the United States, or any agency thereof in any manner or for any purpose.” Although this language has been construed to extend beyond “fraud as that term has been defined in the common law,” and to reach “any conspiracy for the purpose of impairing, obstructing or defeating the lawful function of any department of Government,”<sup>35</sup> the statute does not extend to forbid conduct that is not fraudulent.<sup>36</sup> It is reserved for conspiracies to defraud or obstruct the government through “deceit, craft or trickery, or at least by means that are dishonest.”<sup>37</sup> In *Dennis*, fraud was a given—the communist sympathizers lied about being communists. Here, Enforcement has not identified even a hint of fraud in Dr. Chen’s transactions.

But courts have flatly rejected the argument that *Dennis* permits the government to punish the “impairment” of a government function without establishing some form of fraudulent conduct. As now-Chief Judge Kozinsky explained in *Caldwell*:

There are places where, until recently, “everything which [was] not permitted [was] forbidden . . . [W]hatever [was] permitted [was] mandatory . . . Citizens were shackled in their actions by the universal passion for banning things.” Yeltsin Addresses RSFSR Congress of People’s Deputies, BBC Summary of World Broadcasts, Apr. 1, 1991, *available in* LEXIS, Nexis Library, OMNI file. Fortunately, the United States is not such a place, and we plan to keep it that way. If the government wants to forbid certain conduct, it may forbid it. If it wants to mandate it, it may mandate it. But we won’t lightly infer that in enacting 18 U.S.C. § 371 Congress meant to forbid all things that obstruct the government, or require citizens to do all those things that could make the government’s job easier. So long as they don’t act dishonestly or deceitfully, and so long as they don’t violate some specific law, people living in our society are still free to conduct their affairs any which way they please.<sup>38</sup>

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<sup>35</sup> *Dennis*, 384 U.S. at 861 (listing cases).

<sup>36</sup> *See United States v. Caldwell*, 989 F.2d 1056, 1058 (9th Cir. 1993).

<sup>37</sup> *Id.* at 1058 (quoting *Hammerschmidt v. United States*, 265 U.S. 182, 188 (1924)); accord *McNally v. United States*, 483 U.S. 350, 358-59 & n.8 (1987) (same).

<sup>38</sup> *Caldwell*, 989 F.2d at 1061; *see also United States v. Knapp*, 25 F.3d 451, 455 (7th Cir. 1994) (noting that *Hammerschmidt* and *Caldwell* “stand for the proposition that a defendant cannot be found guilty of defrauding the United States without some showing of fraud”).

So too here. Under the enforceable rules in effect at the time, in the Summer of 2010, “so long as [traders] don’t act dishonestly or deceitfully, and so long as they don’t violate some specific law, [rule, or tariff, they] are still free to conduct their [trades] any which way they please.”<sup>39</sup> The Commission might seek to change that going forward. But it cannot change the past.

*D. Enforcement Errs by Relying on Markowski for the Proposition that Intent is All That Matters; There Still Must Be Fraudulent Conduct*

Citing *Markowski*, Enforcement’s Preliminary Findings Letter asserts that fraudulent market manipulation can be based solely on intent.<sup>40</sup> That contention badly misreads *Markowski*.

In *Markowski*, the only federal court precedent cited for this claim, there was no dispute that the respondents were deliberately (but unprofitably) trying to “prop up” the price of a particular security through manipulative trading activity.<sup>41</sup> Writing for the court, Judge Williams was responding to a specific claim when it acknowledged “what appears to be Congress’s determination that “manipulation” can be illegal solely because of the actor’s purpose.”<sup>42</sup> The respondents in *Markowski* argued that they could not be found liable for manipulation for using a “fraudulent device” under section 10(b) of the Securities Exchange Act if they did not engage in fictitious/wash trades of the sort described in section 9(a)(1) of the Securities Exchange Act. Judge Williams rejected that argument because section 9(a)(2) expressly outlaws trading “creating actual or apparent active trading in such security or raising or depressing the price of such security, for the purpose of inducing the purchase or sale of such security by others.”<sup>43</sup> And that is exactly what the respondents in *Markowski* admitted they were trying to do—engage in manipulative trading for the purpose of raising the price of the stock for purchase by others.

It was hardly an expansive reading of the law for Judge Williams to hold that a practice specifically outlawed in section 9(a)(2) must be considered a “fraudulent device” under section 10(b)—the same treatment extended to other practices expressly outlawed in section 9. Put differently, it is true “that ‘manipulation’ can be illegal solely because of the actor’s purpose,”<sup>44</sup> but only where manipulation occurred and the purpose has already been forbidden. But Enforcement has failed to identify where any manipulation has occurred or any forbidden purpose in Dr. Chen’s trades.

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<sup>39</sup> *Id.*

<sup>40</sup> See Preliminary Findings Letter at 19 & n.15 (citing *Markowski v. SEC*, 274 F.3d 525, 529 (D.C. Cir. 2001)).

<sup>41</sup> 274 F.3d at 528-29.

<sup>42</sup> *Id.* at 529.

<sup>43</sup> *Id.* (quoting 15 U.S.C. § 78i(a)(2)).

<sup>44</sup> *Markowski*, 274 F.3d at 528-29.

*Markowski* does not grant the government an open license to declare that “manipulation” exists simply because of intent. *Markowski* in no way erodes the Supreme Court’s mandate that the alleged manipulation must “deceive or defraud investors by controlling or artificially affecting the price of securities.”<sup>45</sup>

### III. THERE IS NO JURISDICTION HERE

#### A. The Trades at Issue Are Not FERC-Jurisdictional Transactions

In addition, the up-to congestion trades at issue fall outside the scope of the Commission’s anti-manipulation statute, which prohibits “any entity” from using “any manipulative or deceptive device or contrivance (as those terms are used in section 78j(b) of title 15),” “in connection with the purchase or sale of electric energy or the purchase or sale of transmission services subject to the jurisdiction of the Commission.”<sup>46</sup>

To date, Enforcement has claimed that FERC has jurisdiction over the transactions simply because they took place in a PJM-administered market.<sup>47</sup> But not all transactions in PJM—or any other ISO or RTO—are necessarily subject to FERC’s jurisdiction.<sup>48</sup> Rather, the appropriate inquiry is whether the Federal Power Act confers jurisdiction.<sup>49</sup>

Here, FERC does not have jurisdiction over the asserted conduct. Neither Dr. Chen nor any of the other respondents are alleged to have actually received or delivered electricity under any of the up-to congestion transactions. The up-to congestion trades at issue here were purely financial transactions, and thus are not jurisdictional sales of physical power.

FERC has repeatedly held that the physical delivery or transmission of electricity at wholesale is an essential element to its jurisdiction.<sup>50</sup> Consequently, where, as here, a transaction

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<sup>45</sup> *Ernst & Ernst v. Hochfelder*, 425 U.S. 185, 199 (1976).

<sup>46</sup> 16 U.S.C. § 824v(a).

<sup>47</sup> See Preliminary Findings Letter at 22 (asserting that “[t]rading activity within Commission-approved regional transmission organizations or independent system operators is jurisdictional”).

<sup>48</sup> See, e.g., *Elec. Power Supply Ass’n v. FERC*, 753 F.3d 216 (D.C. Cir. 2014) (holding that FERC lacked jurisdiction to regulate demand response compensation in RTOs and ISOs); cf. *Cal. Indep. Sys. Operator, Inc. v. FERC*, 372 F.3d 395 (D.C. Cir. 2004) (holding that FERC’s jurisdiction to regulate RTOs and ISOs is limited by the Federal Power Act and does not extend to matters of governance).

<sup>49</sup> *Cal. Indep. Sys. Operator, Inc.*, 372 F.3d at 398-99.

<sup>50</sup> See, e.g., *Cal. Pac. Elec. Co., LLC*, 133 FERC ¶ 61,018 at P 37 (2010) (“when a public utility delivers electricity at wholesale to a supplier for the purpose of resale, section 201 gives us unqualified authority to assert jurisdiction over that transaction”) (emphasis added); *Detroit Edison Co.*, 95 FERC ¶ 61,415, at 62,535-62,536, *order on reh’g*, 96 FERC ¶ 61,309 (2001) (“to the extent that any facilities, regardless of their original nominal classification, in fact, prove to be used by public utilities to provide transmission service in interstate commerce in order to deliver power and energy to wholesale purchasers, such facilities are subject to this

does not result in the delivery of electricity, FERC has no jurisdiction.<sup>51</sup> Enforcement Staff never claims that Dr. Chen's trades would have resulted in physical delivery.

*B. The Trades At Issue Are Not In Connection With Jurisdictional Transactions*

Nor can Enforcement validly claim that the trades were "in connection with" jurisdictional transactions. On other facts, Enforcement might argue that up-to congestion trades changed PJM auction outcomes. We do not concede that that would clear the "in connection with" hurdle, but need not address that question because Enforcement's case here starts from the proposition that the trades were always offsetting in the time period at issue, and thus never affected congestion outcomes.<sup>52</sup> Those trades thus were not "in connection" with FERC-jurisdictional outcomes.

*C. The Commission Lacks Statutory Authority to Penalize Individuals like Dr. Chen*

Furthermore, the Commission has no authority to penalize individuals like Alan Chen. The FPA prohibits "any entity" from using a "manipulative or deceptive device or contrivance" in connection with the purchase or sale of wholesale electric energy or transmission services.<sup>53</sup> Congress did not define the term "entity" in this legislation, nor is it defined elsewhere in the FPA. Therefore, the term must be "'interpreted in accordance with [its] ordinary meaning.'"<sup>54</sup>

The plain meaning of "entity" does not include natural persons. Instead, an "entity" is "[a]n organization (such as a business or a governmental unit) that has a legal identity apart from its

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Commission's jurisdiction and review") (emphasis added)); *Ne. Utils. Serv. Co.*, 107 FERC ¶ 61,246 at P 22 (2004).

<sup>51</sup> See, e.g., *Puget Sound Energy, Inc. v. All Jurisdictional Sellers of Energy and/or Capacity at Wholesale into Elec. Energy and/or Capacity Mkts. in Pac. Nw.*, 96 FERC ¶ 63,044, at n.318 (2001) ("Commission precedent on this issue is clear – the Commission has asserted jurisdiction only over those transactions that result in the physical delivery of electricity"); *Morgan Stanley Cap. Grp., Inc.*, 69 FERC ¶ 61,175, at p. 61,696 (1994) (holding that transactions "in which the actual delivery of electricity, while contemplated in the contract, is not undertaken" need not be included in quarterly reports of jurisdictional transactions, which instead are limited to "those transactions that result in the actual delivery of electricity"), *reh'g denied*, 72 FERC ¶ 61,082 (1995).

<sup>52</sup> See Preliminary Findings Letter at 13.

<sup>53</sup> 16 U.S.C. § 824v(a).

<sup>54</sup> *Sebelius v. Cloer*, 133 S. Ct. 1886, 1893 (2013) (citation omitted); *accord Koshman v. Vilsack*, 865 F. Supp. 2d 1083, 1092 (E.D. Cal. 2012).

members or owners.”<sup>55</sup> The plain meaning of “entity” and therefore its usage in the FPA is clear: Section 222 covers organizations, not individuals.<sup>56</sup>

Congress’ usage of “entity” elsewhere in the FPA confirms that Congress intended the term to have its ordinary meaning in the statute. In various provisions throughout the Energy Policy Act of 2005,<sup>57</sup> the legislation that contained section 222, the term “entity” describes or refers to organizations, groups, institutions, associations, or businesses, but not to individuals.<sup>58</sup> Moreover, several sections expressly refer to “individuals” and “entities” separately in disjunctive and conjunctive phrases, providing further evidence that Congress did not intend for “entity” to include both organizations and individual persons.<sup>59</sup> Congress thus used the term “entity” in its ordinary, plain meaning when enacting section 222.<sup>60</sup>

Congress’ statutory authorization defines the limits of FERC’s authority to regulate manipulation. FERC, adhering to Congress’ intent, promulgated the Anti-Manipulation Rule using the term “entity.” Despite the fact that FERC’s Anti-Manipulation Rule does not define “entity,” FERC has attempted to unilaterally expand that authority by comments accompanying the promulgation of the Final Rule suggesting that “entity” is a “deliberately inclusive term” that includes natural persons.<sup>61</sup> But this interpretation conflicts with Congress’ language and the plain

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<sup>55</sup> Black’s Law Dictionary 612 (9th ed. 2009); *Samantar v. Yousuf*, 560 U.S. 305, 315 (2010) (citing Black’s definition favorably and stating that the term “‘entity’ typically refers to an organization, rather than an individual”); *Am. Dental Ass’n v. Shalala*, 3 F.3d 445, 446 (D.C. Cir. 1993) (concluding that the undefined statutory term “entity” did not include “individual persons”).

<sup>56</sup> *Royal Foods Co. v. RJR Holdings, Inc.*, 252 F.3d 1102, 1106 (9th Cir. 2001) (“If from the plain meaning of the statute congressional intent is clear, that is the end of the matter”).

<sup>57</sup> Pub. L. No. 109-58, 119 Stat. 594 (the “Energy Policy Act”).

<sup>58</sup> See, e.g., Energy Policy Act §§ 1211(a) (defining “regional entity”), 1231 (defining “unregulated transmitting utility”), 1291 (defining “transmitting utility,” “Regional Transmission Organization,” and “Independent System Operator”). In addition to these provisions, which amended the FPA and are codified at 16 U.S.C. §§ 796, 824j-1, and 824o, many other sections of the Energy Policy Act also use the term “entity” to describe groups, organizations, associations, companies, or institutions. See, e.g., Energy Policy Act §§ 706, 791, 942, 944, 945 (defining “eligible entities” in the context of various grant or award programs) (codified at 42 U.S.C. §§ 16051, 16131, 16251, 16253, and 16254, respectively); *id.* §§ 962, 964, 989, 999A-H, 1002, 1505 (listing categories or types of entities, all of which are groups or organizations) (codified at 42 U.S.C. §§ 16292, 16294, 16353, 16371-78, 16392, and 7545(b), respectively).

<sup>59</sup> See, e.g., Energy Policy Act § 133(b), 42 U.S.C. § 15831(b) (“shall invite . . . individuals and entities”), Energy Policy Act § 652(a), 42 U.S.C. § 2169(1)(a)(i) (“shall require each individual or entity”).

<sup>60</sup> See *Morrison-Knudsen Constr. Co. v. Dir., Office of Workers’ Comp. Programs, U.S. Dep’t of Labor*, 461 U.S. 624, 633 (1983) (“[A] word is presumed to have the same meaning in all subsections of the same statute.”).

<sup>61</sup> See Prohibition of Energy Market Manipulation, Order No. 670, FERC Stats. & Regs. ¶31,202, at P 18 (“Order No. 670”), *reh’g denied*, 114 FERC ¶ 61,300 (2006).

meaning of the term.<sup>62</sup> The FPA permits FERC to penalize the manipulative acts of entities, such as businesses and organizations. This authority does not extend to natural persons. Congress' clear intent must be given effect "regardless of the interpretation pressed by the Commission."<sup>63</sup> FERC therefore lacks jurisdiction to assess civil penalties against Dr. Chen.

### CONCLUSION

For the reasons the experts have given, and for the reasons set forth in all of the submissions in this matter, Enforcement Staff should terminate its investigation. Dr. Chen and the other individuals and entities involved already have endured this fundamentally flawed process for far too long. Continuing the investigation would, we submit, be a poor use of the Commission's investigative resources—and one doomed, should it continue, to failure in *de novo* federal district court proceedings. It simply is not fraud to buy a Happy Meal for the toy, whether the toy is part or all of the goal.

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<sup>62</sup> See *Santa Fe Indus.*, 430 U.S. at 472-73 ("The rulemaking power granted to an administrative agency charged with the administration of a federal statute is not the power to make law. Rather, it is "the power to adopt regulations to carry into effect the will of Congress as expressed by the statute." . . . [The scope of the Rule] cannot exceed the power granted the Commission by Congress . . .") (citation omitted).

<sup>63</sup> *Bonneville Power Admin. v. FERC*, 422 F.3d 908, 920 (9th Cir. 2005) (citation omitted); see also *Wolverine Power Co. v. FERC*, 963 F.2d 446, 450 (D.C. Cir. 1992) (dismissing enforcement action because assessment of civil penalties against an unlicensed entity exceeded FERC's statutory authority over "licensees").

Respectfully submitted,

/s/

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cc: Chairman Cheryl LaFleur  
Commissioner Philip Moeller  
Commissioner Tony Clark  
Commissioner Norman Bay  
David Morenoff  
Larry Gasteiger  
Larry Parkinson  
David Applebaum

Enclosures

## ATTACHMENTS

1. Written Submission to Commission Investigation Staff on Behalf of Dr. Houlian Chen  
(December 13, 2010)
2. Supplemental Submission on Behalf of Dr. Alan Chen  
(March 16, 2012)
3. Response to Preliminary Findings of Enforcement Staff  
(October 9, 2013)

ATTACHMENT 1

Written Submission to Commission Investigation Staff on Behalf of Dr. Houlian Chen  
December 13, 2010

UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION

PJM Up-To Congestion Transactions

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Docket No. IN10-5-000

*WRITTEN SUBMISSION TO COMMISSION INVESTIGATION STAFF  
ON BEHALF OF DR. HOULIAN CHEN*

The Division of Investigations Staff, and ultimately the Commission, soon will face a fork in the road. Taking one course, the Commission could (1) decide that our client, Dr. Houlian Chen and his funds (HEEP Fund and CU Fund), did *not* engage in market manipulation, (2) issue a public report explaining that decision, and (3) terminate the investigation. Taking the other course, the Commission could (a) tentatively decide that our client *did* engage in market manipulation, (b) seek to negotiate a settlement and, failing that, (c) issue a show cause order explaining the Commission's basis for prosecuting the case and directing a response.

We advocate the first course. In support, we offer this submission and an accompanying affidavit from Professor Craig Pirrong, probably the world's leading economist specializing in the analysis of alleged commodity market manipulation. A public report agreeing with our position will fit comfortably within the governing legal and economic principles, and logically flow from prior decisions not to prosecute similarly flawed cases. Such a report will enhance regulatory certainty and help the regulated community comply with the Commission's critical prohibition against market manipulation.

In contrast, the second course—a decision to proceed with market manipulation allegations—is, we respectfully submit, unfounded and unlikely to result in a position that can be rationally articulated in a show cause order or survive *de novo* review in federal district court. Such an unwarranted decision would conflict with prior public enforcement determinations, create regulatory confusion, and—most importantly—be wrong on the merits.

*INTRODUCTION*

One core question that will drive the Commission's choice here involves the propriety of a trader engaging in up-to congestion transactions with the intent of collecting transmission loss credits. As we explain below, Dr. Chen's trades had a legitimate business purpose *beyond* collecting transmission loss credits. For simplicity's sake, however, let us set that aside. Even if we assume *arguendo* that collecting transmission loss credits was the sole objective of Dr. Chen's trading, there would be *nothing wrong* with that course of conduct. Trading to collect transmission loss credits, under the then-existing regulatory regime, was a legitimate business objective. It follows inescapably that there is nothing wrong with Dr. Chen designing trades where this was one, but not the only, objective.

The main reason is that it is rational—and certainly not market manipulation—for a trader to view transmission loss credits as part of the price signal guiding whether and how to transact. After all, no one ever would contend that transmission *charges* are *not* part of the price signal guiding traders. The Commission would never expect a trader to intentionally and repeatedly buy power for \$40/MWh, then sell it for \$45/MWh, while paying \$10/MWh in transmission charges. In fact, because these trades would lose money on a net basis, the Commission might well be concerned about whether they were part of a downward price manipulation strategy. It would, in a nutshell, be absurd to argue that the trader must disregard transmission charges in deciding whether to transact. Transmission charges necessarily and unambiguously form part of the overall price signal.

The same is true about transmission loss credits. They are directionally different from transmission charges: one adds to revenue, while the other subtracts from it. But both affect the ultimate price signal in equivalent ways. Professor Pirrong explains this point at length in his

affidavit, grounding his opinion in decades of examples spanning a wide range of commodities markets **CITE AFF.**<sup>1</sup>

The Commission, in fact, recognized the incentive properties of transmission loss credits when it first addressed their allocation within PJM. The credits themselves arise because the Commission has specified that transmission customers should pay transmission rates that charge for losses on a marginal, not average, basis. These marginal loss charges send a more efficient price signal for supply to locate closer to load, but they also create an over-recovery of costs system-wide. When deciding how to allocate this surplus, the Commission avoided allocating the credits to transmission customers in a way that would offset the marginal price signal created by paying marginal loss charges.<sup>2</sup> And when the Commission decided to allocate transmission loss credits to financial traders engaging in up-to congestion transactions, it did so, in part, because that outcome would *not* undercut the price signal sent by paying marginal loss charges.<sup>3</sup> This reasoning necessarily recognizes the obvious fact that *receiving* transmission loss *credits*

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<sup>1</sup> A credit in the power-market context might, or might not, be part of the RTO settlement system. One non-RTO example is “Renewable Electric Certificates,” or “RECs,” which can be made available to renewable generation under certain state programs to incentivize renewable energy. These payments necessarily supplement revenues available in wholesale power markets, and they do so for the *precise purpose* of affecting commercial decisions. Depending on the circumstances, a renewable generator can sell energy and earn two payment streams: LMP and a per-MWh payment from selling RECs. In that circumstance, the profitability of the transaction can be determined by totaling the two payment streams and comparing them to production costs. The undersigned actually was consulted several years ago about just such a case. LMPs were higher in New York than in New England, so one would not expect anyone to sell power from New York to New England. But REC revenue could be earned by engaging in such a transaction, and that revenue was enough to make the transaction profitable on an overall basis. Given the sensitivity at the time about alleged selling below cost (in the wake of the *Energy Transfer Partners* case), the client ran the scenario by the Division of Investigations Staff. Staff’s answer, quite correctly, was that it was fine to engage in such transactions.

<sup>2</sup> See *Black Oak Energy, LLC v. PJM Interconnection, L.L.C.*, 128 FERC ¶ 61,262 at P 31 (2009).

<sup>3</sup> See *Black Oak Energy, L.L.C. v. PJM Interconnection, L.L.C.*, 131 FERC ¶ 61,024 at P 33 (2010).

will affect commercial decision-making, just like *paying* transmission loss *charges*. They each are the flip side of the same coin.

As long as the size of these credits is small, the effect on the overall price signal also is small, and any resulting changes in commercial decisions probably will be minor. But as we now know, that was not the case here. Here the size of the credits sometimes was very large—large enough not only to *equal* but to *substantially exceed* the total transmission and administrative charges that PJM levied on up-to congestion trades. We strongly suspect that the Commission never envisioned this counterintuitive outcome. It makes no sense, from a policy perspective, to pay people, on a net basis, to take transmission service from PJM, rather than have people pay PJM for that service. But that is exactly what happened here.

Viewed from this perspective, it was inevitable that transmission loss credits would change incentives, and thus change decisions made by market participants. As noted below, Dr. Chen did not seek out the transmission loss credits; when he first received them he was not sure what they were. But over time, he reacted to them just like other components of the price signals sent by the market. Dr. Chen thus did seek to make money from transmission loss credits. But that is precisely the type of trader conduct the Commission found to be entirely legitimate in the *Lake Erie Loop Flow* investigation.<sup>4</sup>

Recalling our prior discussions, it is as if cab drivers in Washington D.C. started giving rebates, in varying amounts, to each of their customers. If the rebate for a \$5 ride typically fluctuated between \$1 and \$3, people would take cabs more and use the Metro less. If customers sometimes got back \$10 when they took a cab ride costing \$5, they would take cabs even more.

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<sup>4</sup> See *New York Indep. Sys. Operator, Inc.*, 128 FERC ¶ 61,049 (2009) (“*Lake Erie Loop Flow*”), *order granting clarification*, 128 FERC ¶ 61,239, *order on compliance*, 132 FERC ¶ 61,031 (2010).

And if some customers began seeing ways to forecast, albeit imperfectly, when the rebates would be greater than the fares—such as when temperatures were high—they would take cabs in all sorts of situations, even going in a circle. Other customers might not materially change their cab-riding practices in any outwardly discernable way, but they still obviously would take this new rebate scheme into account when deciding whether and when to take a cab. The rebates would become integral to the economics of taking cabs.

Stepping back from it, such a system would make no sense. But one could scarcely blame the customers taking the cabs. The answer, instead, as Professor Pirrong explains, Affidavit of Dr. Craig Pirrong at ¶ 45 (Dec. 8, 2010) (“Pirrong Aff.”), attached hereto as Appendix A, is to change the system itself. We are, as the Office of Enforcement perceptively put things in the *Blumenthal* case, dealing with “the unintended consequences of an imperfect market design.”<sup>5</sup> Now that these unintended consequences have surfaced, the market design should be changed. And that is exactly what the Commission has done here. It already has approved changes to PJM’s tariff, so that virtual up-to congestion transactions neither (1) pay for transmission service nor (2) receive transmission loss credits. *PJM Interconnection, L.L.C.*, 132 FERC ¶ 61,244 at PP 44-45 (2010). For its part, PJM is revisiting the transmission loss credit scheme to reduce the overall level of over-collections. *See id.* at P 49; *PJM Interconnection, L.L.C.*, Tariff Filing, Docket No. ER10-2280-000 at 13 (Aug. 18, 2010) (“August 18, 2010 Tariff Filing”). And that, we submit, should be the end of the matter.

Any contrary conclusion would require traders to look behind each component of the overall price signal to determine whether policy considerations somehow might counsel in favor

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<sup>5</sup> *Blumenthal v. ISO New England Inc.*, Docket Nos. EL09-47-000 and EL09-48-000, Initial Post-Hearing Brief of Enforcement Staff at 1 (June 17, 2010) (“*Blumenthal*, Staff Initial Brief”).

of *excluding* that particular component from the analysis of whether and how to transact. As Professor Pirrong explains, that would be an unwise and inefficient regulatory approach, fraught with baroque compliance and enforcement complications. Pirrong Aff. at ¶ 45. But if the Commission nevertheless were to adopt such a counterintuitive rule, certainly it would need to do so *expressly* and *in advance*.

That never happened here. No express tariff provision, PJM pronouncement, or Commission order ever alerted Dr. Chen that it was unlawful to trade with the intent of profiting from transmission loss credits. To the contrary, the relevant tariff language provided for transmission loss credits to be paid to anyone who incurred transmission charges. There was no indication whatsoever that traders were forbidden from developing trading strategies seeking to collect these credits. And in the absence of any such express rule, the obvious default position for a trader is that payments, of whatever type, *can* and *should* be considered as part of the profit motive for engaging in transactions. Reflecting this, the underlying Commission orders are, as explained above, based on the plainly correct assumption that the payment of loss credits *will* affect commercial decision-making.

This means that, just as in *Blumenthal*—a case we discuss in detail below—any allegation of market manipulation against Dr. Chen necessarily requires us to assume the existence of some sort of unwritten rule against trading to profit from transmission loss credits. And as both the Presiding Judge and Enforcement did in *Blumenthal*, here we should categorically reject any effort to claim violations of “unwritten” rules. The tariff language on allocation of transmission loss credits is express. Nothing in that language—or anywhere else—prohibited traders from seeking to profit from transmission loss credits. And the filed rate

doctrine precludes the Commission from imposing a contrary rule after the fact. So does the Due Process Clause of the United States Constitution, as reflected in the venerable fair notice doctrine.

We are not advocating an analytical approach where the Commission must specifically prohibit a particular course of conduct, in advance, in order for that conduct to constitute market manipulation. The rule against market manipulation obviously can be violated by a course of conduct that is not expressly anticipated and prohibited. That is why the relevant rules are written rather broadly. But as relevant here, they irreducibly require the Commission to identify fraudulent conduct in order to find market manipulation.

Here there was no fraud, and no market manipulation. Dr. Chen's trades did not violate any law, rule, or tariff. They were made openly. There was no fraud, artifice or deceit, no hidden agenda. The trades had economic substance on a stand-alone basis; they did not depend on other trading positions for their profitability. They did not create artificial pricing, either through the exercise of market power (which was non-existent here) or otherwise. None of the recognized hallmarks of a fraudulent or manipulative scheme is present.

In particular, the trades were not wash trades. Wash trades by definition make no money. They may make related positions, such as derivatives positions, profitable, but on a stand-alone basis they are a nullity—an empty act. Because they have no reason to exist on a stand-alone basis, they typically are part of some artifice to make money in some other fashion.

The particular “paired” trades at issue sometimes made money and other times lost money; they were never, however, a wash. It is true that, as things turned out during the brief time period at issue, Dr. Chen's aggregate profits came from PJM's aggregate transmission loss credits. But there still were profits. And it is *per se* wrong to contend that paired trades that are profitable on their face somehow are wash trades. Wash trades cannot make money on their own

bottom. The fact that Dr. Chen’s “paired” trades made money thus is proof positive that they are not wash trades.

To argue otherwise is to advocate a wash trade analysis that requires traders to parse the particular elements of cost and revenue involved in each specific set of transactions and to decide which ones “count” as a legitimate price signal. We are not aware of any case, in any forum, adopting this framework for defining a wash trade. As noted above, perhaps if PJM’s tariff expressly precluded traders from trading in order to earn transmission loss credits, cautioning that they somehow were not part of the “fundamentals” and could not be considered when deciding whether and how to transact, there might be a way to get past the “profitability” hurdle in any wash trade analysis. But this brings us back to the fallacy of asserting “unwritten” rules, because the tariff did not contain any such fair warning.

Even if we set the profit point aside, however, the paired trades were not wash trades because they did not offset each other. When Dr. Chen engaged in up-to congestion transactions going back and forth between two trading points, he took directionally different congestion positions that do not offset. If congestion exceeded the \$50/MWh “cap” in one direction, it mathematically could *not* exceed the cap going in the other direction. For this reason, this strategy posed a risk of loss. Not only might the transmission loss credits fail to outweigh the PJM transmission and administrative overhead charges, but one leg of a paired trade might not clear, because congestion exceeded the (typically \$50/MWh) cap.

Also for this reason, this strategy created the possibility of reward—not just through the credits, but also independent of them. As Dr. Chen explained in his deposition, and as Professor Pirrong explains in his affidavit, the paired trades essentially created an “out of the money” call option that could prove highly profitable. *See Pirrong Aff. at ¶ 31.* If, for example, the “inbound

to PJM” leg failed to clear, that would mean that day-ahead LMPs at the PJM point were more than \$50/MWh higher than day-ahead LMPs at the relevant MISO point. This would mean that moving into real time, the trade was more than \$50/MWh in the black, with the potential for high profits if the price spread were to narrow in real time (a very real prospect, as system operators bring additional resources on line and arbitragers come to the fray). While not likely, Dr. Chen had seen congestion patterns play out this way in the past. And if they were to recur when Dr. Chen had a paired trade in place, the results could be extremely profitable. Similar “out of the money” financial trades are, as Professor Pirrong explains, common in financial and commodity markets, and are entirely legitimate. *See id.* at ¶ 22.

At the end of the day, concerns about Dr. Chen’s trading rest solely on the unwarranted claim that he violated some unwritten rule against trading to earn transmission loss credits. But unwritten rules do not govern this case, and alleged violations of unwritten rules cannot constitute market manipulation. The Commission therefore should terminate this investigation.

#### *FACTUAL BACKGROUND*

In this background section, we begin with an overview of up-to congestion trading and transmission loss credits. We then move to a discussion of Dr. Chen’s trading activities.

##### *I. UP-TO CONGESTION TRADING*

In Appendix B to this submission, we provide a brief overview of up-to congestion trading. In sum, these transactions are a particular form of financial trading that involves the relative spreads between two price points, measured on a (1) day-ahead and then (2) real-time basis. The trader proposes to take a position in the day-ahead market at two price points, one in MISO and one in PJM. There is, however, a condition to the transaction: day-ahead congestion between these two points must be less than a chosen dollar level—”up to” a maximum of

\$50/MWh. When that pricing condition holds, the trade is accepted. The value of the trade then depends on whether the spread between these same two price points widens or narrows in the real-time market. For an up-to congestion trade moving from MISO to PJM, or vice-versa, the trade makes money if the spread widens as we move from the day-ahead market to the real-time market, and loses money if the spread narrows.

## *II. TRANSMISSION MARGINAL LINE LOSS CREDITS*

Although the origins of PJM's two-settlement scheduling system, the computation of marginal transmission line losses, and the allocation of surplus line loss charges go back many years, the features of the PJM transmission line loss credits at issue here were established in 2008 and 2009.<sup>6</sup> In a complaint filed against PJM on December 3, 2007, several virtual energy traders asked the Commission to find that, since they did not flow any actual power on PJM's system, they should not be required to pay for transmission marginal line losses. Alternatively, these parties argued that, if the Commission declined to relieve virtual marketers of that burden, it should find that virtual traders were entitled to a share of transmission line loss credits.<sup>7</sup>

The Commission originally dismissed the complaint in its entirety, but then granted rehearing in part and denied rehearing in part.<sup>8</sup> The Commission affirmed its prior ruling that virtual traders (which it also referred to as "arbitrageurs") in the PJM market should be required to pay marginal line losses. It determined, however, that PJM had not satisfactorily explained why its tariff, which limited the payment of the surplus to network service users only, was just

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<sup>6</sup> See August 18, 2010 Tariff Filing at 2-5.

<sup>7</sup> See *Black Oak Energy, LLC v. PJM Interconnection, Inc.*, Docket No. EL08-14-000 (Dec. 3, 2007). The complainants were Black Oak Energy, LLC, EPIC Merchant Energy, LP, and SESCO Enterprises, LLC.

<sup>8</sup> *Black Oak Energy, LLC v. PJM Interconnection, L.L.C.*, Order Denying Complaint, 122 FERC ¶ 61,208, Order Denying Rehearing in Part and Granting Rehearing in Part, 125 FERC ¶ 61,042 (2008).

and reasonable and not unduly discriminatory, since other PJM services also support the fixed costs of the transmission grid. It directed PJM to either propose a revision to its tariff to include a credit to others who pay for the fixed costs of the transmission system, in proportion to the load represented by their transmission usage, or to show cause why its existing tariff provision was just and reasonable. *Black Oak Energy*, 125 FERC ¶ 61,042 at P 49. The Commission later clarified its order at PJM's request<sup>9</sup> and PJM made its tariff filing on March 26, 2009, requesting an effective date of June 1, 2009.

On September 17, 2009, the Commission accepted PJM's compliance filing, stating in part:

PJM proposes to establish the just and reasonable replacement rate by allocating the marginal line loss surplus to Network Service Users and Transmission Customers (including virtual traders). 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.

*Black Oak Energy, LLC v. PJM Interconnection, L.L.C.*, 128 FERC ¶ 61,262 at P 23 (2009) (emphasis added).<sup>10</sup> As filed, Section 5.5 of PJM's tariff stated:

The total Transmission Loss Charges accumulated by the Office of Interconnection in any hour shall be distributed pro-rata to each Network Service User and Transmission Customer in proportion to its ratio shares of the total

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<sup>9</sup> *Black Oak Energy, LLC v. PJM Interconnection, L.L.C.*, Order On Request For Clarification, 126 FERC ¶ 61,164 (2009).

<sup>10</sup> The Commission reasoned in part that the transmission access charges related to up-to-congestion transactions paid by arbitrageurs or virtual traders "contribute to the fixed costs of the transmission system, and . . . should be included in the allocation process for disbursement of any surplus resulting from the over-collection of transmission line loss charges." *Black Oak Energy*, 128 FERC ¶ 61,262 at P 26.

MWhs of energy delivered to load (net of operating Behind The Meter Generation, but not to be less than zero) in the PJM Region, or the total exports of MWh of energy from the PJM Region . . . , or the total MWh of cleared Up-To Congestion transactions (that paid for transmission service during such hour).

PJM Open Access Transmission Tariff § 5.5 (Third Revised Sheet No. 399C).

In approving section 5.5, the Commission required that the PJM tariff make clear that (1) arbitrageurs or virtual traders that only pay for ancillary services that do not support the fixed costs of the entire transmission system would not be eligible to receive a share of the marginal line loss surplus, and (2) credits to exporters were dependent on them paying for transmission service for a time period that includes the hour, as is required for up-to congestion charges. *Black Oak Energy*, 128 FERC ¶ 61,262 at PP 26-27. PJM made these tariff revisions and the Commission accepted that filing and denied rehearing of its September 17, 2009 order. *Black Oak Energy, LLC v. PJM Interconnection, L.L.C.*, 131 FERC ¶ 61,024 (2010).

### *III. THE TRADING AT ISSUE*

#### *A. Dr. Chen's Background*

Dr. Alan Chen was born and educated in China, receiving his doctorate degree in power engineering from Tsinghua University in Beijing in 1995. He came to the United States on a student visa later that year and has resided in the United States ever since. His current immigration status is as a permanent resident alien, but he is in the process of obtaining United States citizenship. Dr. Chen and his wife currently live in The Woodlands, Texas.

From 1997 to 2007, Dr. Chen was employed by various firms as a power analyst. He generally was responsible for creating and using models to forecast power prices, mainly in the Eastern Interconnection.<sup>11</sup>

*B. Dr. Chen's PJM Trading*

In August 2007, Dr. Chen established Heep Fund, Inc. as a Texas corporation and applied for and received PJM membership. He invested about \$200,000 of his own money in Heep Fund, which started trading mainly up-to congestion trades in September 2007. He was and remains the sole owner and sole employee of Heep Fund.

In the spring of 2008, Dr. Chen entered into an advisory agreement with TFS Capital, LLC. Under the terms of this agreement, he traded for Heep Fund and for TFS (later through a separate TFS fund known as Huntrise). The megawatt volumes of trades that he put on for TFS/Huntrise were determined by the volume of his own trading for Heep Fund and by ratios that varied over time. For example, if Dr. Chen reserved 1 MW of transmission for Heep Fund, he might reserve (depending on the instructions he received from TFS) 4 MW of transmission for TFS/Huntrise (a 1 to 4 ratio). The TFS/Huntrise transactions were put on the same transmission paths Dr. Chen was using for Heep Fund.

From the time he started trading for Heep Fund in September 2007, Dr. Chen's up-to congestion trades took various forms, although, per PJM's requirements, the trades had to

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<sup>11</sup> Dr. Chen worked for Entergy Corporation in The Woodlands, Texas from June 1997 to November 1999 as a power resource planner. He worked for Power Costs, Inc. from December 1999 to March 2000 to expand the computer model for power pricing that he had used at Entergy. He returned to Houston in April 2000 to work at Enron NetWorks, LLC, working on Enron's energy management system. When UBS Energy acquired certain Enron trading operations, he went to work for UBS in Stamford, Connecticut, where he was involved in developing power trading and marketing strategies. He left this position in November 2005 and returned to Houston to work for Merrill Lynch Commodities, Inc., where he was responsible for developing power price forecast models. He left Merrill Lynch in August 2007.

include an interface. In some instances, he would reserve transmission from a point inside of PJM to an interface with the NYISO, MISO, or SOUTHEXP (or vice-versa from an interface with NYISO, MISO, or SOUTHIMP to PJM). These were stand-alone trades. In such cases, Dr. Chen was hoping he could make more money in real-time spreads than he paid for day-ahead spreads (to reserve transmission in the day-ahead market). In other instances, he would reserve transmission from an interface, such as MISO, to Point A in PJM and then reserve transmission from Point B in PJM back to the MISO interface. Here Point A fell into the pocket of nodes where the real-time price tends to be higher than the day-ahead price, whereas Point B fell into the pocket of nodes where the real-time price tends to be lower than the day-ahead price. Dr. Chen was hoping that the combination of day-ahead and real-time spreads would allow him to make money on both legs.<sup>12</sup>

In October 2009, Dr. Chen began to receive transmission loss credits for his allocated share of marginal line losses, and later was credited for refunds for certain past periods—all precisely as the Commission intended and required, and in conformance with the PJM tariff. The pattern of Dr. Chen's trading (types of trades and buses) did not change in any material way at that time. In fact, Dr. Chen's trading volumes in both November and December 2009 were about equal to the average volumes he traded during January through October 2009. Dr. Chen increased the megawatt volume of his trades in February 2010, after he had seen the transmission loss credits amounts he received for October through December 2009, and had received certain

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<sup>12</sup> For example, for the February 27, 2010 flow day, Heep Fund reserved a total of 600 MW of transmission from MISO to COOK in PJM and the same volume of transmission from ROCKPORT in PJM to MISO. Over the entire day of February 27, 2010, Dr. Chen estimated that he made \$305.34 on the MISO to COOK leg and \$251.41 on the ROCKPORT to MISO leg, excluding PJM's charges and refunds. For the entire month of February 2010, Heep Fund's total up-to congestion trades (all trades, all days, and all hours) made a net profit of \$62,869.22, including Heep Fund's allocated share of transmission loss credits.

refunds going back to December 2007, and felt he could better gauge the possible amounts of transmission loss credits.

In the spring of 2010, TFS established a new fund called the Powhatan Energy Fund LLC. In May 2010, Heep Fund and Powhatan Fund entered into a new agreement which, among other things, established a 1 to 20 trading ratio, meaning that for each MWh of up-to congestion transmission Dr. Chen reserved for Heep Fund, he would reserve 20 MWh for Powhatan. Dr. Chen started trading for Powhatan on May 28, 2010 (for May 29, 2010). As he testified in his deposition, Dr. Chen's trades for May 29 and May 30, 2010, lost a substantial amount of money. According to PJM's records, Dr. Chen lost \$19,153 for Heep Fund and \$383,057 for Powhatan on those two trading days combined. These amounts include transmission loss credits.

In reviewing his trades after this experience, Dr. Chen saw that wide spreads between certain points in the day ahead market caused him to pay sufficiently high congestion charges in certain hours that wiped out all profits from other hours and from other points, resulting in net losses. Such wide spreads were not new, but he felt he should find ways of reducing that risk going forward. He decided that, while he would continue to trade as he had in the past, using stand-alone trades and trades involving separate points within PJM, he would supplement those trades by putting on what he called paired trades. For example, he might reserve 20 MW per hour of transmission going from a MISO interface to Dayton (the PJM import leg) and then reserve 20 MW per hour of transmission going from Dayton to MISO (the PJM export leg). We understand that it is these paired trades, which Dr. Chen used from June 1, 2010 through August 3, 2010, that are at issue here.

In fact, not all such trades involved equal MWh volumes. This volume difference exposed Dr. Chen to the possible risk of loss and the possible benefit of profit. In addition, these

trades were not risk free because one leg, typically the PJM import leg, might get rejected (the MISO to Greenland Gap Day Ahead leg for May 30, 2010 was close to being rejected for hours 1400, 1500, and 2000), in which case Dr. Chen bore the risk of losing money in the real-time market, but also had the potential of making money.<sup>13</sup> *See* Pirrong Aff. at ¶¶ 28, 29, 49. Either way, the potential profits or losses could far exceed the amounts of transmission loss credits. The charges that Dr. Chen paid to PJM also varied. For each MW of transmission cleared on the PJM import leg, Dr. Chen would pay PJM \$0.67, as well as additional charges (such as reactive supply and voltage control, and scheduling, system control and dispatch service) that approximated \$0.25 per MW in the aggregate. PJM did not charge for transmission on the PJM export leg, but it did impose the additional charges of some \$0.25 per MW. If the PJM import leg were accepted, Heep Fund and Powhatan Fund would be entitled to a share of transmission loss credits. The amount of the credits could be estimated but was not known in advance; it ultimately might be less than, or greater than, the transmission and administrative charges.<sup>14</sup>

In June 2010, Dr. Chen established a second fund called the CU Fund. As he explained in his deposition, he had noticed in PJM's State of the Market Report for 2009, which was published in March 2010, that the Independent Market Monitor (IMM) had proposed limits on

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<sup>13</sup> According to Dr. Chen's records, Heep Fund had legs rejected for various hours at least on January 22 and July 13, 2008, January 1, 2009, and January 5 and March 24, 2010. Heep Fund also had legs rejected during the June - August 2010 period: on June 24, 2010, and on July 6-8, July 12, and July 16, 2010.

<sup>14</sup> To take a hypothetical example, if the Day Ahead price spread from MISO to Dayton exceeded \$50 per MW, that leg would be rejected. At the same time, given the math, he would stand to make \$50 per MW on the leg from Dayton to MISO. Whether he made a profit or loss, however, depended on the Real Time price spread between Dayton and MISO. If the Real Time spread was -\$20 per MW, Dr. Chen would make \$30 per MW—an amount much more than possible transmission loss credits. But if the Real Time spread was \$60 per MW, he would lose \$10 per MW—again an amount much more than such credits. (This hypothetical does not take into account the PJM charges associated with the MISO to Dayton leg and the Dayton to MISO leg.)

up-to congestion trading in the form of imposing operating reserve charges and eliminating all internal PJM buses for use in up-to congestion trading.<sup>15</sup> Dr. Chen expected to use the CU Fund to engage in other types of trading, possibly including firm transmission rights (FTRs).<sup>16</sup> Dr. Chen first put on trades for the CU Fund on July 16, 2010 for July 17, 2010.

At that time, Dr. Chen was making money on his up-to congestion trades for Heep Fund, and PJM had not yet acted on the IMM's recommendation to substantially change the terms applicable to such trades. Dr. Chen thus began engaging in up-to congestion trades for CU Fund. Upon receiving a telephone call from Dr. Bowring on August 2, 2010, he decided to cease trading for the CU Fund.<sup>17</sup> He also ceased all paired up-to congestion trades.

#### *ANALYSIS*

##### *DR. CHEN DID NOT ENGAGE IN ANY FORM OF MARKET MANIPULATION*

Neither Dr. Chen nor either of his funds engaged in any behavior that would constitute market manipulation. *First*, Dr. Chen did not employ a fraudulent device, scheme or artifice, and did not have the requisite intent to manipulate any market or prices. To the contrary, he was merely responding to the economic incentives regarding transmission loss credits directed and approved by the Commission. *Second*, none of Dr. Chen's trades constituted wash trades

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<sup>15</sup> See Monitoring Analytics, LLC, 2009 State of the Market Report for PJM, Volume 1 at 4 (Mar. 11, 2010). Available at [www.pjm.com/documents/reports/state-of-market-reports/~media/documents/reports/state-of-market/2009/2009-som-pjm-volume1.ashx](http://www.pjm.com/documents/reports/state-of-market-reports/~media/documents/reports/state-of-market/2009/2009-som-pjm-volume1.ashx).

<sup>16</sup> The agreement between Heep Fund and Powhatan Fund expressly prohibited Heep Fund from trading FTRs. CU Fund was not a party to that agreement and hence could trade other products.

<sup>17</sup> On August 2, 2010, Dr. Chen received a call from Dr. Bowring about his large volume, paired trades. Dr. Bowring told Dr. Chen that he did not have the authority to direct Dr. Chen to stop making such trades, but Dr. Bowring indicated that he would not refer the matter to FERC if Dr. Chen stopped making these trades. Dr. Chen told Dr. Bowring that he had already put in his trades for August 3 and that he would not engage in such trades in the future. Thus, starting with the August 4 flow day, Dr. Chen ceased putting on paired trades, ceased all trading for the CU Fund, and reduced the volumes that he reserved for Heep and Powhatan.

because they were of economic substance and had economic risk. *Third*, Dr. Chen did not violate any PJM tariff provision or rule.

A. *The Commission's Anti-Manipulation Rule*

1. *The Rule*

The Commission's anti-manipulation rules for utilities, codified at 18 C.F.R. § 1c.2(a), provide in pertinent part:

- (a) It shall be unlawful for any entity, directly or indirectly, in connection with the purchase or sale of electric energy . . . subject to the jurisdiction of the Commission,
  - (1) To use or employ any device, scheme or artifice to defraud,
  - (2) To make any untrue statement of a material fact or to omit to state a material fact necessary in order to make the statements made, in the light of the circumstances under which they were made, not misleading, or
  - (3) To engage in any act, practice, or course of business that operates or would operate as a fraud or deceit upon any entity.

In Order No. 670, the Commission set forth the elements necessary for application of section 1c.2. The Commission stated that it would act in cases where the complainant proved that an entity:

- (1) used a fraudulent device, scheme or artifice, or made a material misrepresentation or a material omission as to which there was a duty to speak under a Commission-filed tariff, Commission order, rule or regulation, or engaged in any act, practice, or course of business that operated or would operate as a fraud or deceit upon any entity;
- (2) with the requisite scienter; and

- (3) in connection with the purchase or sale of natural gas or electric energy or transportation of natural gas or transmission of electric energy subject to the jurisdiction of the Commission.<sup>18</sup>

In analyzing Part 1c.2 and the elements necessary to sustain a claim of manipulation, the Commission has analogized to SEC rule 10b-5.<sup>19</sup>

2. *A fraudulent device, scheme or artifice or material misrepresentation or material omission*

The first element of the anti-manipulation rules requires the Commission to demonstrate, by a preponderance of the evidence, that the market participant either employed a fraudulent device, scheme or artifice or made a material misrepresentation or material omission when it had a duty to disclose. The Commission considers two aspects when determining whether the participant used a fraudulent device, scheme or artifice: (i) whether the market participant was deceptive, and (ii) whether the market participant acted fraudulently or employed a fraudulent device, scheme, or artifice. *Lake Erie Loop Flow*, Docket Nos. ER08-1281-000, Enforcement Staff Report at 21 (June 10, 2009) (“*Lake Erie Loop Flow*, Staff Report”).<sup>20</sup> With regard to

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<sup>18</sup> *Prohibition of Energy Mkt. Manipulation*, Order No. 670, FERC Stats. & Regs. ¶ 31,202 at P 49, 52-53 (“Order No. 670”), *reh’g denied*, Order No. 670-A, 114 FERC ¶ 61,300 (2006).

<sup>19</sup> *Id.* at P 32.

<sup>20</sup> The *Lake Erie Loop Flow* Staff Report was adopted by the Commission. *See Lake Erie Loop Flow*, 128 FERC ¶ 61,049 at P 1. In the *Lake Erie Loop Flow* case (“loop flow” means the difference between scheduled and actual flow on a path or interface), NYISO alleged that certain market participants were engaging in inter-control area transactions that allegedly exploited a seam in the pricing methods used by NYISO, PJM, MISO, and Ontario’s Independent Electricity System Operator. NYISO claimed that these market participants were disguising the true source or sink of the schedules at issue, and that the schedules resulted in physical flows substantially at variance from scheduled flows. It contended that the pricing seam it identified could result in market inefficiencies, and stated its belief that the scheduling transactions might violate the Commission’s rule against market manipulation. In response, the Commission directed that its Office of Enforcement (“OE”) conduct a non-public investigation into these allegations. *Id.* at P 2.

In its report, which the Commission adopted in full, OE concluded that the uplift (an additional NYISO payment to compensate entities whose revenues from locational marginal prices did not fully cover their as-bid costs) experienced by NYISO’s customers between January 1, 2008 and July 22, 2008,

(cont'd)

deception, the Commission noted in *Lake Erie Loop Flow* that a participant might engage in market manipulation by concealing an aspect of its trade. *Lake Erie Loop Flow*, Staff Report at 21. However, the Commission found that where transactions are openly placed and system operators can see accurate, identifying information regarding the transaction, a market participant cannot be found to have concealed the transaction. *See id.* at 22 (finding “there was no deception or misstatement involved” where transactions “were openly placed on the [] system and scheduled on a [NERC] tag” clearly “show[ing] the source, sink and intervening transmission.”); *Blumenthal v. ISO New England*, 132 FERC ¶ 63,017 at P 77 (2010) (citing *Lake Erie Loop Flow*).<sup>21</sup> “[A]bsent deception or concealment, there is no fraud,” and thus, no manipulation. *See Blumenthal*, Staff Initial Brief at 18, 35.

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was due, in substantial part, to: (i) the lack of seams coordination among the NYISO and neighboring RTOs; (ii) the incentives created by certain proxy bus pricing changes that the NYISO put into effect in 2007; and (iii) NYISO’s methodology for incorporating loop flow in its day-ahead modeling. *See id.* at P 3; *Lake Erie Loop Flow*, Staff Report at 6-11. OE further concluded that “the circuitous schedules . . . were openly placed as an economic response to price signals and did not constitute a fraudulent device, scheme or artifice,” and that market participants are not well situated to predict or otherwise identify loop flow effects in real time. *Lake Erie Loop Flow*, 128 FERC ¶ 61,049 at P 3. The OE Report concluded “that the market participants responsible for these scheduling practices did not commit any tariff violations or violate the Commission’s anti-manipulation rule.” *Id.*

<sup>21</sup> *Blumenthal* arose out of what the OE referred to as “an imperfect market design.” *Blumenthal*, Staff Initial Brief at 1. At the time, ISO-NE paid external capacity importers a premium over the prices paid by NYISO for installed capacity. These premiums made it economically attractive for NYISO suppliers to offer their fixed capacity to ISO-NE (as opposed to NYISO) at prices nearing ISO-NE’s tariff cap of \$1,000/MWh. Simultaneously, the suppliers placed export bids in NYISO at the lowest possible price. These price offerings meant that the suppliers virtually would never be called upon to provide New England with any energy and, even if they were, they would likely be unable to provide the required energy due to the fact their NYISO export bids would likely not clear NYISO’s markets. Regardless, the suppliers still received capacity payments from ISO-NE during this time for being theoretically available to provide energy to the ISO. Based on these circumstances, Connecticut alleged that the suppliers’ offers were fraudulent under section 1c.2, asserting that the suppliers had the specific intent to manipulate the market because they failed to disclose to ISO-NE that their NYISO export bids would likely not clear the NYISO market, and thus, if called upon in the ISO-NE market, they would like be unable to meet their obligations. The OE and Judge Young disagreed. Instead, both found that the suppliers were merely rationally responding to the market conditions created by ISO-NE. *Blumenthal*, 132 FERC ¶ 63,017 at PP 111-12; *Blumenthal*, Staff Initial Brief at 35-36.

Determining whether the market participant acted fraudulently or employed a fraudulent device, scheme, or artifice is a question of fact to be determined by considering all of the circumstances. Order No. 670 at P 50. The Commission has defined fraud as “any action, transaction, or conspiracy for the purpose of impairing, obstructing or defeating a well-functioning market.”<sup>22</sup> *Id.* In considering whether an entity has engaged in such conduct, the Commission considers whether a participant is responding to existing conditions in a market that presents pricing incentives or whether the participant is acting against his economic interests or attempting to artificially affect prices. *See Lake Erie Loop Flow*, Staff Report at 21.<sup>23</sup>

Accordingly, market manipulation cannot be found simply on the basis of a market participant having the motive and opportunity to limit risk and maximize profit.<sup>24</sup> On the contrary, the Office of Enforcement (“OE”) recently argued—and Judge Young agreed—that a market participant does not employ a fraudulent device, scheme or artifice when it rationally responds to economic incentives and risks created by the market, even when that market may have a flawed design. *See Blumenthal*, 132 FERC ¶ 63,017 at P 111; *Blumenthal*, Staff Initial Brief at 3; *see also Lake Erie Loop Flow*, Staff Report at 20 (stating that a market participant’s

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<sup>22</sup> Fraud is “[a] knowing misrepresentation of the truth or concealment of a material fact to induce another to act to his or her detriment . . . [or] [a] misrepresentation made recklessly without belief in its truth to induce another person to act.” *Black’s Law Dictionary* 731 (9th ed. 2009).

<sup>23</sup> *See also DC Energy, LLC v. H.Q. Energy Services (U.S.), Inc.*, 124 FERC ¶ 61,295 at 62,658 (2008) (legitimate transactions designed to hedge risk do not constitute fraud); *SEC v. Masri*, 523 F. Supp. 2d 361, 367 (S.D.N.Y. 2007) (citing *GFL Advantage Fund, Ltd. v. Colkitt*, 272 F.3d 189, 205 (3d Cir. 2001) (When reviewing a party’s conduct, one must distinguish between legitimate trading strategies intended to anticipate and respond to prevailing market forces and trading strategies designed to manipulate prices and deceive purchasers and sellers.)).

<sup>24</sup> *See Burman v. Phoenix Worldwide Indus., Inc.*, 384 F. Supp. 2d 316, 332-33 (D.D.C.) (In a § 10(b) case, the court found that allegations of profit motive based on a defendant’s attempt to minimize risk and maximize profit are insufficient to show manipulative intent.); *In re Interbank Funding Corp. Sec. Litig.*, 329 F. Supp. 2d 84, (D.D.C. 2004) (“[C]ourts have rejected motive-and-opportunity allegations of scienter anchored merely in a defendant’s profit motive . . .”) (subsequent history omitted).

ability to pinpoint and capitalize on price incentives “simply *exposed* rather than *created* a market inefficiency”) (emphasis in original). OE thus concluded that the market participants placing the schedules at issue did not commit any tariff violations; instead these participants were openly responding to price signals, were not artificially affecting those signals, were not deliberately affecting congestion in order to raise prices, and did not commit market manipulation. *Blumenthal*, Staff Initial Brief at 34. OE aptly relied upon and quoted the Commission’s decision in the *Lake Erie Loop Flow* case, stating that “the existence of a pricing incentive is suggestive of the *lack* of a fraudulent device, scheme or artifice, and is indicative instead of market participants responding to existing prices, rather than artificially affecting them.” *Blumenthal*, Staff Initial Brief at 20 n.94 (emphasis in *Lake Erie Loop Flow*). *See also* Pirrong Aff. at ¶¶ 37-44.

In the absence (as here) of any fraudulent device, scheme or artifice, the first element of the anti-manipulation rules requires the Commission to show that the market participant made a material misrepresentation or a material omission of fact that he had the duty to disclose (an allegation that, to our knowledge, is *not* being made here). A material omission is made when the participant “omit[s] to state a material fact necessary in order to make the statements made, in the light of the circumstances under which they were made, not misleading,” and the participant has a duty to disclose. 18 C.F.R. § 1c.2. In Order No. 670, the Commission carefully specified how a duty to disclose arises in the context of an anti-manipulation claim, stating that this duty must be provided in a Commission-filed tariff, Commission order, rule or regulation. Order No. 670 at P 49. As the Commission further emphasized:

Well-settled case law interpreting Section 10(b) and Rule 10b-5 makes clear that Section 10(b) and Rule 10b-5 do not, by themselves, create an affirmative duty to disclose absent a relationship of trust and confidence (i.e., a fiduciary relationship) or some other duty imposed elsewhere in the securities laws.

Therefore, in the arm's-length, bilateral negotiations that are typical in wholesale energy markets, absent some tariff requirement or Commission directive mandating disclosure, the Final Rule imposes no new affirmative duty of disclosure.

*Id.* at P 35 (footnote omitted).

Under SEC Rule 10b-5, for a statement or omission to be actionable, it must be misleading. *Basic Inc. v. Levinson*, 485 U.S. 224, 239 (1988). Silence, absent a duty to disclose, is not misleading, and therefore not actionable. *Chiarella v. U.S.*, 445 U.S. 222, 228 (1980) (holding that petitioner had not violated § 10(b) where he was under no affirmative duty to disclose the information before trading).<sup>25</sup> Like the Commission, courts have found that a duty to disclose under Rule 10b-5 arises from a fiduciary relationship of trust and confidence between the parties to the transaction. *SEC v. Zandford*, 535 U.S. 813, 822 (2002); *United States v. O'Hagan*, 521 U.S. 642, 653 (1997); *Chiarella v. U.S.*, 445 U.S. at 230. Judge Young, analogizing to Rule 10b-5, similarly found that under section 1c.2, silence alone does not create a material omission; there must be a duty to disclose. *Blumenthal*, 132 FERC ¶ 63,017 at P 78.

### 3. *Scienter*

Even if one or both of the requirements discussed above has been met, a market manipulation complainant also must demonstrate that the participant had “scienter.” The term scienter, for purposes of the Securities Exchange Act of 1934, refers to “knowing or intentional misconduct . . . conduct designed to deceive or defraud investors by controlling or artificially

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<sup>25</sup> See also *Desai v. Deutsche Bank Sec. Ltd.*, 573 F.3d 931, 939 (9th Cir. 2009) (In a suit alleging violations of § 10(b), the court found that a party cannot be held to have omitted material information unless he had a duty to disclose this information to the party supposedly harmed by the omission.); *In re Goodyear Tire & Rubber Co. Secs. Litig.*, No. 88-8633, 1993 U.S. Dist. LEXIS 5333, at \*16 (E.D. Pa. April 22, 1993) (In determining liability under section 10(b), court held “[a]s a matter of law, silence is not misleading in the absence of a duty to disclose information.”).

affecting the price of securities.” Order No. 670 at P 52 & n.106 (quoting *Ernst & Ernst v. Hochfelder*, 425 U.S. 185, 197 (1976)); *see also Blumenthal*, 132 FERC ¶ 63,017 at P 108.

In *Hochfelder*, the Supreme Court specified that scienter *cannot* be established without demonstrating an “intent to deceive, manipulate, or defraud.” 425 U.S. at 193.<sup>26</sup> The Commission has observed that, like the securities laws on which it is based, the scienter requirement of section 1c.2 is “intended to proscribe knowing or intentional misconduct.”<sup>27</sup> In other words, to have specific intent to manipulate the market, the participant must design his actions to deceive or defraud the market. *Blumenthal*, 132 FERC ¶ 63,017 at P 108.<sup>28</sup> The requisite intent—for purposes of scienter—cannot merely be to increase earnings and decrease risk by responding to market incentives, for such behavior demonstrates an intent to respond as a rational economic player, not an intent to manipulate the market. *See id.* at P 111. Scienter also may be established by proving recklessness, which the Commission defines as “an extreme departure from the standards of ordinary care . . . which presents a danger . . . that is either known to the [actor] or is so obvious that the actor must have been aware of it.”<sup>29</sup>

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<sup>26</sup> *See also Aaron v. SEC*, 446 U.S. 680, 686 (1980) (“The term ‘scienter’ is used throughout this opinion, as it was in *Ernst & Ernst v. Hochfelder* . . . to refer to ‘a mental state embracing intent to deceive, manipulate, or defraud.’”). This principle arises from the 1934 Act itself and its legislative history. *See* H.R. Rep. No. 73-1383 at 20 (1934) (stating that under the Exchange Act, “if a person is merely trying to acquire a large block of stock for investment, or desires to dispose of a big holding, his knowledge that in doing so he will affect the market price does not make his action unlawful. His transactions become unlawful only when they are *made for the purpose* of raising or depressing the market price.”) (emphasis added).

<sup>27</sup> Order No. 670 at P 52 & nn.106-07 (quoting *Ernst & Ernst v. Hochfelder*, 425 U.S. at 197, and *Aaron v. SEC*, 446 U.S. at 690).

<sup>28</sup> In *Blumenthal*, Judge Young defined the scienter required for a market manipulation claim as “specific deceitful or fraudulent intent or recklessness.” *Blumenthal*, 132 FERC ¶ 63,017 at P 113.

<sup>29</sup> *Lake Erie Loop Flow*, Staff Report at 26 (quoting *SEC v. Steadman*, 967 F.2d 636, 641-42 (D.C. Cir. 1992) (other citations omitted)). *See also* Order No. 670 at P 53 & n.109 (describing the recklessness standard and stating that the First, Fifth, Sixth, Tenth, and Eleventh Circuits require a showing of “severely reckless,” while the Ninth Circuit requires a showing of “deliberately reckless”).

In the recent *Blumenthal* case, OE argued that a market participant's rational business decision to maximize profits and minimize risks was not evidence of an intent to manipulate the market. *Blumenthal*, Staff Initial Brief at 58. In his initial decision, Judge Young examined the scienter requirement and agreed with OE:

I accept the proposition that motive and opportunity can lend support to an inference of scienter. I also accept the suggestion that the circumstances here provided [the respondents] with a *possible* motive and opportunity to violate section 1c.2, as well as the potential to reap concrete benefits. I observe, however, that the same circumstances provided *at least an equally possible* motive and opportunity for [the respondents] simply to take rational economic advantage of the prevailing ISO-New England market surplus conditions, market design and rules, thereby reaping identical concrete benefits through legitimate means. I also observe the circumstances that [the respondents] may have “consciously” “intended” to formulate and pursue offer/bid “schemes” that satisfied their Tariff capacity obligations and earned them capacity payments while minimizing the attending economic risks simply constitute a pattern of rational economic behavior if the “scare quote” descriptors are construed in accordance with their non-pejorative meanings. In the absence of misconduct, deceit, fraud or extreme recklessness, the market manipulation defined at 18 C.F.R. § 1c.2 cannot rightfully be inferred merely from knowing or intentional behavior or from a purposeful scheme or strategy evidencing otherwise legitimate objectives.

*Blumenthal*, 132 FERC ¶ 63,017 at P 111 (emphasis in original; footnote omitted). Judge Young thus found that a specific intent to manipulate the market could not be found when the respondents had even the possible motive of responding rationally to market conditions and misconduct, deceit, fraud or extreme recklessness did not exist.

*B. There Is No Evidence that Dr. Chen Committed Any Kind of Fraud or Had the Requisite Scienter*

With these principles in mind, we submit that there is no evidence that Dr. Chen engaged in any fraudulent activity. His trades were carried out openly, and hence he did not engage in any form of fraud or deceit. *Supra* Part I.A.1; *see Blumenthal*, 132 FERC ¶ 63,017 at P 77; *Lake Erie Loop Flow*, 128 FERC at 61,256; *Blumenthal*, Staff Initial Brief at 35; *Lake Erie Loop Flow*, Staff Report at 21; Pirrong Affidavit at ¶ 35. He engaged in conduct that was expressly

permitted under PJM's tariff, as directed and approved by this Commission. *See* August 18, 2010 Tariff Filing at 5. The fact that PJM has now changed its tariffs—with the Commission's approval—is powerful evidence that Dr. Chen's conduct was consistent with the tariffs in effect when Dr. Chen was involved in up-to congestion trading in PJM. All Dr. Chen did was respond to the economic incentives in effect at the time. And this conduct cannot be viewed as fraud. *See Blumenthal*, Staff Initial Brief at 3; *Lake Erie Loop Flow*, Staff Report at 20; Pirrong Affidavit at ¶ 37.

Similarly, there is no evidence that Dr. Chen had the requisite scienter to prove market manipulation. His objective was to lower his risks and increase his gains by utilizing the transmission loss credits available to him, a desire that the Commission and OE have previously found does not prove scienter. *Supra* Part I.A.2; *see Blumenthal*, 132 FERC ¶ 63,017 at P 111. There thus is no evidence Dr. Chen had any desire to deceive the market or that he engaged in reckless trading.

*C. PJM's Allegations of Market Manipulation Are Either Irrelevant, Lack Evidentiary Support, or Both*

Absent evidence of fraud or scienter, there is no basis for any claim of market manipulation by Dr. Chen. We thus could end this submission here. In order to remove any possible grounds for concern, however, we will complete the analysis by rebutting PJM's misplaced and unsupported contentions.

In an August 5, 2010 presentation to the PJM Markets and Reliability Committee, the IMM asserted that, in July 2010, so-called "wheel" transactions—which Dr. Chen never engaged in—cost PJM about \$9 million in transmission loss credits, and so-called "equal and opposite"

transactions cost PJM about \$8 million in transmission loss credits.<sup>30</sup> PJM alleged in its subsequent tariff filing that these alleged wash trades, combined with wheeling transactions, accounted for losses of almost \$19 million over an unspecified period of time. August 18, 2010 Tariff Filing at 6. Subsequently, in a presentation made to PJM's Transaction Issues Task Force on October 26, 2010, the IMM estimated that between May 15 and August 31, 2010, "wheeling transactions" at the same interface profited by about \$3.5 million in loss surplus allocations, and "equal and opposite" transactions profited by about \$2.4 million.<sup>31</sup> At the same time, the IMM added a new category of so-called "but for" transactions, which it claimed profited by about \$1.9 million during the same period. We do not know if all of these varying amounts are intended to be the same and, in any event, we cannot replicate them.<sup>32</sup>

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<sup>30</sup> See Monitoring Analytics, LLC, Virtual Transactions and Marginal Loss Surplus Allocations at 5-9 (Aug. 5, 2010) ("August 5, 2010 IMM Presentation"). Available at [www.pjm.com/~media/committees-groups/committees/mrc/20100805/20100805-item-11-marginal-loss-allocation-issue-monitoring-analytics-presentation.ashx](http://www.pjm.com/~media/committees-groups/committees/mrc/20100805/20100805-item-11-marginal-loss-allocation-issue-monitoring-analytics-presentation.ashx).

The total figures the IMM presented in August 2010 apparently were based on a figure of \$1.85 per MWh, which the IMM said was the on-peak rate of the transmission loss credit for July 2010. (The July 2010 off-peak and average transmission loss credits rates supposedly were \$0.67 and \$1.32, respectively.) *Id.* at 4. The IMM's September 2, 2010 motion to intervene, however, stated that "[t]he loss surplus allocation has, on average during the period from July 1 through July 31, 2010, been \$1.28 per MWh (\$0.66 for the off-peak hours and \$1.59 for the on-peak hours)." See *PJM Interconnection, L.L.C.*, Docket No. ER10-2280-000, Motion to Intervene and Comments of the Independent Market Monitor For PJM at 13 (Sept. 2, 2010). No where does the IMM state the reason for these changes, which presumably would reduce the alleged costs to PJM. We are not in a position to calculate the effect of this change. We note, however, that based on PJM's and Dr. Chen's data, it appears that the average transmission loss credit was in the range of \$1.20-\$1.25 per MW during the period from June 1 through August 19, 2010.

<sup>31</sup> See Monitoring Analytics, LLC, IMM Marginal Loss Allocation Methodology Recommendation at 9, 12 (Oct. 26, 2010) ("October 26, 2010 IMM Presentation"). Available at [www.pjm.com/~media/committees-groups/task-forces/titf/20101026/20101026-item-02b-monitoring-analytics-presentation.ashx](http://www.pjm.com/~media/committees-groups/task-forces/titf/20101026/20101026-item-02b-monitoring-analytics-presentation.ashx).

<sup>32</sup> PJM also asserted in its August 18, 2010 Tariff Filing that "in some cases . . . the source and sink chosen for submission of the Up-To Congestion transaction bore no relationship to the Point-of-Receipt ('POR') and/or Point-of-Delivery ('POD') on the transmission reservation to which it was linked." August 18, 2010 Tariff Filing at 5-6. To the best of Dr. Chen's knowledge, this allegation does not apply to his trades, because the sources and sinks he chose did match the actual PORs and PODs.

As noted above, Dr. Chen never engaged in so-called “wheel” transactions,<sup>33</sup> by which PJM apparently means transactions that, for example, were sourced from outside PJM (e.g., TVA), flowed through PJM, and had a sink outside PJM (e.g., NYISO).<sup>34</sup> And according to PJM’s billing statements, Heep Fund and CU Fund received, net of all charges and credits (including transmission loss credits) about \$1.4 million during the June-August 2010 period for all trades—for a weighted average profit per MW of about \$0.29.

In its August 5, 2010 Presentation, the IMM also claimed that there were three effects of the alleged manipulation that took place during June and July 2010: (1) distorting market outcomes; (2) reducing marginal loss surplus available to other entities; and (3) making it more difficult for other market participants to acquire transmission. These unsubstantiated claims miss the mark and, in any event, cannot convert legitimate business conduct into unlawful market manipulation.

*First*, there is no evidence of which we are aware that Dr. Chen’s up-to congestion trades resulted in any form of market distortion, such as adverse price effects or increased congestion. Certainly there is no evidence that Dr. Chen himself knew of such effects or intended to cause such effects. Without factual support, the IMM’s assertion has no evidentiary value.

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<sup>33</sup> In an internal IMM presentation made to PJM’s Transactions Issues Task Force, the IMM claimed that “[s]ubmitting a set of equal and opposite up to congestion transactions (one import, one export) at buses close enough to each other creates the same effect as a wheeling up to congestion transaction.” October 26, 2010 IMM Presentation at 16. Because Dr. Chen did not engage in what the IMM describes as “wheeling,” we do not know what to make of this allegation. Similarly, we do not understand how the trades put on by Dr. Chen involving different PJM sources and sinks are supposed to create the same effect as a “wheel” transaction.

<sup>34</sup> See August 5, 2010 IMM Presentation at 6. Elaborating on this point, the IMM stated: “Designating an up to congestion wheeling transaction with an import pricing point of SouthIMP and an export pricing point of SouthEXP creates a net zero settlement result as SouthIMP and SouthEXP are modeled the same. Such a transaction has no fundamental economic rationale.” *Id.* at 7. We do not understand this supposed transaction, but we can state that Dr. Chen never used SouthIMP as a source and SouthEXP as a sink as part of one or more transactions.

In *Lake Erie Loop Flow*, Staff Report at 36, Enforcement Staff concluded that “market participants that placed the circuitous schedules of concern here did not intend to impair, obstruct or defeat a well-functioning market . . . .” *Id.* at 5. The Staff pointedly noted that “market participants are not well situated to try and predict loop flow effects in real time, which are dependent on a complex interaction of ever-changing system configurations and schedules.” *Id.* Dr. Chen similarly was not in a position to determine—either before or after the fact—the overall market impact of his virtual trades.

*Second*, there is no evidence that Dr. Chen intended to limit the amount of virtual transmission available to other traders at the points where he traded. No PJM member, including Dr. Chen, has any legal entitlement to up-to-congestion transmission service. If on one day Dr. Chen was able to reserve transmission service and another participant was not, or vice-versa, that would not provide any basis for contending that markets or prices somehow were distorted. And the fact that Dr. Chen might have been reserving service with an eye toward collecting transmission loss credits does not change the analysis, because, as we already have shown, there was nothing wrong with pursuing that specific business objective.

OE’s report in *PJM Interconnection, L.L.C. v. Accord Energy, LLC*, 127 FERC ¶ 61,007 (“*Tower*”), *order on reh’g and clarification*, 129 FERC ¶ 61,010 (2009), is on all fours here. There OE addressed an issue involving the purchase of FTRs, concluding as follows:

Since Power Edge was unable to purchase FTR positions that might have hedged the risk of its counterflow heavy portfolio, its failure to purchase such positions (even if they were ultimately purchased by an affiliate) cannot constitute evidence of any particular intent on Power Edge’s part. Similarly, no nefarious intent can be imputed to the acquisition of such FTRs by affiliated companies, even if they were acquired by the same trader who performed Power Edge’s FTR trading. Under the circumstances, the purchase of such FTRs represented a perfectly rational response to new information and opportunities.

*Tower*, Docket No. EL-08-44-00, Enforcement Staff Report at 37 (“*Tower Staff Report*”).

Likewise, in its *Lake Erie Loop Flow* Report, Staff concluded as follows:

As the actual pricing incentives for [the relevant] transactions suggest (confirmed by the statements of market participants and NYISO’s own conclusions), the purpose for placing the transactions in question was not to obstruct a well-functioning market, but simply to capture price spreads. The market participants did not act against their economic interests or attempt to artificially affect price, which are hallmarks of market manipulation. And the market inefficiencies NYISO complains of were not created by the market participants, but by the price signals themselves (and ultimately by the RTOs designing the price signals).

*Lake Erie Loop Flow* Staff Report at 25 (footnote omitted).

Finally, there is no evidence that Dr. Chen ever intended to take transmission loss credits away from any other PJM member. He did not know how transmission loss credits allocations were made. The Commission itself has found that no entity was entitled to receive any particular amount of transmission loss credits. See *Black Oak Energy*, 125 FERC ¶ 61,042 at P 12 (“[T]he Commission reiterated that no party is entitled to receive any particular amounts through disbursement [of the credit that inevitably results from using the marginal line loss methodology], since the price each is paying (based on marginal line losses) is the correct marginal cost for the energy each is purchasing.”) (citing *Black Oak Energy*, 122 FERC ¶ 61,208 at P 46). In fact, although PJM has now changed its tariff with respect to up-to congestion transactions, the appropriate allocation of transmission loss credits has been litigated at the Commission for years and has yet to be fully resolved.<sup>35</sup>

In its August 18, 2010 Tariff Filing, PJM alleged that the transactions at issue “were inappropriate because they were wash trades that cancelled each other out, and therefore provided no economic benefit to the market, and provided no economic benefit or risk to the

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<sup>35</sup> When the question of what kind of tariff changes should be presented to the Commission, Dr. Chen voted in favor of the PJM position stated in its subsequent August 18 Tariff Filing.

participants involved beyond improperly inflating these participants' share of the loss surplus allocation." August 18, 2010 Tariff Filing at 6. The Commission did not refer to these specific allegations in its August 25, 2010 Investigation Order, but its prior precedent contradicts PJM's allegations.

The Commission has defined the term "wash trades" to mean "pre-arranged offsetting trades of the same product among the same parties, which trades involve no economic risk, and no net change in beneficial ownership." *See Investigation of Terms & Conditions of Pub. Util. Mkt-Based Rate Authorizations*, 103 FERC ¶ 61,349 at P 19, *amended by* 105 FERC ¶ 61,218 (2003), *order on reh'g*, 107 FERC ¶ 61,175 (2004); *accord Enron Power Marketing, Inc.*, 103 FERC ¶ 61,343 at P 61 (2003). *See also SEC v. Colonial Inv. Mgmt. LLC*, 659 F. Supp. 2d 467, 473 (S.D.N.Y. 2009) ("Where the transaction is structured such that there is no legitimate economic purpose or substance to the contemporaneous purchase and sale, no genuine change in beneficial ownership, and/or little or no market risk, that transaction may be a sham transaction . . ."), *aff'd*, No. 09-3503-CV, 2010 WL 2500386 (2d Cir. June 17, 2010).<sup>36</sup> *See also Pirrong Aff.* at ¶ 25 ("A wash trade involves a (near) simultaneous purchase and sale of the same asset or commodity. Wash trades create no exposure to risk of price changes."). The transactions at issue here do not fall within this definition.

Here, although the megawatt volumes involved in Dr. Chen's paired trades might cancel out, that does not, as he testified in his deposition, mean that the trades had no economic substance or risk. *See Pirrong Aff.* at ¶ 33 ("Mr. Chen was engaging in a speculative transaction

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<sup>36</sup> *See also Sala v. United States*, 613 F.3d 1249, 1253-54 (10th Cir. 2010) (analyzing whether a transaction had "economic substance" to determine if it was a sham transaction); *Katz v. Comm'r*, 90 T.C. 1130, 1141 (1988) (describing wash sales as "risk-free transactions devoid of any true economic substance").

that involved taking on risk in exchange for an expected profit.”) If both the import and export legs of paired trades were approved,<sup>37</sup> Dr. Chen bore the risk associated with how the various charges and credits would net out. If one of the legs was rejected, typically the import leg, he bore the spread risk and the risk associated with various charges and credits, but he also was guaranteed to be paid the bid price (the floor) in the day-ahead market on the remaining leg—typically the export leg. *See id.* at P 14. Dr. Chen believed that the paired trades would generally bear minimum risk associated with the netting of the various charges and credits when

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<sup>37</sup> For his up-to-congestion trades, Dr. Chen had to specify the maximum price he was willing to pay for congestion in the day-ahead market. For an export trade, this provided the ceiling he was going to be paid, which in turn created a ceiling of profit for him in the day-ahead market. There was no mechanism in a stand-alone export trade that provided a floor he would be paid in the day-ahead market to hold the position, and take on the associated risk, in the real-time market (which in turn placed a floor of profit for him in the day-ahead market). This meant that, as a trader, Dr. Chen could not use a stand-alone export trade to specify the minimum amount (the floor) he was going to be paid in the day-ahead market to take on the position, and also the associated risk, in the real-time market. In addition, when payments were below the minimum amount, he only wanted to take on minimal risk associated with various charges and credits. The combination of an export leg and an equal-volume import leg provided such a mechanism.

For example, viewing an export trade, Dayton to MISO, by itself, Dr. Chen could only specify the maximum congestion price (limited by PJM at \$50) he was willing to pay in the day-ahead market. Assume the bid price is \$45. If the day-ahead spread is \$10 (day-ahead price of Dayton minus day-ahead price of MISO), he would have the trade approved by PJM, and he would take on the associated risk in the real-time market. If the day-ahead spread is \$35 (day-ahead price of Dayton minus day-ahead price of MISO), he would also have the trade approved by PJM. But since he now is being paid \$35 per MW in the day-ahead market, he would be more willing to take on the associated risk in real-time market. Thus, with an export leg alone, the PJM models would decide how much Dr. Chen would be paid in the day-ahead market. With a stand-alone export trade, there is a ceiling but no floor. If, however, Dr. Chen paired an equal-volume import trade, MISO to Dayton, with the existing export trade, Dayton to MISO, he would automatically create a floor. Assuming the same bid price of \$45, if the day-ahead spread (day-ahead price of Dayton minus day-ahead price of MISO) is not over \$45, both the export and import legs would be approved and he would only take on the risk associated with how the various charges and credits would net out. If the day-ahead spread is over \$45, then the import leg would be rejected and only the export leg would be approved. Now Dr. Chen would be paid \$45 per MW in the day-ahead market, though he would also be carrying the real-time spread risk, and possibility of reward, along with the risk associated with how the various charges and credits would net out. Similarly, with the bid price of \$35, he would take on the real-time spread risk, and possibility of reward, when the day-ahead spread is over \$35. The bid price (of \$45 and \$35) would now become a floor—the minimum profit available in the day-ahead market.

both legs were approved, but would, at times, provide significant upside profit when only one of the legs was approved.<sup>38</sup> As Professor Pirrong explains:

There is another way of seeing this. UTC contracts are a combination of (a) standard “vanilla” spreads in forward contracts and (b) an embedded option. Crucially, the option embedded in the MISO to PJM UTC trade is different than the option embedded in the PJM to MISO trade. Alan Chen’s trading strategy was therefore an option spread transaction. Although the forward contract portions of the two UTC legs of his trades cancelled out, the option portions did not. This left Alan Chen with a contingent price exposure. In contrast, in a wash trade there is no contingent price exposure.

Pirrong Aff. at ¶ 31.

Based on his experience, Dr. Chen knew that price spreads between interfaces (including but not limited to MISO) and various points within PJM could and did exceed the \$50 per MW PJM limit.<sup>39</sup> When that happened, the PJM import leg would be rejected and Dr. Chen could either make or lose money on the day-ahead versus real-time spread on the remaining leg. Dr. Chen expected that the chances of having a leg rejected were small, but they were not zero.

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<sup>38</sup> For example, assume a paired trade, MISO to Dayton and Dayton to MISO, with the bid price of \$45, when the day-ahead prices are \$35 for MISO and \$40 for Dayton. In that scenario, both legs would get approved. This would result in zero spread risk, but Dr. Chen still would bear the risk of how the various charges and credits would net out. If we now assume day-ahead prices are \$35 for MISO and \$90 for Dayton, then the import leg, MISO to Dayton, would get rejected. Dr. Chen then would be left with the export leg alone, and he would be paid \$55 per MW in the day-ahead market for assuming the risk/reward position of this export leg in the real-time market. In Dr. Chen’s view, when day-ahead prices separated by substantial amounts, then the forces of supply and demand, the PJM system, and traders seeking arbitrage opportunities, would respond to the price differential, which then would tend to converge in the real-time market. If the real-time spread in our example turned out to be \$25, with real-time prices of \$45 for MISO and \$70 for Dayton—converging from a day-ahead spread of \$55—Dr. Chen then would make \$30 per MW in the spreads alone. This would be a highly profitable trading position to hold.

<sup>39</sup> As noted *supra*, Heep Fund had legs rejected for various hours in 2008–2010, including during the June 1 through August 19, 2010 period. In addition, Dr. Chen frequently put in up-to-congestion bids at prices below \$50 per MW (e.g., \$25 or \$35 per MW) so that he could limit the day-ahead premium paid to hold his position. For example, for August 3, 2010, Dr. Chen put in 16 trades for Heep Fund, 12 of which were bid below \$50. In other words, Dr. Chen did not simply bid the PJM limit to try to maximize the chances that both legs would be cleared to maximize transmission loss credits. This was consistent with his overall risk profile: look for low-risk, low-reward trades with a high reward potential; avoid high-risk trades even if they had the potential for high-reward.

Moreover, these paired trades had value to Dr. Chen, who received transmission loss credits to reduce his losses or make money, and to PJM, which received transmission charges and other revenues. Also, to the extent Dr. Chen's up-to congestion trades caused prices to move closer together in the day-ahead and real-time markets, they promoted market efficiency.<sup>40</sup> Finally, Dr. Chen made money on these trades. And the fact that, during the period June 1 through August 19, 2010, his profits from paired trades depended on receipt of transmission loss credits does not change the analysis, because, as we established above, there is nothing wrong with that business objective.

In addition, Dr. Chen frequently put in up-to-congestion bids at prices below \$50 per MW (such as \$25 or \$35 per MW), so that he could limit the day-ahead premium paid to hold his position. For example, for August 3, 2010, Dr. Chen put in 16 trades for Heep Fund, 12 of which were bid below \$50. This shows that Dr. Chen was not simply trying to maximize the chances that both legs would be cleared to maximize transmission loss credits. The way to do that would be to bid the maximum \$50 amount all the time. This conduct is consistent with Dr. Chen's overall risk profile: to look for low-risk, low-reward trades with a high reward potential, and to avoid high-risk trades even if they had the potential for high-reward.

In sum, based on all of the facts and circumstances, Dr. Chen did not engage wash trades, or any other form of market manipulation. Just as in the *Lake Erie Loop Flow* case, "[t]he fact that a market inefficiency exists is not, in itself, proof that market participants engaged in market

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<sup>40</sup> See, e.g., *PJM Interconnection, L.L.C.*, 116 FERC ¶ 61,088 at P 18 & n.9 (2006) ("We have found, for example, that virtual trading activities help promote price convergence between the Day Ahead and Real Time Markets and provide other system benefits.") (citing and quoting *ISO New England, Inc.*, 113 FERC ¶ 61,055 at P 30 (2005) ("Arbitrageurs provide important benefits to bid-based markets by helping to ensure that Day-Ahead and Real-Time prices do not diverge significantly, as well as by providing price discovery and liquidity to the market.")).

manipulation.” *Lake Erie Loop Flow*, Staff Report at 20. Dr. Chen did “capitaliz[e] on . . . incentives” created by PJM’s system for allocating transmission loss credits. *Id.* But he “simply *exposed* rather than *created*” whatever market inefficiency existed here. *Id.* (italics in original). He played by the rules that were in place, with no deception or fraud, seeking to maximize his trading profits. And that is lawful conduct.

*D. There Appears to Be No Assertion that Dr. Chen Violated Any PJM Tariff, and in Fact He Did Not Do So*

The Commission’s August 25, 2010 Order initiating this investigation properly does not allege that any entity violated PJM’s tariffs. Nor does PJM claim, in its August 18 filing, that the tariff was subject to any implied conditions not expressly stated in the tariff. There were no violations of PJM’s tariff as written and approved by the Commission. Out of an abundance of caution, however, we note that, as we stated at the outset, Dr. Chen’s conduct cannot be judged by any post hoc, unwritten construction of section 5.5 of PJM’s tariff. Tariffs must be strictly construed, *Blumenthal*, 132 FERC ¶ 63,017 at P 84, and the Commission may not look beyond the plain meaning of the tariff unless its terms are ambiguous. *Nicole Gas Prod., Ltd.*, 105 FERC ¶ 61,371 at P 10 (2003), *vacated on other grounds sub nom. Columbia Gas Transmission Corp.*, 404 F.3d 459 (D.C. Cir. 2005).

In this case, both the Commission and PJM have acknowledged that, under the tariff, “some virtual traders (financial marketers) pay transmission access charges related to Up-To Congestion transactions, which contribute to the fixed costs of the transmission system, and which should be included in the allocation process for disbursement of any surplus resulting from the over-collection of transmission line loss charges.” *PJM Interconnection*, 132 FERC ¶ 61,244 at P 10. Because virtual traders were eligible to acquire transmission loss credits, such traders were “able to clear large volumes of megawatt hours of Up-To Congestion transactions”

and receive “a sizeable allocation of the marginal loss surplus based on the large megawatt hour quantity of cleared transactions.” August 18, 2010 Tariff Filing at 5 (emphasis added).<sup>41</sup> Thus, under the plain language of the tariff, virtual traders who rationally responded to their eligibility for transmission loss credits did not commit any tariff violations. Moreover, even if some form of tariff violation could be established, “tariff violations do not form a sufficient basis for the fraud or scienter necessary for a 1c.2 violation.” *Blumenthal*, Staff Initial Brief at 2.

If the Commission wanted to adopt a counterintuitive rule prohibiting traders from trading to maximize certain parts of the overall price signal shown by the markets, it would need to expressly state that rule in advance. “Where the imposition of penal sanctions is at issue . . . the due process clause prevents . . . validating the application of a regulation that fails to give fair warning of the conduct it prohibits or requires.” *Gates & Fox Co. v. Occupational Safety & Health Review Comm’n*, 790 F.2d 154, 156 (D.C. 1986) (Scalia, J.).<sup>42</sup> Federal courts do not permit an agency to impose civil sanctions unless the regulations at issue are “sufficiently specific that a reasonably prudent person, familiar with the conditions the regulations are meant to address and the objectives the regulations are meant to achieve, would have fair warning of

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<sup>41</sup> In a September 2, 2010 filing, the PJM market monitor observed that “[t]he [2009] revisions to the loss surplus allocation *allowed* market participants to submit virtual transactions for the sole purpose of benefiting from the difference in transmission costs and the per MWh loss surplus allocation.” *PJM Interconnection, L.L.C.*, Docket No. ER10-2280-000, Motion to Intervene and Comments of the Independent Market Monitor for PJM at 13 (Sept. 2, 2010) (emphasis added).

<sup>42</sup> See also, e.g., *Gen. Elec. Co. v. EPA*, 53 F.3d 1324, 1328-29 (D.C. Cir. 1995) (“In the absence of notice—for example, where the regulation is not sufficiently clear to warn a party about what is expected of it—an agency may not deprive a party of property by imposing civil or criminal liability.”); *Phelps Dodge Corp. v. Federal Mine Safety & Health Review Comm’n*, 681 F.2d 1189, 1193 (9th Cir. 1982); *Kropp Forge Co. v. Sec’y of Labor*, 657 F.2d 119, 122-24 (7th Cir. 1981); *Diebold, Inc. v. Marshall*, 585 F.2d 1327, 1335-39 (6th Cir. 1978); *Diamond Roofing Co. v. Occupational Safety & Health Review Comm.*, 528 F.2d 645, 649 (5th Cir. 1976). See generally Jason Nichols, Note, “Sorry! What the Regulation Really Means is . . .”: *Administrative Agencies’ Ability to Alter an Existing Regulatory Landscape Through Reinterpretation of Rules*, 80 Tex. L. Rev. 951, 969-70 (2002).

what the regulations require.” *Freeman United Coal Mining Co. v. Federal Mine Safety & Health Review Comm’n*, 108 F.3d 358, 362 (D.C. Cir. 1997).<sup>43</sup> That was not the case here. There was no express rule against trading to earn transmission loss credits. And it would be unlawful for the Commission to impose such a rule after the fact in this case.

### *CONCLUSION*

For all of these reasons, we respectfully submit that the Division of Investigations, and ultimately the Commission, should conclude that Dr. Chen and his funds did not engage in market manipulation. This decision will stand squarely in line with other decisions not to prosecute trading behavior that others claimed was somehow objectionable. Taken together, these decisions increasingly will present a body of work with tangible logic that accurately tracks the law and reflects sound economic thought. This is an important accomplishment. It offers the regulated community consistent and understandable guidance. It provides a road map for the Division of Investigations to use in future cases. And in a world where other agencies are increasingly falling under the same fraud-based anti-market manipulation regime, it offers valuable precedent cutting across different areas of the law.

In contrast, a decision to prosecute here would, we respectfully submit, create an outlier data point that would confuse both the state of the law and the regulated community. To be sure, given the availability of *de novo* review, that confusion would, in our view, have a defined point of expiration—reversal in federal district court. But even during this locked-in period, the Commission’s growing, and growingly consistent, record of discerning market manipulation

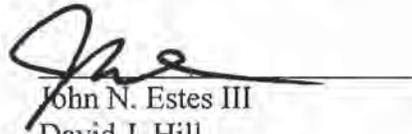
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<sup>43</sup> *Accord, e.g., Stillwater Mining Co. v. Federal Mine Safety & Health Review Comm’n*, 142 F.3d 1179, 1182 (9th Cir. 1998); *Walker Stone Co. v. Sec’y of Labor*, 156 F.3d 1076, 1083-84 (10th Cir. 1998) (quoting *Freeman*, 108 F.3d at 362). *See also Gen. Elec. Co.*, 53 F.3d at 1329 (quoting *Satellite Broad. Co. v. FCC*, 824 F.2d 1, 3 (D.C. Cir. 1987)) (incorporating this requirement into regulatory law).

enforcement would suffer needless damage. The regulated community would receive conflicting guidance from that now conflicting record. And Dr. Chen would unfairly and unlawfully suffer as the target of an unfounded enforcement action.

The better course, as we stated at the outset, is the first.

Respectfully submitted,



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**APPENDIX A**  
**PIRRONG AFFIDAVIT**

UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION

PJM Up-To Congestion Transactions

Docket No. IN10-5-000

**Affidavit of Dr. Craig Pirrong**

**Introduction**

1. I have been retained by Skadden, Arps, Slate, Meagher and Flom, to evaluate the trading activity of Houlian (Alan) Chen in PJM during the April-August, 2010 period. Based on my review of Mr. Chen's trading records, I conclude that his trades were legitimate, and not manipulative in either intent or effect. In particular, his trades were not wash trades.

**Background and Qualifications**

2. I am Professor of Finance, and Director of the Global Energy Management Institute at the Bauer College of Business of the University of Houston. Prior to joining the faculty of the University of Houston in January, 2003, I was the Watson Family Professor of Commodity and Financial Risk Management at Oklahoma State University. I assumed this endowed professorship in 2001 after holding research and teaching positions at the University of Michigan, the University of Chicago, and Washington University. My *curriculum vitae* is attached. It lists all of the publications that I have authored in the last ten years. It also lists cases in which I have testified as an expert at trial or by deposition within the preceding four years.

3. I have researched the economics of financial, futures, and securities markets for most of my academic career. I have published scholarly articles concerning financial, securities and futures markets. I have written articles on the behavior of futures prices, the organization and governance of futures exchanges, and various aspects of futures market regulation, including the regulation of market manipulation.

4. As an academic and consultant, I have been deeply involved for about 20 years in issues relating to commodity futures markets, commodity prices, and the economics of commodity market manipulation. My research has been published in a wide variety of scholarly journals. I have been a peer reviewer for many journals, including the American Economic Review, the Journal of Finance, the Journal of Law and Economics, the Journal of Futures Markets, Economic Inquiry, the Journal of Economic Behavior and Organization, the Journal of Business, and the Journal of Business and Economics Statistics.

5. Much of my research has focused specifically on issues of market manipulation. I have published a book (titled *The Economics, Law, and Public Policy of Market Power Manipulation*), as well as nine economics, finance, and law review articles on this subject.

6. I was the primary author of a study commissioned by the Chicago Board of Trade ("CBOT"), later published as a book titled *Grain Futures Markets: An Economic Appraisal*. That study analyzed the economics of the delivery system for CBOT corn, wheat, and soybean futures contracts, specifically focusing on how to revise that system to make it less vulnerable to manipulation. I recommended the

adoption of a multiple delivery point system, and specifically analyzed the pricing and hedging implications of such a system. A part of this research on multiple deliverable contracts was published in a peer-reviewed journal.

7. In 1992 I was a member of the MidAmerica Institute for Public Policy Research Treasury Securities Market Task Force. This Task Force was formed in the aftermath of the Salomon Brothers squeeze of the two year Treasury note. As a member of the Task Force, I investigated issues relating to microstructure and market power in the market for Treasury Notes and Bonds.

8. I have consulted with commodity exchanges in Sweden and Germany regarding the design of futures contracts, including the design of the delivery mechanisms for wood pulp, European wheat and European pigs. A main objective was to design contracts that were not vulnerable to manipulation.

9. In 1997 and 1998 I served as a member of the CBOT's Grain Delivery Task Force ("GDTF"). This body was charged by the exchange with the responsibility of designing new delivery terms for CBOT corn and soybean futures contracts. Such a redesign was mandated by the United States Commodity Trading Futures Commission ("CFTC") because the old delivery mechanism had become unduly susceptible to manipulation. Among the Task Force's objectives was to design a contract that would tend to prevent and diminish the likelihood of price manipulation. The terms recommended by the GDTF were adopted by a large majority of the CBOT membership, and approved by the CFTC (with some modifications for soybeans) in May, 1998.

10. I provided expert testimony in a case related to market manipulation, *In re Soybean Futures Litigation*, Nos. 89 C 7009, 90 C 11<sup>th</sup> 8 (N.D. Ill. 1995). I have also been retained by the CFTC as an economic expert in a commodity manipulation case and also as an expert in manipulation matters by the Winnipeg Commodity Exchange, pursuant to enforcement actions undertaken by the WCE. In addition, I have provided expert testimony in other manipulation cases, *American Agric. Movement v. Board of Trade*, 848 F. Supp. 814 (N.D. Ill. 1994), *aff'd in part, rev'd in part sub nom. Sanner v. Board of Trade*, 62 F.3d 918 (7th Cir. 1995), and *Kohen v. Pac. Inv. Mgmt. Co.*, 2007 U.S. Dist. LEXIS 56389 (N.D. Ill. 2007). I provided expert testimony in *Energy Transfer Partners, L.P.*, a FERC case. My research has also been cited in a 7th Circuit Court of Appeals decision on manipulation. *Board of Trade v. SEC*, 187 F.3d 713, 724 (7th Cir. 1999) (Easterbrook, J.).

11. In June 2005, I was retained by FERC to make a one-day presentation on the economics, law, and regulation of market manipulation to economists, analysts, and attorneys in the agency's Office of Market Oversight and Investigation. I made this presentation in June 2005.

12. I have testified before the House Agriculture Committee (which has jurisdiction over futures markets and exchanges) on matters relating to an energy market manipulation.

13. I was an invited participant in the Federal Trade Commission's workshop on its proposed oil market manipulation rule.

14. I have taught courses on derivatives (including natural gas futures, forwards, and swaps) at the graduate and undergraduate levels for eighteen years. These

courses have covered the pricing of derivatives instruments, including natural gas derivatives, the use of derivatives for hedging and speculative purposes, and manipulation. I currently teach the PhD course in futures and options in the Bauer College of Business at the University of Houston, and an MBA course in energy derivatives.

15. I have a book on commodity pricing—including the pricing of electricity and electricity derivatives—forthcoming from the Cambridge University Press.

16. I am currently director of the Global Energy Management Institute (“GEMI”) at the Bauer College of Business of the University of Houston. GEMI is a world leader in energy finance education. Moreover, GEMI routinely hosts educational events for energy professionals, including a well-attended energy trading conference held every year.

#### **Analysis of Mr. Chen’s Trading**

17. Prior to 31 May, 2010, Mr. Chen would typically purchase day ahead power in MISO, and sell it day ahead at a point in PJM, such as Mt. Storm. He would simultaneously buy power day ahead at another, geographically proximate point in PJM, such as Greenland Gap, and sell day ahead power into MISO.

18. Mr. Chen traded “up to congestion” (“UTC”) contracts. These contracts have the feature that if based on clearing prices in the day ahead market, the spread between the PJM price and the MISO price on one of the legs exceeds \$50, that leg is rejected.

19. Since the MISO day ahead purchase and sale in the transactions described at ¶17 *supra* canceled if neither leg was rejected due to a breaching of the \$50

transmission price limit, in this case Mr. Chen would have been left with a long position at one PJM point (Greenland Gap in the foregoing example) and a short position at the other (Mt. Storm in the example). If one leg was rejected (e.g., the MISO into Mt. Storm leg), Mr. Chen was left with a long position in one control area and a short position in another. This would most likely result in a long position in day ahead PJM power, and a short position in day ahead MISO power.

20. Real time spreads between points in PJM are not constant, and in particular, they fluctuate randomly. At times, these random fluctuations can be extremely large. If neither leg was rejected, Mr. Chen was at risk to changes in this real time intra-PJM spread.

21. The differences between real time PJM and MISO prices—PJM-MISO real time spreads—are not constant, and fluctuate randomly. If one leg was rejected due to a breach of the \$50 UTC limit, Mr. Chen was at risk to this real time PJM-MISO spread.

22. Spread trading is ubiquitous in virtually every commodity market. Indeed, a very large fraction of trading of everything from aluminum to corn to oil to natural gas to power to zinc is spread trading. Spread trading performs an important price discovery function, facilitates hedging, and provides liquidity to the market. Spread trading should be encouraged as a way of facilitating the efficiency of the market.

23. Mr. Chen chose the busses that he utilized in his spread trading based on fundamental analysis. That is, he attempted to identify bus prices that were

overpriced relative to others. By carrying out such fundamental research, and trading based on it, Mr. Chen was contributing to price discovery in the market.

24. To reiterate, Mr. Chen was at risk when engaging in this trading activity. Indeed, these risks were quite large. In particular, Mr. Chen lost over \$300,000 in this strategy on 30 May, 2010 when day ahead time spreads widened dramatically to exactly \$50/MWh. This reflects the fact that the distribution of electricity prices exhibit “heavy tails.” That is, the probability of extreme changes is large, as compared to the standard “normal” (bell-shaped) distribution often used to characterize risk.

25. The facts that (a) Mr. Chen was at risk to spread changes, and (b) was buying and selling power at different PJM points, means that in no way can his trading be considered “wash trading.” A wash trade involves a (near) simultaneous purchase and sale of the same asset or commodity. Wash trades create no exposure to risk of price changes. In contrast, Mr. Chen’s positions were at risk to changes in prices. This is demonstrated by the fact that Mr. Chen’s profit margins on these transactions fluctuated, and indeed, he suffered large losses on at least one day.

26. After suffering a loss on 30 May, 2010, Mr. Chen reconsidered his trading strategy. Mr. Chen decided that, in addition to executing trades as he had in the past (i.e., either with imports from MISO to PJM node A and exports from PJM node B to MISO, or simply stand alone day ahead trades to or from an interface) he would buy day ahead power in MISO and sell it at a point in PJM under a UTC

contract, and simultaneously buy day ahead power at the same point in PJM, and sell it into MISO.

27. Under this new strategy, Mr. Chen was not at risk to intra-PJM real time spread changes, as he had bought and sold power at the same bus in PJM.

However, Mr. Chen was still at risk.

28. Specifically, Mr. Chen faced the risk that one leg of the pair he submitted would be rejected. In the event, Mr. Chen was at risk to the PJM-MISO real time spread risk on the non-rejected leg.

29. Given that it was impossible for both legs to be rejected (since MISO minus PJM cannot exceed \$50 if PJM minus MISO does, and *vice versa*), and since the probability of rejection of a leg was non-zero, Mr. Chen was at risk to PJM-MISO real time spread changes with positive probability.

30. Again, this means that these were not wash trades. There were states of the world in which Mr. Chen would have faced exposure to price risk. In contrast, in a wash trade, no such states of the world exist.

31. There is another way of seeing this. UTC contracts are a combination of (a) standard “vanilla” spreads in forward contracts and (b) an embedded option. Crucially, the option embedded in the MISO to PJM UTC trade is different than the option embedded in the PJM to MISO trade. Mr. Chen’s trading strategy was therefore an option spread transaction. Although the forward contract portions of the two UTC legs of his trades cancelled out, the option portions did not. This left Mr. Chen with a contingent price exposure. In contrast, in a wash trade there is no contingent price exposure.

32. In essence, Mr. Chen was speculating that, contingent on the MISO into PJM day ahead spread exceeding \$50, the day ahead PJM into MISO spread was downward biased. That is, on average, given this contingency, the real time difference between the PJM and MISO prices was larger than the difference between the day ahead PJM and MISO prices. This difference between the average (or “expected”) real time PJM-MISO difference and the day ahead PJM-MISO difference is referred to as a price “bias.”

33. Commodity speculation is, in essence, betting on price bias.<sup>1</sup> Thus, Mr. Chen was engaging in a speculative transaction that involved taking on risk in exchange for an expected profit.

34. Mr. Chen neither made nor took deliveries of physical power, as would be necessary as part of one type market manipulation: a manipulation based on the exercise of market power, e.g., a classic corner or squeeze. In such a manipulation, a trader with a large financial position buys or sells excessively large physical quantities in order to distort prices in a way that enhances the value of his financial position.<sup>2</sup> Since he did not make or take delivery of physical power, Mr. Chen could not have manipulated the market through the exercise of market power.

35. Mr. Chen did not act in a deceptive manner. He made his purchases and sales openly, and entered the information necessary to execute his trading strategy

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<sup>1</sup> J. M. Keynes. *A Treatise on Money* (1930).

<sup>2</sup> S. C. Pirrong, *The Economics, Law, and Public Policy of Market Power Manipulation* (1996).

in an open and transparent way. Moreover, the information he entered was correct and hence could not have been fraudulent.

36. As a result of the transactions Mr. Chen executed, he was eligible for, and received, transmission loss credits (“TLC”). TLC therefore affected the profitability of the strategies that Mr. Chen employed.

37. Mr. Chen responded rationally to the economic signal that was inherent in the design of the TLC. It would be unduly burdensome and unrealistic to expect traders to decide whether or not to respond to economic signals if they can do so without engaging in deception or exercising market power. If PJM deems that the TLC is incentivizing undesirable transactions, the problem is in the incentives inherent in the TLC, rather than with traders responding rationally to these incentives.

38. Traders respond to price and value signals, regardless of whether those price and value signals reflect only economic fundamentals, or are also affected by regulations and market design. Several examples illustrate this point.

39. For instance, the price that traders are willing to pay for corn, and the amount of corn they are willing to buy, depends on the subsidy for the production of ethanol. This subsidy is a purely legislative artifact, but affects the economics of purchasing corn. The higher the subsidy, the more corn traders purchase, and the higher the price they are willing to pay for it.

40. As another example, prior to the passage of the Staggers Rail Act in 1980, the Interstate Commerce Commission set rail rates on grain shipments. The regulated rate structure (a) equalized the rail rates on grain shipments to different

ports, even though the costs of serving these ports differed, and (b) protected the (lower) through rate from interior points to export points on shipments of grain that were shipped from a given interior point to an interior terminal, and then sent from the interior terminal to an export point. As a result of this rate structure, shipments were roughly equalized across export ports, and it was conventional for shippers to ship grain from a producing location (such as central Iowa) to an interior terminal market (such as Chicago) where it was stored for some period before being shipped to an export point. The Staggers Act eliminated these features of the regulated rate structure, and as a consequence (a) more grain was shipped to lower cost ports, and less grain to higher cost ports, and (b) grain was shipped directly from producing points to export ports without being stored at interior points like Chicago. This change in behavior makes it plain that the original patterns of shipment and storage were driven by the incentives inherent in the regulated rate structure. Again, traders responded to the economic incentives inherent in the regulated price structure, even though this regulated rate structure was not economically efficient.

41. As a final example, futures contracts often include premiums for delivery at certain locations (or of certain grades) and discounts for other locations (or grades), and these premiums and discounts do not equal market price differentials between the locations (or grades). When deciding where (or what) to deliver, market participants take into account the exchange-specified premiums and discounts. Specifically, they choose to deliver the “cheapest to deliver” location

(or grade), where the calculation of the cheapest to deliver explicitly includes the specified premium or discount.

42. In each example, traders respond to the economic signals inherent in the subsidy, or regulated rate structure, or contract design. When their responses to these signals were deemed inefficient, as in the case of rail rates, neither Congress nor regulators attempted to punish the traders. Instead, Congress changed the regulations to eliminate equalization and through rate protection. Traders responded quickly to the new price signals. Similarly, there have been cases where exchanges decided that delivery premiums and discounts were leading to inefficient delivery and trading behavior. In these cases, exchanges revised the price differential structure in these contracts in order to give traders efficient price signals.

43. Mr. Chen was acting no differently than the buyer of corn in a market where ethanol is subsidized; or the trader of wheat under regulated rail rates; or the trader of a futures contract with a particular premium or discount structure. He was responding rationally to economic signals—price signals—inherent in the market regulation and design. To the extent that his actions were inefficient, the fault is with the market design, not with his response thereto.

44. And again, it is unduly burdensome and unrealistic to charge traders with the task of determining which price signals they should respond to, and which they should not. This puts traders like Mr. Chen in the position of mind readers trying to divine the intent of regulators. Mind reading being a very imprecise art, in attempting to do so they will inevitably do some things that regulators consider

inefficient, and will inevitably fail to do some things that regulators think they should do. This places traders at the acute risk of suffering penalties for their inability to distinguish which price signals regulators intend for them to follow, and which ones they do not. Moreover, out of fear of suffering such penalties, some traders may shy away from taking actions in response to price signals that would have the effect of enhancing market efficiency.

45. In the present instance, PJM essentially demands that Mr. Chen, and other traders, decide which kinds of trades “should” receive TLC payments, and which should not. This is a truly difficult task, and one fraught with potential for error. Rather than demanding that traders like Mr. Chen read their minds, system regulators should design a TLC mechanism that provides the incentives to undertake the kinds of trades they prefer, and which does not incentivize the kinds of trades that they do not prefer.

46. It should also be noted that the TLC payments that Mr. Chen received were risky. That is, he could not know at the time at which he initiated the transactions, what the TLC payment associated with those transactions would be. Those payments were determined by conditions prevailing in the PJM system at the time that the power flowed.

47. For instance, in June, 2010, the TLC payments averaged \$.56, but had a standard deviation of \$.09; in July, 2010, they averaged \$.66 with a standard deviation of \$.16, and in August, 2010 they averaged \$.60 with a standard deviation of \$.20. The positive standard deviations indicate that the transactions that Mr. Chen undertook were risky. Since these payments were risky,

transactions that generated such payments cannot be considered as wash trades *per se* because wash trades involve simultaneous purchase and sale with no risk of loss.

48. Furthermore, scarce enforcement resources are best employed detecting and investigating conduct that distorts, or has the potential to distort the allocation of real resources, i.e., distorts or has the potential to distort the production, consumption, or transmission of power. Mr. Chen's transactions entailed no such distortions, or the potential for such distortions.

### **Summary and Conclusions**

49. Mr. Chen engaged in transactions that put him at risk, and hence which were not wash trades. Moreover, Mr. Chen did not exercise market power or engage in misleading or deceitful acts. Furthermore, he responded rationally to economic incentives—price signals—inherent in the PJM market design. As a result, his trades were legitimate, and not manipulative. Moreover, his trades did not distort the production, consumption, or transmission of power. Thus, there is no economic basis for pursuing legal action against Mr. Chen.

UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION

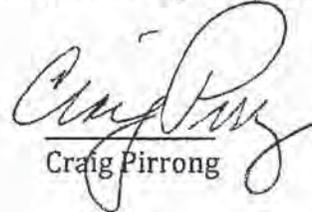
PJM Up-To Congestion Transactions

Docket No. IN10-5-000

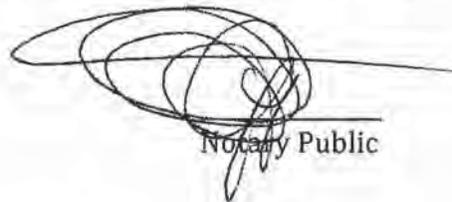
State of Missouri            )  
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County of St. Louis        )        ss

**AFFIDAVIT**

Craig Pirrong, first being duly sworn on oath, deposes and says that the foregoing is his sworn affidavit in this proceeding and that the foregoing affidavit is true, correct, and complete to the best of his information, knowledge, and belief.

  
Craig Pirrong

Subscribed and sworn to before me this 8<sup>th</sup> day of December, 2010

  
Notary Public

My Commission Expires:



## **STEPHEN CRAIG PIRRONG**

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### **EDUCATION**

- Ph.D., UNIVERSITY OF CHICAGO, December, 1987.  
Thesis: An Application of Core Theory to the Study of the Organization of Ocean Shipping Markets.
- M.B.A., UNIVERSITY OF CHICAGO, March, 1983.  
Concentrations in finance, economics and econometrics.
- B.A., THE UNIVERSITY OF CHICAGO, June, 1981.  
Major in economics.
- THE UNITED STATES NAVAL ACADEMY, July, 1977-August, 1979.

### **EMPLOYMENT**

- BAUER COLLEGE OF BUSINESS, UNIVERSITY OF HOUSTON, Houston, TX. Professor of Finance and Director, Global Energy Management Institute, 2003-present.
- OKLAHOMA STATE UNIVERSITY, Stillwater, OK. Watson Family Professor of Commodity and Financial Risk Management and Director, Center for Risk Management, 2001-2003.
- WASHINGTON UNIVERSITY, OLIN SCHOOL OF BUSINESS, St. Louis, MO.  
Assistant Professor of Finance, 1996-2001.
- UNIVERSITY OF CHICAGO, GRADUATE SCHOOL OF BUSINESS, Chicago, IL. Visiting Assistant Professor of Finance (October, 1994-August, 1996).
- UNIVERSITY OF MICHIGAN, SCHOOL OF BUSINESS ADMINISTRATION, Ann Arbor, Michigan. Assistant Professor of Business Economics and Public Policy (January, 1989-June, 1996).
- LEXECON, INC., Chicago, Illinois. Economist (November 1987-December, 1988).
- GNP COMMODITIES, Chicago, Illinois. Senior Investment Strategist (1986-1987).

## PUBLICATIONS

### Articles

- “The Clearinghouse Cure.” (Lead article.) *Regulation*, 2009.
- “Clearing Up Misconceptions on Clearing.” *Regulation*, 2008.
- “The Price of Power: The Valuation of Power and Weather Derivatives.” *Journal of Banking and Finance*, 2008.
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- “Securities Market Macrostructure: Property Rights and the Efficiency of Securities Trading.” *Journal of Law, Economics, and Organization*, 2002.
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- “The Organization of Financial Exchange Markets: Theory and Evidence.” *Journal of Financial Markets*, 1999 (lead article).
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- “The Inefficiency of U.S. Commodity Manipulation Law: Diagnosis and a Proposed Cure.” *Research in Law and Economics*, 1997.
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“Commodity Market Manipulation Law: A (Very) Critical Analysis of the Existing Doctrine and A Proposed Alternative.” *Washington and Lee University Annual Review of Securities and Commodities Law*, September, 1994.

“Fundamentals and Volatility: Storage, Spreads, and the Dynamics of Metals Prices,” with Victor Ng. *The Journal of Business*, April, 1994.

“Regulation: Futures Trading and Institutional Investors.” *The American Enterprise*, January-February, 1994.

“Multiple Delivery Points, Pricing Dynamics, and Hedging Effectiveness in Futures Markets for Spatial Commodities.” *The Journal of Futures Markets*, August, 1994.

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“Removing Undue Regulatory Impediments to the Use of Futures and Options by Institutional Investors.” *Journal of Financial Engineering*, March 1993. (Reprinted in *Futures International Law Letter*, October, 1992.)

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“Resolving the Thrift Crisis” with V. Bernard, R. Kormendi and E.Snyder. *Journal of Applied Corporate Finance*, Autumn 1989.

### **Contributions to Books**

“Structural Models of Commodity Price Dynamics.” Forthcoming in H. Geman (ed.), *Encyclopedia of Quantitative Finance*.

“Lattice Approaches to Pricing Derivatives.” Forthcoming in R. Kolb and J. Overdahl (eds.), *Companion to Financial Derivatives*.

“Energy Derivatives.” Forthcoming in R. Kolb and J. Overdahl (eds.), *Companion to Financial Derivatives*.

“Pricing Power Derivatives: Theory and Matlab Implementation.” In J. London, *Modeling Derivatives Applications in Matlab, C++, and Excel*. Financial Times Press, 2006.

“Market Microstructure Issues.” In A. Kleit (ed.), *Electric Choices: Deregulation and the Future of Electric Power*. Rowan and Littlefield, 2006.

“The New Economy: Implications for the Organization and Structure of Securities Markets.” In D. Jones (ed.), *The New Economy Handbook*. The Academic Press, 2003.

“Pricing Forwards and Options Using the Mesh-Based Partial Differential Equation Approach.” R. Jameson (ed.), *Energy Modelling and the Management of Uncertainty*. Risk Publications, 1999. (Republished in 2005).

“Pricing Energy Derivatives,” with Kaushik Amin and Victor Ng. Chapter 4 in R. Jameson (ed.), *Managing Energy Price Risk*. Risk Magazine Publications, 1994. (Republished in 1999 and 2004).

“The Market for Treasury Securities: Microstructure and Market Power.” Chapter 1 in P. Knapp (ed.), *The Treasury Securities Market: The Scholars' Assessment*. Homewood, IL: Business One Irwin, 1994.

"The Economics of Risk Based Capital Requirements." Chapter 33 in K. Lehn and R. Kamphuis (eds.), *Modernizing U.S. Securities Regulation*. Homewood, IL: Business One Irwin, 1993.

## **Books**

*Models of Commodity Prices*. Forthcoming, Cambridge University Press.

*Corners and Squeezes: The Economics, Law, and Public Policy of Financial and Commodity Market Manipulation*. Kluwer Academic Publishers, 1996.

*Grain Futures Contracts: An Economic Appraisal*. With R. Kormendi and D. Haddock. New York: Kluwer Academic Publishers, 1993.

*The Origins and Resolution of the Thrift Crisis*. With V. Bernard, R. Kormendi and E. Snyder. New York: Kluwer Academic Publishers, 1989.

## **PAPERS PRESENTED**

"Stochastic Volatility and Commodity Price Dynamics." Texas A&M University, 31 October, 2008. Institute of Financial Mathematics Conference, Champuloc, Italy, 21 January 2008.

"The Price of Power." Commodities 2007. University of London, 17 January, 2007.

"Modeling Issues in Commodity Markets." Commodities 2007. University of London, 18 January, 2007.

"Momentum In Futures Markets." 2005 European Finance Association Meetings, Moscow, Russia, 25 August, 2005. University of Illinois, September, 2006.

"Upstairs, Downstairs." 2003 European Finance Association Meetings, Glasgow, 27 August, 2003.

"Upstairs, Downstairs." 2003 Midwest Finance Association Meetings, St. Louis, March 2003.

"The Price of Power." 2002 European Finance Association Meetings, Berlin, 28 August, 2002.

"The Price of Power." 2002 Bachelier Finance Society Second World Congress, Crete, 12 June, 2002.

"Technological Change, For-Profit Exchanges, and the Self-Regulation of Financial Markets." American Law and Economics Association Meetings, New York, 7 May, 2000.

"Manipulation in Power Markets." University of California Energy Institute Restructuring Conference, Berkeley, 17 March, 2000.

“A Positive Theory of Financial Exchange Organization.” International Society of the New Institutional Economics Meetings, Paris, 18 September, 1998.

“A Positive Theory of Financial Exchange Organization.” American Law and Economics Association Meetings, Berkeley. 8 May, 1998.

“Efficient Deterrence of Manipulation in Futures Markets.” American Law and Economics Association Meetings, Chicago. 6 May, 1996.

“Raising Revenue in the Worst Way: The Economic Effects of Asymmetric Hedge Taxation.” Virginia Tech Symposium on “Hedge Taxation After *Arkansas Best*: Law, Economics, and Public Policy.” 21 July, 1993.

“Fundamentals and Volatility: Storage, Spreads, and the Dynamics of Metals Prices.” National Bureau of Economic Research Summer Institute Workshop on Asset Pricing. 20 July, 1993. American Finance Association Meetings, 3 January, 1993.

“Price Dynamics in Physical Commodity Spot and Futures Markets.” Econometric Society Meetings, 7 January, 1993. Western Finance Association Meetings, June, 1993. ORSA/TIMS Meetings, November, 1993.

“Still Nature's Metropolis?” Kalo Hineman Symposium on Grain Futures Market Delivery Issues at the Commodity Futures Trading Commission, 15 September, 1991.

“Maintaining the Integrity of the Futures Delivery Process: The Economics of Manipulation and its Deterrence.” American Bar Association/Virginia Tech Conference on Market Manipulation, 9 November, 1990.

“Multiple Delivery Points: Manipulation, Liquidity, and Basis Risk.” American Bar Association/Virginia Tech Conference on Market Manipulation, 10 November, 1990.

Seminar presentations at North Carolina State University, Vanderbilt University, Southern Methodist University, the Federal Reserve Bank of Atlanta, the University of Missouri, the University of Kansas, Arizona State University, Babson University, Yale University Law School, the Michigan Business and Law Schools, the University of Chicago, the Tuck School of Business at Dartmouth University, North Carolina State University, the University of Alberta, Virginia Tech University, Washington University, Columbia University Law School, and the Commodity Futures Trading Commission.

## **CURRENT RESEARCH ACTIVITY**

### **Papers Under Review**

“The Price of Power: The Valuation of Power and Weather Derivatives.” Second round, *Journal of Banking and Finance*.

“Rocket Science, Default Risk, and the Organization of Derivatives Markets.” First round,  
*Journal of Law and Economics*.

### **Selected Working Papers**

“The Industrial Organization of Trading, Clearing, and Settlement in Financial Markets.”

“The Valuation of Power Options in a Pirrong-Jermakyan Model.”

“Momentum in Futures Markets”

“Bund for Glory, or, It’s a Long Way to Tip a Market.”

“Upstairs, Downstairs: Electronic vs. Open Outcry Markets.”

“The Macrostructure of Electronic Financial Markets.”

“The Organization of Electronic Financial Markets.”

“Third Markets and the Second Best.”

“The Price of Power: Valuation of Power and Weather Derivatives.”

“Manipulation of Power Markets.”

“The Economic Implications of *Arkansas Best*: Asymmetric Tax Treatment of Hedge Income, Hedging Effectiveness, and Price Discovery.”

“The Effects of *Arkansas Best* on Hedge Ratios.”

“Brave New World? The Prospects for Computerized Futures Trading.”

“A Structural Model of Cross Hedging Risk.”

“Two Cheers for Follow-on Research in Pharmaceutical Markets.”

“The Asset Management Incentives Implicit in FSLIC Assisted Acquisition Agreements.”

“Futures Markets as Implicit Loan Markets: The Case of Grains.”

### **Research in Progress**

Momentum in Futures Markets.

Storable Commodity Price Dynamics and Commodity Derivatives Pricing.

Power Price Dynamics.

Pricing Contingent Claims on Power and Weather.

Clearing Mechanisms in Derivatives Markets: Efficiency and Distributive Issues.

Rights Aspects of Commodity Exchanges

### **Reports**

“Woodpulp Futures: Establishing the Essential Facts.” Report to OM Stockholm, 1996.

“Agricultural Futures Exchange in Germany for Europe: Feasibility-Design-Implementation.” Report to the Warentermiborse, 1995.

“Strengthening the Winnipeg Commodity Exchange Canola Futures Franchise.” Report to the Winnipeg Commodity Exchange, 1995.

“The Costs and Benefits of Adding Local Traders to the Deutsche Terminbörse.” Report to the Deutsche Terminbörse, 1994.

“Derivatives Exchanges, Liquidity, and Locals: A Look to the Future.” Catalyst Institute Report, 1994.

“Is There a Future for Stock Branch Indices?” Catalyst Institute Report, 1994.

“The Contribution of Dual Trading to the Liquidity of New York Mercantile Exchange Energy Contracts” (with NERA). Report for the New York Mercantile Exchange submitted to the Commodity Futures Trading Commission in support of NYMEX's application for a waiver from the dual trading ban contained in the 1992 CFTC re-authorization bill.

“Political Rhetoric and Stock Price Volatility: A Case Study.” Catalyst Institute Report, 1993.

“The Relation Between Oil and Gasoline Futures and Spot Prices” (with Victor Ng). Report submitted to the New York Mercantile Exchange, 1992.

“An Economic Analysis of the Grain and Oilseed Delivery Mechanism at the Chicago Board of Trade.” Report submitted to the Chicago Board of Trade, 1991.

“Crisis Resolution in the Thrift Industry: Beyond the December Deals” (with Victor Bernard, Roger Kormendi, and Ted Snyder). Reported submitted to the Federal Home Loan Bank Board, 1989.

## **Refereeing Activities**

*American Economic Review; Economic Inquiry; International Journal of Law and Economics; Journal of Business; Journal of Economic Dynamics and Control; Journal of Economics and Finance; Journal of Finance; Journal of Financial Markets; Journal of Futures Markets; Journal of Industrial Organization; Journal of Law and Economics; Journal of Quantitative Financial Analysis; Journal of Risk; Review of Financial Studies; Journal of Economic Behavior and Organization; Journal of Business and Economic Statistics; Managerial and Decision Economics; Journal of Economics and Business.*

## **FELLOWSHIPS**

Oscar Mayer Fellow, University of Chicago (1983-1986)

## **RESEARCH GRANTS**

Montreal Exchange grant to evaluate feasibility of introducing new commodity futures contracts. OM Stockholm and OMLX, London grant to study the feasibility of a pulp futures market and to design pulp futures and futures options contracts, 1996.

Winnepeg Commodity Exchange grant to study the contracts, rules, and bylaws of the WCE, with the objective of making recommendations to revise them in order to improve the performance of the Exchange's markets, 1994.

Catalyst Institute/DTB Deutsche Terminbörse grant to study the effects of attracting local traders to the DTB, 1994.

Catalyst Institute/DTB Deutsche Terminbörse grant to study the feasibility of new currency derivatives contracts, 1994.

Catalyst Institute/DTB Deutsche Terminbörse grant to study the feasibility of stock branch index derivatives, 1994.

Virginia Tech Center for Study of Futures and Options Markets grant to study the economic implications of the Internal Revenue Service policy on the taxation of hedging gains and losses 1993.

Warner Lambert Corporation grant for the study of competition in pharmaceutical markets 1990-1991.

Chicago Board of Trade grant to study grain futures market delivery issues 1990-1991.

## **EXECUTIVE TEACHING**

Bayerische Vereinsbank, 1995

Anheuser-Busch, 1996.

Energy Power and Risk Management Courses and Conferences, March, June, September, and December, 1999, May 2000.

Peabody Coal Co., 2000.

HSM II Program, Olin School of Business, Washington University, Spring 2000.

**PERSONAL**

Married to Terry Lehman Pirrong. Two children: Renee Elise and Genevieve Corinne. Hobbies: history (especially U.S. Civil War), agonizing over Chicago sports teams, and exercise.

## **APPENDIX B**

### **UP-TO CONGESTION TRADES IN PJM**

*UP-TO CONGESTION TRADES IN PJM*

According to PJM,<sup>1</sup> up-to congestion (“UTC”) transactions were originally created as a mechanism to hedge in the Day-ahead Energy Market the exposure to price differentials from the source to the sink of their physical energy deliveries into, out of or through PJM in the Real-time Energy Market, and to allow market participants who want to wheel power through PJM to set the maximum dollar value of congestion they would be willing to pay to wheel that power. Thus, as PJM stated in 2000:

“Up-to” congestion bids permit transmission customers to specify how much they are willing to pay for congestion by bidding a certain maximum amount for congestion between the transaction source and sink. If the congestion charges are less than the amount specified in the bid, then the transaction will be scheduled in the day-ahead schedule. These “up-to” bids protect transmission customers from paying uncertain congestion charges by guarantying that they will pay no more than the amount reflected in their bids.<sup>2</sup>

Under PJM’s rules, UTC trades require at least one interface node so that they always involve a PJM import or export (or a wheel-through, for example, from MISO to NYISO). For example, a trader can import actual or virtual megawatts from MISO to Node A within PJM, or export from Node B within PJM to MISO, but the trader cannot reserve transmission from Node A to Node B both within PJM as an up-to congestion transaction. Also, the nodes (also called

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<sup>1</sup> *PJM Interconnection, L.L.C.*, Tariff Filing, Docket No. ER10-2280-000 at 2-3 (Aug. 18, 2010) (“August 18, 2010 Tariff Filing”).

<sup>2</sup> See *id.* at 3 (quoting PJM Compliance Filing, PJM Interconnection, L.L.C., Docket No. ER00-1849-000 (Mar. 10, 2000)).

zones, hubs, or buses) are limited to those selected by PJM. Dr. Chen estimates that, out of more than 7,000 nodes in PJM, approximately 10 percent of them are available for UTC trading.

In order to reserve transmission for a UTC transaction, the trader must first make an OASIS transmission reservation and then schedule the transaction using PJM's Enhanced Energy Scheduling ("EES") system. PJM's trading window is open from 8:00 am until 12 noon eastern time for next day's trades. During that period of time, a trader like Dr. Chen could reserve non-firm point-to-point up-to congestion transmission on OASIS, selecting a date and number of hours, a point of receipt and point of delivery, and the number of megawatts per hour. After making this transmission reservation, the trader would then go to PJM's EES system to enter a two-settlement transaction. Here the trader enters the reservation number acquired in previous step and the price the trader willing to pay for congestion. PJM sets the price range a trader is willing to pay for the congestion at +/- \$50 per MWh. Trades that fall within this range are accepted; trades that fall outside of this range the trades are rejected. A trader, however, could set a lower willing-to-pay congestion price, e.g., \$25 or \$35 per MW.

At 4:00 pm eastern time, the day-ahead prices are published and the trader will know if his trades are approved or rejected for each hour for which he sought transmission for the next day. For example, if the trader sought to reserve transmission from MISO to Dayton, and if, for one or more hours (e.g., HE14), the Day-Ahead LMP price of Dayton minus the Day-Ahead LMP price of MISO is greater than \$50, the trade is rejected for HE14, even though some other hours might be accepted. If the trader also sought transmission from either Dayton or another node in PJM back to MISO, he would not have that leg rejected in this example because the day-ahead spread from PJM to MISO would by definition be less than \$50 per MWh.

In this example (MISO to Dayton and another PJM node to MISO), the trades are settled by PJM according to the following formula:

$$\text{PROFIT \& LOSS (P\&L)} = \text{SPREADS} - \text{COSTS} + \text{REFUNDS}$$

Where “spreads” = ((Real-Time LMP of the selected PJM Node - Real-Time LMP of MISO) - (Day-Ahead LMP of the selected PJM Node - Day-Ahead LMP of MISO)).

“Costs” include an amount generally equal to \$0.67 per MWh for non-firm point to point transmission reserved from an interface, like MISO, into PJM. (This charge is not assessed on exports from PJM to MISO but is assessed on exports from PJM to other interfaces.) Additional costs (totaling around \$0.20-\$0.25/MW include: PJM Scheduling, System Control and Dispatch Service - Market Support (SCDS: \$0.04/MW), PJM Scheduling, System Control and Dispatch Service - Advanced Second Control Center (less than \$0.01/MW); Market Monitoring Unit (MMU) Funding (less than \$0.01/MW); Reactive Supply and Voltage Control from Generation and Other Sources Service (RSVC: \$0.14-\$0.23/MW); and Black Start Service (BS: \$0.01/MW). These costs are assessed on both up-to-congestion transmission from an interface to a node in PJM and on transmission from a node within PJM to the interface.<sup>3</sup>

“Refunds” include transmission line loss credits (which vary and are not known in advance) and PJM Scheduling, System Control and Dispatch Service Refund - Market Support (less than \$0.01/MW).

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<sup>3</sup> Spreads are computed on an hourly basis. The refunds are calculated on a daily basis and are not tied to individual trades.

ATTACHMENT 2

Supplemental Submission on Behalf of Dr. Alan Chen  
March 16, 2012

UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION

PJM Up-To Congestion Transactions )

Docket No. IN10-5-000

*SUPPLEMENTAL SUBMISSION ON BEHALF OF DR. ALAN CHEN*

In our prior submission, we note that Enforcement soon will “face a fork in the road.” One road—the one we advocate—leads Enforcement to conclude that Dr. Chen engaged in lawful transactions following price signals expressly created by the Commission. The other road—the one we oppose—leads Enforcement to conclude that Dr. Chen engaged in fraudulent market manipulation.

After issuing three data requests and conducting two depositions of Dr. Chen over the course of eighteen months, Enforcement apparently still has not definitively chosen which way to go, though our impression is that Enforcement is leaning sharply towards levying market manipulation charges in this case. As we explain below, that route unavoidably plunges headlong into a very steep chasm—a fall that will be fatal not only to this investigation but also to an entire branch of Enforcement’s market manipulation lexicon.

The reason that continued prosecution of this case will throw Enforcement over the proverbial edge is that there is no fraud here. As a result, Enforcement predictably will retreat to the contention that Dr. Chen’s trading “impair[ed], obstruct[ed] or defeat[ed] a well-functioning market,” and assert that, beyond this, no fraud need be shown. *See Prohibition of Energy Market Manipulation*, Order No. 670, FERC Stats. & Regs. ¶ 31,202 at PP 50 & n.103 (citing *Dennis v. United States*, 384 U.S. 855, 861 (1966)). But as Enforcement will quickly discover, this theory—which we refer to as “non-fraud fraud”—is dead on arrival.

When the Commission adopted its “non-fraud fraud” standard in Order No. 670, it relied solely on a 1960s case, *Dennis v. United States*. *Id.* at P 50 (citing *Dennis*, 384 U.S. at 861). *Dennis* was about a conspiracy to defraud the government, brought under a general conspiracy statute against criminal defendants who were alleged to have fraudulently obtained the services of the National Labor Relations Board on behalf of a labor union by knowingly filing false affidavits denying their affiliation with the Communist Party. The statute in question, 18 U.S.C. § 371, generally prohibits any conspiracy “to defraud the United States, or any agency thereof in any manner or for any purpose.”

That exceptionally broad language has long been construed to extend beyond “fraud as that term has been defined in the common law,” and to reach “any conspiracy for the purpose of impairing, obstructing or defeating the lawful function of any department of Government.” *Dennis*, 384 U.S. at 861 (listing cases). But the federal conspiracy statute differs from common law fraud because it embraces different criminal purposes, *not* because it forbids non-fraudulent conduct. A conspiracy to defraud the government “need not aim to deprive the government of property.” *United States v. Caldwell*, 989 F.2d 1056, 1058-59 (9th Cir. 1993) (citing *Haas v. Henkel*, 216 U.S. 462, 479 (1910)). It also “need not involve any detrimental reliance by the

government.” *Id.* at 1059 (citing *Dennis*, 384 U.S. at 861-62). Rather than prove reliance, the government, under 18 U.S.C. § 371, “need only show” that a defendant intended “to obstruct a lawful function of the government.” *Id.* (citing *Hammerschmidt v. United States*, 265 U.S. 182, 188 (1924)).

The Commission’s reasoning in Order No. 670 rests on that last point. But it takes that point hopelessly out of context. Fraud was a given in *Dennis*—the communist sympathizers lied about being communists. The Supreme Court has consistently reiterated that prosecution under 18 U.S.C. § 371 is reserved for conspiracies to defraud or obstruct the government through “deceit, craft or trickery, or at least by means that are dishonest.” *Id.* at 1058 (quoting *Hammerschmidt*, 265 U.S. at 188); accord *McNally v. United States*, 483 U.S. 350, 358-59 & n. 8 (1987) (same). Any case alleging that someone defrauded the United States must, irreducibly, prove fraud.

More recently, the Ninth Circuit’s decision in *Caldwell* flatly rejected the argument that *Dennis* permits the government to punish the “impairment” of a government function without establishing some form of fraudulent conduct. As (now-Chief) Judge Kozinski memorably explained:

There are places where, until recently, “everything which [was] not permitted [was] forbidden . . . . [W]hatever [was] permitted [was] mandatory . . . . Citizens were shackled in their actions by the universal passion for banning things.” Yeltsin Addresses RSFSR Congress of People’s Deputies, BBC Summary of World Broadcasts, Apr. 1, 1991, *available* in LEXIS, Nexis Library, OMNI file. Fortunately, the United States is not such a place, and we plan to keep it that way. If the government wants to forbid certain conduct, it may forbid it. If it wants to mandate it, it may mandate it. But we won’t lightly infer that in enacting 18 U.S.C. § 371 Congress meant to forbid all things that obstruct the government, or require citizens to do all those things that could make the government’s job easier. So long as they don’t act dishonestly or deceitfully, and so long as they don’t violate some specific law, people living in our society are still free to conduct their affairs any which way they please.

*Caldwell*, 989 F.2d at 1061; *see also United States v. Knapp*, 25 F.3d 451, 455 (7th Cir. 1994) (noting that *Hammerschmidt* and *Caldwell* “stand for the proposition that a defendant cannot be found guilty of defrauding the United States without some showing of fraud”).

So too here. Dr. Chen accurately entered the information necessary to conduct his trades, which were carried out openly. He did not act with any deceit or dishonesty. He did not conceal or misrepresent, or attempt to conceal or misrepresent, anything to PJM or to anyone else. He did not engage in fictitious transactions. He did not make false or misleading representations. In short, he did not engage in fraud. Moreover, what Dr. Chen did do—following price signals expressly created by the Commission—was in full conformance with all governing Commission regulations and PJM tariff provisions. In the words of *Caldwell*, he did not “act dishonestly or deceitfully,” and did not “violate [any] specific law.” *Caldwell*, 989 F.2d at 1061. That is the end of the analysis.

**Submitted in Response to Formal, Non-Public Investigation  
Under 18 C.F.R. § 1b.5  
Subject to 18 C.F.R. §§ 1b.9 and 1b.20**

As Enforcement is well aware, section 222 of the Federal Power Act is based on the Securities Exchange Commission's rule against fraud-based market manipulation. As the Supreme Court has definitively held, that provision may be "aptly described as a catchall provision, but what it catches *must be fraud*." *Chiarella v. United States*, 445 U.S. 222, 234–35 (1980) (stating that section 10(b) of the Securities Exchange Act cannot be read "more broadly than its language and the statutory scheme reasonably permit") (quotations omitted) (emphasis added). Enforcement cannot satisfy that statutory standard in this case.

We renew our request that Enforcement drop this investigation. If Enforcement proceeds with this case, and the Commission issues a show cause order, Dr. Chen will exercise his statutory right to obtain *de novo* review of the facts and law in a federal district court. Consistent with the case law, that court will reject Enforcement's "non-fraud fraud" theory. The lack of any traditional fraud will be fatal to Enforcement's case.

Respectfully submitted,

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March 16, 2012

ATTACHMENT 3

Response to Preliminary Findings of Enforcement Staff  
October 9, 2013

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VIA EMAIL

Mr. Steven C. Tabackman  
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RE: *Preliminary Findings of Enforcement Staff's Investigation of Up To Congestion Transactions by Dr. Houlian Chen on Behalf of Himself and the Principals of Huntrise Energy Fund LLC and Powhatan Energy Fund, LLC, Docket No. IN10-5-000*

Dear Mr. Tabackman:

We write briefly to outline again why Enforcement should terminate its investigation of Dr. Chen. We also incorporate by reference the arguments made in all prior submissions on behalf of Dr. Chen and Powhatan Energy Fund LLC.<sup>1</sup> The trading activity at issue was consistent with price signals approved by the Commission, added value to the PJM markets and assumed market risks, and contained absolutely no deceptive or fraudulent element.

*First*, as we have previously explained, Enforcement's case here makes no sense. RTOs often pay market participants a variety of revenue streams. We find it helpful to refer to the various revenue streams in different colors—one thus might speak of red, blue, green, and purple RTO revenue stream dollars. We respectfully submit that if the Commission were to approve an RTO's payment of "purple" dollars, a reviewing court would be unlikely to uphold an order both approving those payments and simultaneously declaring it to be fraud-based manipulation for a market participant to seek to expose itself to receiving them. Why approve the payment streams

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<sup>1</sup> See Letter from William M. McSwain, Attorney for TFS Capital Principals and Entities, to Steven C. Tabackman, Attorney, FERC (Aug. 24, 2012); Supplemental Submission on Behalf of Dr. Alan Chen (Mar. 16, 2012); Written Submission to Commission Investigation Staff on Behalf of Powhatan Energy Fund LLC (Oct. 21, 2011); Written Submission to Commission Investigation Staff on Behalf of Dr. Houlian Chen (Dec. 13, 2010).

in the first place? And it would be yet another large step removed from reasonable agency action—and a violation of due process—if the Commission were to approve the payment of purple dollars, only to declare—*years later*, after the fact—that it is fraud-based market manipulation for market participants to have sought to earn the purple dollars in the interim.<sup>2</sup> Yet that irrational logic is precisely what Enforcement advocates here.

*Second*, Dr. Chen's trades were consistent with then-prevailing price signals. The collection and distribution of the transmission loss credits (TLCs) in PJM has been thoroughly litigated, and at the time of the trading activity in question, the Commission had approved PJM's specific method for distributing the loss credits. The Commission understood that "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."<sup>3</sup> Nowhere in the Commission's order, however, did it indicate that it would be improper for arbitrageurs to *follow* price incentives designed by PJM and approved by the Commission. Enforcement should not continue to prosecute this "legitimate business decision," which was the result of economically rational behavior, as manipulation.<sup>4</sup> Here, too, "ample record evidence supports that" Dr. Chen's trades were the result of "legitimate business decision[s], resulting from natural market forces, and not alone demonstrative of knowing and intentional or recklessly fraudulent conduct."<sup>5</sup>

To conclude otherwise would fundamentally alter the obligations of market participants. Rather than make decisions consistent with existing price signals, Enforcement's theory of this case expects them to second-guess whether or not certain aspects of the Commission-approved markets are "appropriately" functioning, and then adjust to their behavior accordingly.

Enforcement's position in this case also assumes the conclusion of the dispute at hand: Enforcement contends that "profit from UTC transactions by virtue of arbitraging price differentials in the market required a change in the price spread that is both favorable and greater than the total costs incurred by scheduling the transactions and reserving the associated transmission."<sup>6</sup> But this is an arbitrary and incomplete formulation of profit. Nothing in the Commission's orders indicates that market participants must profit from UTC transactions *only* "by virtue of arbitraging price differentials," or that the transmission loss credits were not a valid source of profits, or even that it was wrong for traders to receive transmission loss credits based on the volume of their trades. In fact, the Commission suggested the opposite. After the

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<sup>2</sup> See *infra* n.11 (citing cases).

<sup>3</sup> *Black Oak Energy, L.L.C. v. PJM Interconnection, L.L.C.*, 125 FERC ¶ 61,042 at P 43 (2008).

<sup>4</sup> See *Blumenthal v. ISO New England Inc.*, 135 FERC ¶ 61,117 at P 42 (2011) (affirming Initial Decision, 132 FERC ¶ 63,017 (2010)).

<sup>5</sup> *Id.*

<sup>6</sup> Preliminary Findings Letter at 4.

Commission commented that “[i]f arbitrageurs can profit from the volume of their trades, they are not reacting only to perceived price differentials in LMP or congestion, and may make trades that would not be profitable based solely on price differentials alone,”<sup>7</sup> it subsequently approved amendments to PJM’s tariff that allocated “surplus marginal line losses to those customers engaging in Up-To Congestion transactions in proportion to the total MWh of those cleared transactions (that paid for transmission services during such hour).”<sup>8</sup> Enforcement now contends that even though the Commission approved the payment of transmission loss credits “in proportion to the total MWh of those cleared transactions”<sup>9</sup>—*i.e.*, based on trade volume—somehow, the Commission “nowhere suggested it would be proper to pay MLSA to those who collected based on volume of trades.”<sup>10</sup> This reasoning ignores the Commission’s own orders.

Transmission loss credits, along with revenues from the differences between day-ahead and real time energy prices and all of the “total costs incurred by scheduling the transactions and reserving the associated transmission,” were components in the profitability of the UTC transactions. To punish Dr. Chen for pursuing a profitable strategy based on an after-the-fact determination that transmission loss credits somehow do not count as legitimate revenues is inconsistent with the Commission’s own prior orders, as well as the requirements of fair notice.<sup>11</sup> If this is the expected course of conduct—and if behaving otherwise by simply following market signals is to be found manipulative—then it will deter those voluntary market participants who provide liquidity and price discovery. Enforcement should terminate this investigation because it unfairly requires traders to follow unwritten and arbitrary rules.<sup>12</sup>

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<sup>7</sup> *Black Oak Energy, L.L.C. v. PJM Interconnection, L.L.C.*, 122 FERC ¶ 61,208 at P 51 (2008).

<sup>8</sup> *Black Oak Energy, L.L.C. v. PJM Interconnection, L.L.C.*, 128 FERC ¶ 61,262 at PP 1, 7 (2009).

<sup>9</sup> *Id.*

<sup>10</sup> Preliminary Findings Letter at 27.

<sup>11</sup> *See Diamond Roofing Co., Inc. v. OSHA*, 528 F.2d 645, 649 (5th Cir. 1976) (explaining that a regulated entity—in this case, an employer—“is entitled to fair notice in dealing with [its] government,” and that “statutes and regulations which allow monetary penalties against those who violate them . . . must give . . . fair warning of the conduct” that is “prohibit[ed] or require[d]”); *see also Trinity Broadcasting of Fla., Inc. v. FCC*, 211 F.3d 618, 619, 628-32 (D.C. Cir. 2000) (discussing fair notice doctrine and finding “neither the regulation nor the Commission’s related statements gave fair notice” of a requirement sufficient “to justify punishing someone for violating it”); *Gen. Elec. Co. v. EPA*, 53 F.3d 1324, 1328-29 (D.C. Cir. 1995) (explaining that “when sanctions are drastic . . . ‘elementary fairness compels clarity’ in the statements and regulations setting forth the actions with which the agency expects the public to comply”) (quoting *Radio Athens, Inc. v. FCC*, 401 F.2d 398, 404 (D.C. Cir. 1968); *id.* (citing cases); *In re: Hunter*, 137 FERC ¶ 61,146 at P 72 (2011) (“Due process requires that an agency provide adequate notice of the substance of a rule before penalizing a private party for violating that rule.”), *rev’d on other grounds, Hunter v. FERC*, 711 F.3d 155 (D.C. Cir. 2013); *cf. FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 509 (2009) (noting that FCC did not seek a penalty where a change in policy had occurred, preventing the subject from having “requisite notice to justify a penalty”) (citation omitted).

<sup>12</sup> For an additional instance of Enforcement presuming a rule that never was in place, *see, e.g.*, Preliminary Findings Letter at 21 (characterizing Dr. Chen’s trades as “sham” because their “profits derived not from

*Third*, contrary to Enforcement's preliminary findings, Dr. Chen's trades added value to the PJM markets. They contributed to price discovery<sup>13</sup> and, to the extent they caused day-ahead prices to move closer to real-time prices, they promoted market efficiency.<sup>14</sup> They cannot be considered "wash" transactions because they made money and because there was always a non-zero risk that Dr. Chen would be exposed to real time price spread changes.<sup>15</sup>

Enforcement contends that Dr. Chen's trades assumed no market risks because the matched trades did not "attempt[] to profit from spread changes between the DAM and RTM."<sup>16</sup> Enforcement also cites to the fact that Dr. Chen did not transact matched trades "before the [TLCs were] available to him" and that "[t]he number of trades and MWh volumes increased by magnitudes."<sup>17</sup> Enforcement asserts that the matched trades "were designed to circumvent . . . market risk."<sup>18</sup> This view is mistaken.

As we have explained, Dr. Chen's strategy assumed market risk, and it was a calculated risk designed to profit in certain conditions. After Dr. Chen experienced significant losses with a non-matched pair strategy, he sought to reduce the risk of further additional losses by placing trades that left him open to a contingent price exposure. Dr. Chen had reason to believe that the paired trades could break at the bid price of \$35/MWh because they had done so in the past. For example, the paired trades involving COMED, COOK, DAYTON, and ROCKPORT had all broken before when the bid price was \$35/MWh.

Enforcement treats historical fact as if it were the rule. But the fact that the conditions necessary for Dr. Chen's high-profit scenario did not occur during a locked-in period does not negate the fact they *could* have occurred. The pursuit of a "black swan"-type payout does not make a strategy illegitimate or manipulative.<sup>21</sup> Dr. Chen's matched-pairs trades essentially used the transmission loss credits to reduce or eliminate the cost of taking an out-of-the money option.

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changes in market prices but from taking advantage of the [TLC]"). Throughout the Preliminary Findings Letter, Enforcement assumes there was some rule that the TLC was not a valid source of profits.

<sup>13</sup> Written Submission to Commission Investigative Staff On Behalf of Dr. Houlian Chen, Docket No. IN10-5-000, Appendix A (Affidavit of Dr. Craig Pirrong) at ¶ 23 (Dec. 13, 2010).

<sup>14</sup> See, e.g., *PJM Interconnection, L.L.C.*, 116 FERC ¶ 61,088 at P 18 & n.9 (2006) ("We have found, for example, that virtual trading activities help promote price convergence between the Day Ahead and Real Time Markets and provide other system benefits.") (citing and quoting *ISO New England, Inc.*, 113 FERC ¶ 61,055 at P 30 (2005) ("Arbitrageurs provide important benefits to bid-based markets by helping to ensure that Day-Ahead and Real-Time prices do not diverge significantly, as well as by providing price discovery and liquidity to the market.")).

<sup>15</sup> Pirrong Aff. at ¶¶ 25, 27-33.

<sup>16</sup> Preliminary Findings Letter at 22.

<sup>17</sup> *Id.* at 22-23.

<sup>18</sup> *Id.* at 23.

<sup>21</sup> See generally Nassim Nicholas Taleb, *The Black Swan* (2007).

The trades were “low risk, low reward with high reward potential.”<sup>22</sup> The transmission loss credit “sometimes . . . cover[ed] the total cost, and also over the total cost,” of this strategy, and on other days, it was “not enough to cover the total cost, but it [did] offset part of the charges.”<sup>23</sup>

Nor was Dr. Chen’s risk limited “only to the extent that something could go wrong in execution of his scheme.”<sup>24</sup> To the contrary, one purpose of the limited-risk strategy was to capture the times when a rejected bid resulted in a significant payment on the difference between day-ahead market and real-time market prices. Enforcement errs in asserting that “even if the import leg did not clear, the export leg was no more likely to profit wildly than to lose markedly.”<sup>25</sup> As Dr. Chen has explained, “If you choose [the paired trades] carefully, the potential of making money is much higher than the potential of losing money.”<sup>26</sup> In fact, after his July 2011 deposition, when Enforcement first raised this claim, we pointed out that Enforcement had never asked Dr. Chen whether there was an asymmetric risk of profitability in his trades, with a greater likelihood of success than failure, and that if they had, he would have explained why the answer is yes.<sup>27</sup> Dr. Chen selected matched pairs where he believed there was a higher potential for the rejected leg to result in a profit.<sup>28</sup>

Enforcement also ignores the risk involved in the transmission loss payments. These were not, as Enforcement presumes, guaranteed rebates based on volume trading alone.<sup>29</sup> As Dr. Pirrong explains, the payments had positive standard deviations in June 2010 through August 2010, “indicat[ing] that the transactions that [Dr.] Chen undertook were risky.”<sup>30</sup> On some

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<sup>22</sup> Deposition of Houlian Chen at 51:5 (Oct. 7, 2010).

<sup>23</sup> *Id.* at 55:19-23.

<sup>24</sup> Preliminary Findings Letter at 24.

<sup>25</sup> *Id.*

<sup>26</sup> Deposition of Houlian Chen at 55:4-5 (Oct. 7, 2010).

<sup>27</sup> Based on the Preliminary Findings Letter and Enforcement’s inclusion of Dr. Chen’s non-matched trades (the “AB-BC”-type trades) in its findings, it appears Enforcement would not be persuaded even if it understood that Dr. Chen’s matched trades were designed to profit.

<sup>28</sup> Moreover, even if all of Dr. Chen’s bids had cleared, that does not mean that his strategy had no “out-of-the-money option” objective. *See Blumenthal*, 135 FERC ¶ 61,117 at P 43; *see also id.* (“Complainants’ own witness conceded that ISO-NE could require capacity-backed energy at \$999/MWh under certain conditions, and that the capacity-backed energy then would have value at that price. That these circumstances did not arise due to New England’s excess capacity market does not alter the potential value of Respondents’ offers for reliability purposes.”).

<sup>29</sup> Preliminary Findings Letter at 2-3, 25.

<sup>30</sup> Pirrong Aff. ¶ 47.

occasions, the transmission loss credit could even be negative, resulting in a charge: for example, on October 11, 2011, the credit was  $-\$0.85/\text{MWh}$ .<sup>31</sup>

In addition, Enforcement overstates the relevance of geographic proximity between node pairs. Enforcement contends that the proximity meant that Mt. Storm and Greenland Gap, for example, “each had similar price movements and therefore similar congestion price spread changes against the MISO interface. The DAM-RTM spread change of the Mt. Storm-to-MISO export would be approximately equal in amount but simply the negative of the DAM-RTM spread change of the MISO-to-Greenland Gap import. . . . The settlement of the two UTC transactions in each export/import pair would reliably net to a de minimis amount of gain or loss.”<sup>32</sup> This is incorrect. While these nodes were geographically proximate, they could still be electrically distinct and trades at these nodes could result in material gain. For example, in July 2008, a UTC bid price of  $\$50/\text{MWh}$  would have resulted in profits of  $\$42.809/\text{MWh}$  ( $\$21.891/\text{MWh}$  from MISO-Greenland Gap and  $\$20.918/\text{MWh}$  from Mt. Storm-MISO). Similarly, the Miami Fort 7 and East Bend nodes, while geographically proximate, would have profited with  $\$50/\text{MWh}$  bids approximately  $\$0.413/\text{MWh}$  for the month of March 2009 ( $\$2.808$  from MISO-Miami Fort 7 and  $-\$2.395$  from East Bend-MISO).

Fourth, despite Enforcement’s attempts to analogize this conduct to that of Mr. Amanat in *Amanat v. SEC*,<sup>33</sup> there was no deceptive or fraudulent element to any of Dr. Chen’s conduct. Enforcement contends that “[l]ike Amanat, [Dr.] Chen sought a credit that was paid based on the volumes of his eligible MWhs, and his receipt of the same decreased the pro-rata share of the money that others would have earned. Additionally, both Amanat’s and [Dr.] Chen’s trades injected false information into the market because neither conduct was motivated by or aimed to capture price differentials.”<sup>34</sup> But this oversimplifies things. Among other things, in *Amanat*, the Third Circuit in an unpublished opinion affirmed the SEC’s findings “under the deferential substantial evidence standard of review,” but indicated that “[w]ere [it] permitted to conduct a *de novo* review of the record, [it] might well reach a different conclusion with respect to certain of the [SEC’s] findings.”<sup>35</sup> Enforcement’s findings will not receive the same deferential standard of review.<sup>36</sup> Furthermore, in Mr. Amanat’s case, there was no analogous SEC order indicating that

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<sup>31</sup> PJM MIC Markets Report at 25 (Dec. 13, 2011), available at <http://www.pjm.com/~media/committees-groups/committees/mic/20111213/20111213-item-15-mic-markets-report.ashx>. Although the PJM Tariff was altered to adjust who could receive TLCs in September 2010, that change would not have prevented the sign of the TLCs from being negative. It was possible during the time that Dr. Chen traded that TLCs assigned to his trades also could have been negative given the right system conditions.

<sup>32</sup> Preliminary Findings Letter at 9.

<sup>33</sup> 2008 WL 7239890 (3d Cir. 2008) (Unpublished Opinion).

<sup>34</sup> Preliminary Findings Letter at 25-26.

<sup>35</sup> *Amanat*, 2008 WL 7239890, at \*2.

<sup>36</sup> 16 U.S.C. § 823b(d)(3)(B) (2012) (“The court shall have authority to review *de novo* the law and the facts involved” in a federal district court action by the Commission to enforce a civil penalty assessment order.).

the targeting the NASDAQ rebate was the predictable result of Commission-approved incentives. In addition, as counsel for Powhatan has previously explained, unlike Dr. Chen, Mr. Amanat acted with scienter because his individual transactions had no legitimate economic purpose: none of them made money or were intended to make money on a trade-by-trade basis.<sup>37</sup> Dr. Chen's trades, in contrast, were a transparent response to Commission-approved price signals, and each trade sought to make money. They imparted no fraudulent or false information: each UTC bid was made openly and communicated information about Dr. Chen's expectations of the PJM markets. Nor was the determination of transmission loss credits simply based on the volumes of trades; it instead depended on a variety of market factors. Finally, the decrease in the pro-rata share of transmission loss credits is irrelevant to the analysis here because even the Commission acknowledged that no entity is entitled to receive them.

*Fifth*, we note that Enforcement focuses on several issues that are not relevant to the analysis of whether it should continue its investigation and pursue findings of violations. Dr. Chen's original up-to congestion strategy is irrelevant because PJM changed the rules in September 2009. The frequency of the paired trades' profitability<sup>38</sup> does not indicate that a strategy is manipulative; as we explained earlier, Dr. Chen's strategy was intended to profit from possibly rare, but high-reward circumstances. Expert testimony and Dr. Chen's own testimony demonstrates that the strategy was risky. And the fact that Dr. Chen sought to reduce the spread risk<sup>39</sup> does not mean that Dr. Chen either eliminated that risk or eliminated the significant upside of his position.

*Finally*, we disagree with many of Enforcement's characterizations of the evidentiary record. With respect to testimony from Dr. Chen's depositions, Enforcement has made it cumbersome to identify quotes by failing to include citations. But as an example, Enforcement characterizes Dr. Chen's *initial* strategy as one that "could be relied upon to produce a low but consistent positive return over time"<sup>42</sup> and then asserts that Dr. Chen "regarded this strategy as a 'low risk, low reward with high reward potential.'"<sup>43</sup> At that point in his testimony, however, Dr. Chen was discussing the "paired" trading strategy where the rejection of one leg would have provided a substantial payout: after he testified he "tend[ed] to put on low risk, low reward with high potential" trades, he explained that with his strategy, "[i]f you're losing money, you could lose cents or tenths of cents. If you're making money, you are also making cents or tenths of cents, *but you also have a big potential of high reward*. When one of the leg is rejected, the other leg could get you a windfall of money. So that's the kind of potential, high-reward

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<sup>37</sup> *In re: Ofirfan Mohammed Amanat*, Release No. 34-54708, 89 S.E.C. Docket 672, 2006 WL 3199181, at \*9 (2006) ("Amanat has not disputed that his wash and matched trades involved no change in beneficial ownership.").

<sup>38</sup> See Preliminary Findings Letter at 9 n.9.

<sup>39</sup> See, e.g., *id.* at 8.

<sup>42</sup> Preliminary Findings Letter at 7.

<sup>43</sup> *Id.*

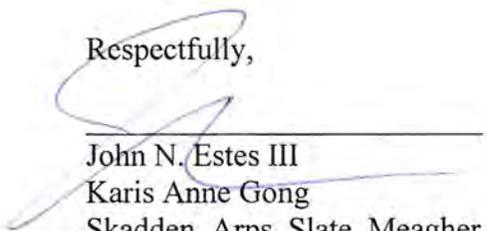
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potential.”<sup>44</sup> Not only has Enforcement failed to consider the important factual context of Dr. Chen’s testimony, but it has repeatedly ignored Dr. Chen’s explanation as to why his “paired” strategy exposed him to an increased likelihood of significant profits.

For the foregoing reasons, we respectfully submit that Enforcement should terminate its investigation of Dr. Chen with a finding of no violations.

Respectfully,



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<sup>44</sup> Deposition of Houlian Chen at 51:4-5, 11-17 (Oct. 7, 2010) (emphasis added).