**UNITED STATES OF AMERICA**
**Before the**
**FEDERAL ENERGY REGULATORY COMMISSION**

**PJM Up-to Congestion Transactions**
**Docket No. IN 10-5-000**

# REPORT OF CHESTER S. SPATT

## RE: POWHATAN ENERGY FUND LLC

## I. INTRODUCTION

I have been retained by Powhatan Energy Fund LLC ("Powhatan") and its counsel, Drinker Biddle & Reath LLP, to provide my expert assessment in the above-captioned Federal Energy Regulatory Commission ("FERC") investigation as to whether Powhatan engaged in manipulative behavior in the Up-to Congestion market by submitting transactions that were influenced, in part, by Marginal Loss Surplus Allocation ("MLSA") credits. This report describes my professional opinion that the transactions and the strategies undertaken by Powhatan and on Powhatan's behalf were not manipulative. The views expressed in this Report are solely my own.

## II. PROFESSIONAL QUALIFICATIONS

In addition to my general expertise regarding financial markets, my career reflects expertise in areas of finance that are directly relevant to these proceedings. My academic work has shown familiarity with the impact of mechanism design on decision-making, energy trading and equilibrium models of forward commodity pricing, equity and derivatives trading, and the impact of regulatory frictions on trading in equity markets. For example, my papers have studied (a) mechanism design in such diverse contexts as price discrimination, IPO allocation and mortgage contracting, (b) models of commodity forward curve pricing across time and products, (c) equity and derivative trading strategies, and (d) the impact of regulatory trading frictions, such as the maker-taker model on valuation and hedging. My work has exhibited a strong practical bent reflected in my understanding of trading and financial regulation as well as valuation and portfolio management decisions. Indeed, many of my papers have been an

outgrowth of my investment strategies and decision-making as well as my regulatory experience and expertise.

I also have a strong background concerning regulatory issues. For example, I am one of the founding members of the Federal Reserve Bank's Model Validation Council, which provides advice on validating the Federal Reserve's "stress tests", and the Systemic Risk Council (founded and chaired by former FDIC Chair Sheila Bair to provide independent advice about systemic risk in the economy). I also am currently a member of the Shadow Financial Regulatory Committee and Financial Economists Roundtable.

I served as Chief Economist of the U.S. Securities and Exchange Commission and Director of its Office of Economic Analysis (while on loan from Carnegie Mellon University) from July 1, 2004 to July 31, 2007, under both Chairman William Donaldson and Chairman Christopher Cox. In that capacity, I was a senior officer of the SEC, responsible for its economics work product and for supervising the economics staff at the agency. I addressed a broad range of regulatory matters across various substantive domains such as trading and markets, investment management, corporate finance and disclosure, and accounting policy, both with respect to rule-making and enforcement issues. I provided advice to the Commissioners and their staffs, as well as the various staff divisions and offices at the Commission, applying economic principles in addressing a broad set of issues in the SEC's regulatory domain as well as a range of industry practices.

I have spoken widely on questions involving the financial markets and securities regulation, and since my departure from the SEC, I have also spoken widely about a broad range

of issues that have emerged both during and in the aftermath of the financial crisis.[1] I have been a keynote or distinguished speaker at a broad set of academic and practitioner conferences, both while serving as Chief Economist and subsequently.

I am a chaired professor of finance at the Tepper School of Business at Carnegie Mellon University in Pittsburgh. I have been an intellectual leader in the finance discipline for decades. For example, I was one of the founders and the second Executive Editor of the *Review of Financial Studies*, which immediately emerged as one of the three elite finance publications that play the dominant role in faculty promotion and tenure decisions at major universities in the United States and globally.

I have been the Pamela R. and Kenneth B. Dunn Professor of Finance since 2008 at the Tepper School of Business at Carnegie Mellon University. I have been a faculty member at Carnegie Mellon since 1979 and a Full Professor with academic tenure since January 1, 1987. I was the first recipient of the Mellon Bank Professorship at Carnegie Mellon, which I held from 1996 until 2008, and then became the first holder of the Dunn Professorship. I received my bachelor's degree in economics from Princeton University (1975) and my master's (1976) and doctorate in economics (1979) from the University of Pennsylvania.

In the mid-1980s, I helped to found the *Review of Financial Studies* and served as one of its founding Editors (1987-90) and its second Executive Editor (1990-93). I was a member of the Founding Committee of the Society for Financial Studies, the sponsoring society of the *Review of Financial Studies*, and served as its third President (1993-96). I served as President of

[1] For example, I presented more than 20 speeches during my service as the Chief Economist of the SEC; these are posted on the SEC's web page, as well as on my Carnegie Mellon web page.

the Western Finance Association (1995-96), as Program Chairman for its 1995 meeting and the Distinguished Speaker at its 2009 meeting. I also currently serve as Treasurer of the Foundation for the Advancement of Research in Financial Economics, an Advisory Editor of the *Journal of Financial Markets* and an Associate Editor of several finance and real estate journals.

In recent years, I have been selected as a Fellow of the TIAA-CREF Institute in 2007 and the Columbia Program on Capital Market Regulation in 2008; elected as a member of the Financial Economists Roundtable in 2006; appointed in 2007 as a member of the Shadow Financial Regulatory Committee; and appointed in 2008 as Senior Economic Advisor to Kalorama Partners (whose CEO is former SEC Chairman Harvey Pitt) and a Research Associate of the National Bureau of Economic Research. In 2009, I received a grant from the Sloan Foundation on "The Industrial Organization of Credit Ratings Agencies"; in July 2010 I was the organizer of the Sloan Foundation and National Bureau of Economic Research "Workshop on the Economics of Credit Rating Agencies"; in 2011, I received a second grant from the Sloan Foundation on "Credit Ratings and Credit Rating Agencies: Developing a Research Network on Markets for Financial Information"; and I organized the Sloan Foundation and National Bureau of Economic Research "Workshop on The Economics of Credit Rating Agencies, Credit Ratings and Information Intermediaries" in July 2013.

I was elected as a director of a private firm that manages investment assets for a very large family trust in June 2010. I also served as a visiting scholar at the Federal Reserve Bank of New York in the fall of 2010 and served on the Academic Advisory Council of the President of the Federal Reserve Bank of Cleveland during August 2012. **Prior to joining the senior staff at the SEC, I served as an expert for the FERC in its 2002-03 investigation of the manipulation of the Western energy markets in the United States**. I served as a member of

the Economic Advisory Board of the NASDAQ in 2000 and 2001 and its chair in 2002. Most of these contexts reflect significant involvement with policy and regulatory issues confronting our capital markets and illustrate the breadth of my expertise with respect to financial regulation and trading.

As my publication record shows, my expertise concerning financial markets is very broad, including such topics as the regulation of financial markets; valuation and economic risk in commodity markets; asset allocation and taxes; the industrial organization of markets; the transmission of information in markets; market efficiency; market microstructure and trading strategies; the initial public offering process; and mortgage contract design, prepayments and valuation. My overall perspectives reflect the breadth of my training, expertise and skills in applying economic and financial theory and my knowledge of the financial markets. My co-authored paper on asset location and taxes in the *Journal of Finance* won the 2004 Paul Samuelson Award from TIAA-CREF for the best paper on lifelong financial security, and our earlier paper on portfolio rebalancing and realizing capital gains was awarded second prize for the *Review of Financial Studies*' 2001 Michael J. Brennan Award. My work on taxation and asset allocation has helped to develop many of the key frameworks for addressing capital gains taxes and portfolio lock-in and also has addressed such issues as asset location, Roth IRA conversion, and estate planning.

My recent teaching specializations have focused on financial markets – specifically, I have been teaching advanced MBA electives on financial regulation, valuation of interest rate-dependent claims (including risk management and hedging), dynamic wealth planning, and real estate.

## III. MATERIALS REVIEWED

I reviewed the 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 (August 9, 2013), the Written Submission on Behalf of Powhatan Energy Fund LLC (October 21, 2011), letter from Drinker Biddle & Reath LLP to FERC Enforcement staff (Docket No. IN10-5-000, August 24, 2012), Written Submission on Behalf of Dr. Houlian Chen (December 13, 2010), decisions by the SEC (November 3, 2007) and Third Circuit Court of Appeals in *Amanat* (March 17, 2008), and reports in the industry press in August 2010 discussing rule changes proposed to FERC by PJM, as well as academic studies cited in this report.

## IV. BACKGROUND

Since August 2010, FERC Enforcement staff has been investigating whether prior scheduling of Up-to Congestion transactions in the PJM Interconnection undertaken by Dr. Houlian Chen on behalf of various funds including Powhatan was manipulative. In a letter to Drinker Biddle & Reath LLP (August 9, 2013), the FERC Enforcement staff described its analysis of the context and responded to arguments that counsel had raised previously. At the heart of the underlying situation was a provision in the PJM tariff that had been modified to provide for MLSA credits to virtual traders who reserved transmission between particular nodes of the system. Dr. Chen became aware of the MLSA credits when he reviewed his monthly PJM statement in November 2009 and noticed the inclusion of retroactive MLSA credits. Then, Dr. Chen began to undertake analyses of these payments to understand them better and later to facilitate adjusting the extent to which he reserved transmission based upon the fact that he

would be able to obtain MLSA credits. In light of the increased attractiveness of reserving transmission, Dr. Chen responded to the pricing incentives by undertaking steps to increase his scale of such trading. He also tried to be sensitive to risks as he scaled up his trading.

## V. ANALYSIS AND CONCLUSIONS

1. Dr. Chen and Powhatan did not attempt to hide their transactions, strategy or intent. They did not create false reports in conjunction with the trades or attempt to mislead either PJM or FERC with respect to the transactions that they undertook. Indeed, the MLSA credits provided were on a trade level basis, in accordance with the PJM tariff without any misrepresentation.

2. In contrast, in the *Amanat* case, upon which the staff heavily relies, Amanat undertook wash sales transactions through a brokerage account (Momentum Securities) whose very purpose was to mislead Nasdaq into thinking that an ECN (MarketXT) that Amanat also had an ownership interest in satisfied a trading volume threshold that would entitle MarketXT to a portion of Nasdaq's rebate of market data revenue.

3. Prior to August 2, 2010, neither Dr. Chen nor Powhatan was notified by FERC or PJM that their response to the pricing incentive was inappropriate. Once they were notified, they immediately stopped undertaking the strategy. This is consistent with a lack of manipulative intent before the notification and, obviously, perfectly appropriate afterwards.

4. To the extent that certain strategies and trades would not have been considered manipulative (e.g., before the August 2 notification), it also is important to reflect on the agent's responsibility to the principals providing the investible funds. Arguably, Dr. Chen, the agent

who was acting as an advisor, would not be fulfilling his fiduciary duty to his clients if he were to leave money "on the table" and not undertake lawful strategies that he had identified within the context of investments permitted in the fund.

5. After PJM recognized the types of trading strategies from a variety of traders that arose under its tariff, it moved swiftly to modify its tariff and asked FERC to approve the modification on an *expedited* basis. This reflected recognition that the tariff design may have had a fundamental imperfection and needed to be fixed. Of course, if the behavior in question was manipulative, future transactions could be attacked directly, especially once traders were placed on notice—which then would be inconsistent with the need to seek FERC approval on an expedited basis. In the absence of trades reflecting manipulation, it would be important to fix the price mechanism expeditiously—especially once PJM alerted other traders to the perceived problem by announcing the contemplated change in pricing structure. This is a contemporaneous indication that the trades were not regarded as manipulation.

6. Since the pricing mechanism by which the MLSA credit was allocated was not particularly transparent, Dr. Chen worked to reverse engineer the mechanism. In most markets our society encourages asset managers to produce information when it is not readily available. We certainly do not require "index investing" of asset managers and investors and indeed encourage investors to create information and seize opportunities. This behavior provides liquidity and price discovery to markets. Of course, in this instance, some of the opportunities were embedded within a poorly conceived pricing algorithm at PJM.

7. Analogously, I have been an advocate of eliminating "maker-taker" rebate pricing in equity trading because of the adverse incentives that it creates, including distorting the important

decision of how to route an order amongst platforms (see Angel, Harris and Spatt (2011, 2013)).[2] In some situations, special rebates (fees) would be available to some intermediaries directing a transaction in a particular fashion, which could distort the routing decision. The resulting distortions in the routing decision have the potential to be quite significant because the order of magnitude of the potential liquidity fees and rebates is not small compared to the broker's revenues. Yet, under the current rules, the distortionary routing induced by maker-taker rebate pricing is not viewed as manipulative, despite defects in the regulatory design that established the economic incentives. Imperfections in the design of regulations that impact the incentives for some underlying transactions do not imply that transactions that exploit such imperfections in the design are manipulative.

8. In structuring the implementation of his trading strategies, Dr. Chen was sensitive to managing the overall portfolio risk and, when evaluating the MLSA credits, he considered the structure of the trading risks that he would face. The sensitivity to managing the risk was appropriate and does not transform permissible trades into ones that are impermissible and manipulative, merely because the FERC Enforcement staff erroneously labels pairs of trades as "wash sales".

9. The mechanism in question potentially provided for MLSA credits for transmission reserved in various directions. There could have been imperfections with such a mechanism, but that would be a matter for FERC or PJM to consider. Dr. Chen's transactions potentially helped identify and expose such imperfections, but his trades were undertaken with a profit motive,

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[2] Angel, J., L. Harris and C. Spatt, 2011, "Equity Trading in the 21$^{st}$ Century," *Quarterly Journal of Finance* 1, 1-53 and Angel, J., L. Harris and C. Spatt, forthcoming, 2013, "Equity Trading in the 21$^{st}$ Century: An Update," *Quarterly Journal of Finance*.

rather than with an intention to manipulate. The underlying imperfections in the mechanism and the profit opportunities created did not hinge on Dr. Chen's matching of some trades *per se*. The imperfections in the mechanism are not the responsibility of Dr. Chen or Powhatan.

10. Indeed, in the current situation, the individual transactions stand on their own. The payments to a combination of positions are linear and additive. This is fundamental to understanding and describing the trading behavior in this situation. In contrast, at the heart of the mechanism and payment in *Amanat* was a combination of transactions being used to obtain special payments (by falsely claiming to have met the activity threshold).

11. There is no suggestion that Dr. Chen attempted to artificially alter the market pricing of the positions that he was purchasing, as in a classic manipulation. Indeed, if prices had changed due to market impact, they would inherently move against the positions that Dr. Chen was acquiring. Such market impact would actually reduce the profitability of Dr. Chen's positions—the opposite of what would be intended in any classic manipulation.

12. Of course, in a broad array of contexts, there are a variety of components to pricing. Consistent with economic theory, we would expect market participants to alter their decisions in response to such pricing incentives. In most situations that would be the primary goal of PJM altering its pricing incentives. Dr. Chen and Powhatan responded to the pricing incentives without misrepresenting their actions or attempting to manipulate the prevailing prices.

13. In the current situation, an important feature of the pricing component was the distribution of MLSA credits, as that will change incentives—whether-or-not that is desired by PJM or the FERC. This simply reflects the maximizing behavior of economic agents. In fact, in the situation here, PJM attempted to finesse this by initially making retroactive adjustments so

that market participants could not respond along the lines of traditional price/substitution effects. While perhaps one would not view such retroactive price adjustments as a "manipulation" by the seller, it is certainly not the mark of transparent pricing and one could imagine *that* should be of interest to regulators. The need by purchasers of transmission to "reverse engineer" the effective MSLA credits suggests that the pricing continued to be somewhat opaque.

14. Theoretical models of mechanism design highlight that traditional mechanisms with desirable incentive features may not satisfy balanced budget conditions, so the awkwardness of particular ways to distribute a surplus is not surprising from a broader perspective in economic theory. Indeed, one of the fundamental teachings of mechanism design theory is that decisions by economic actors are sensitive to their incentives and the underlying economic mechanism. A simple example arises in auction models, where bidding behavior is sensitive to the rules (e.g., optimal bidding strategies are different in first-price seal-bid and oral progressive auctions). It is very appropriate for market participants to act in a manner consistent with the trading mechanism in which they operate.

15. In the context of this matter, Dr. Chen and Powhatan adjusted the extent to which they reserved transmission to take into account the MLSA credits. In many contexts in financial markets, investors can and should respond to the full available incentives. For example, taxable investors should take into account the full after-tax cash flows that they will potentially experience. Mortgage investors should consider the full range of cash flows that they might earn including flows related to loan modifications, transaction costs, and various delivery options (including optionality over the exact amount of loan balance and specific pools to deliver). Several years ago, the government itself undertook a "cash for clunkers" program, whose explicit purpose was to encourage new car purchases (linking a rebate to the retirement of a sufficiently

old vehicle). While many participants responded to the temporary price incentive and adjusted their demand for new vehicles, one would not consider the resulting adjustments in demand to constitute manipulation, such as an acceleration of demand to collect the rebate. These examples reinforce that investors can and should take into account all relevant cash flows in making their investment decisions.

16. There is a very interesting parallel in the securities space of those who trade options with one another to be able to claim a higher proportion of the dividends. The reason that this strategy can be profitable is that not all such options are being exercised, so that occasionally the option holder on the short side can obtain additional benefit when not being randomly assigned an exercise by a clearinghouse. While I served as Chief Economist at the SEC, this was studied by one of my key staff members, Stewart Mayhew, along with Jia Hao and Avner Kalay ("Ex-dividend Arbitrage in Options Markets," 2010, *Review of Financial Studies* 23, 271-303). While these strategies have not been barred by the SEC, they actually are more difficult to justify than the current context for a number of reasons, including: a) option market makers, who themselves have greater responsibilities than traders, are better suited than most other investors to exploit profits from the trade; b) there are offsetting trades of exactly identical instruments, that do not have any execution risk; c) the offsetting positions are solely long and short options in the same instruments; d) there could be ulterior motives for a market maker to perform offsetting trades in stock options; and e) it is likely that it's a typical retail investor, as opposed to the more sophisticated institutional investor, who would not generally be exercising her options prior to the ex-dividend date. This further highlights why it would not be reasonable to view the strategies by Dr. Chen and Powhatan as manipulation.

## VI. SUMMARY

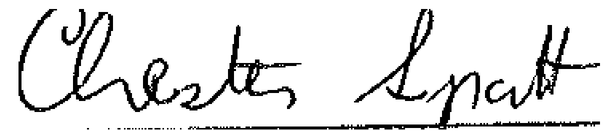
I do not regard the transactions and strategies undertaken on behalf of Powhatan as manipulative. Dr. Chen and Powhatan did not attempt to hide their activities, nor did they create false reports related to their trades or otherwise attempt to mislead PJM or FERC. Unlike a classic manipulation, they did not attempt to artificially manipulate the market pricing of their positions. The MLSA credits that they received were in accordance with the FERC tariff. Once notified that their response to the tariff was not viewed as appropriate, they immediately discontinued the strategy at issue. The actions by Dr. Chen were consistent with the responsibility of an advisor acting in the best interests of his investors, as he was undertaking a lawful strategy in order to maximize the expected risk-adjusted performance of the assets he was managing.

The imperfections in the pricing mechanism are not the responsibility of Dr. Chen and Powhatan, but reflect decisions by PJM and FERC. Typically, part of the reason that a tariff includes particular features is to influence behavior. Indeed, in a variety of contexts the fine structure of markets can lead to various distortions as illustrated by both "maker-taker" rebate pricing distortions, which I have explicitly criticized in some of my writings (see footnote 2) and dividend capture strategies. Here, the fundamental structure of the payments under the tariff appears to have been additive (though opaque), so efforts to manage the risks and trades experienced by Powhatan did not add directly to the MSLA credits received. It is very appropriate for traders to attempt to understand the mechanism of market pricing, even when it is opaque, and to reflect the full set of incentives and cash flows in making their investment decisions.

The foregoing represents my analysis as of the date of this report.

Respectfully submitted,

November 4, 2013



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