

**SUBMISSION COVER SHEET**

**IMPORTANT:** Check box if Confidential Treatment is requested

**Registered Entity Identifier Code (optional):** 17-130 (4 of 4)

**Organization:** New York Mercantile Exchange, Inc. ("NYMEX")

**Filing as a:**  **DCM**  **SEF**  **DCO**  **SDR**

**Please note - only ONE choice allowed.**

**Filing Date (mm/dd/yy):** 05/03/17 **Filing Description:** Initial Listing of Four (4) PJM Western Hub Electricity Futures and Option Contracts

**SPECIFY FILING TYPE**

**Please note only ONE choice allowed per Submission.**

**Organization Rules and Rule Amendments**

- |                          |                                     |            |
|--------------------------|-------------------------------------|------------|
| <input type="checkbox"/> | Certification                       | § 40.6(a)  |
| <input type="checkbox"/> | Approval                            | § 40.5(a)  |
| <input type="checkbox"/> | Notification                        | § 40.6(d)  |
| <input type="checkbox"/> | Advance Notice of SIDCO Rule Change | § 40.10(a) |
| <input type="checkbox"/> | SIDCO Emergency Rule Change         | § 40.10(h) |

**Rule Numbers:**

**New Product**

**Please note only ONE product per Submission.**

- |                                     |                                       |            |
|-------------------------------------|---------------------------------------|------------|
| <input checked="" type="checkbox"/> | Certification                         | § 40.2(a)  |
| <input type="checkbox"/>            | Certification Security Futures        | § 41.23(a) |
| <input type="checkbox"/>            | Certification Swap Class              | § 40.2(d)  |
| <input type="checkbox"/>            | Approval                              | § 40.3(a)  |
| <input type="checkbox"/>            | Approval Security Futures             | § 41.23(b) |
| <input type="checkbox"/>            | Novel Derivative Product Notification | § 40.12(a) |
| <input type="checkbox"/>            | Swap Submission                       | § 39.5     |

**Official Product Name:** See filing

**Product Terms and Conditions (product related Rules and Rule Amendments)**

- |                          |   |                      |
|--------------------------|---|----------------------|
| <input type="checkbox"/> | Certification   | § 40.6(a)            |
| <input type="checkbox"/> | Certification Made Available to Trade Determination     | § 40.6(a)            |
| <input type="checkbox"/> | Certification Security Futures                          | § 41.24(a)           |
| <input type="checkbox"/> | Delisting (No Open Interest)                            | § 40.6(a)            |
| <input type="checkbox"/> | Approval  | § 40.5(a)            |
| <input type="checkbox"/> | Approval Made Available to Trade Determination          | § 40.5(a)            |
| <input type="checkbox"/> | Approval Security Futures                               | § 41.24(c)           |
| <input type="checkbox"/> | Approval Amendments to enumerated agricultural products | § 40.4(a), § 40.5(a) |
| <input type="checkbox"/> | “Non-Material Agricultural Rule Change”                 | § 40.4(b)(5)         |
| <input type="checkbox"/> | Notification  | § 40.6(d)            |

**Official Name(s) of Product(s) Affected:**

**Rule Numbers:**

May 3, 2017

**VIA ELECTRONIC PORTAL**

Mr. Christopher J. Kirkpatrick  
 Office of the Secretariat  
 Commodity Futures Trading Commission  
 Three Lafayette Centre  
 1155 21st Street, N.W.  
 Washington, D.C. 20581

**Re: CFTC Regulation 40.2(a) Certification. Notification Regarding the Initial Listing of Four (4) PJM Western Hub Electricity Futures and Option Contracts. NYMEX Submission No. 17-130 (4 of 4)**

Dear Mr. Kirkpatrick:

New York Mercantile Exchange, Inc. (“NYMEX” or “Exchange”) is notifying the Commodity Futures Trading Commission (“CFTC” or “Commission”) that it is self-certifying the initial listing of four (4) PJM Western Hub electricity futures and option contracts (the “Contracts”) for trading on the CME Globex electronic platform and for submission for clearing on CME ClearPort, effective on Sunday, May 21, 2017 for trade date Monday, May 22, 2017, as described below.

Contract Title	Commodity Code	Rulebook Chapter
PJM Western Hub Real-Time Peak Average Price Option 5 MW	PRT	1392
PJM Western Hub Day-Ahead Peak Average Price Option 5 MW	PDA	1393
PJM Western Hub Real-Time Peak Average Price Monthly Futures 5 MW	SRT	1394
PJM Western Hub Day-Ahead Peak Average Price Monthly Futures 5 MW	SDD	1395

<b>Settlement Type</b>	Financial
<b>Contract Size</b>	5 MW multiplied by the number of peak hours in the contract month
<b>Termination of Trading</b>	<b>Real-Time:</b> Trading terminates on the last business day of the contract month. <b>Day-Ahead:</b> Trading terminates one business day prior to the last business day of the contract month.
<b>Minimum Price Fluctuation</b>	\$0.01 per MWh
<b>Final Settlement Increment</b>	\$0.01 per MWh
<b>Final Settlement Date</b>	Five business day after the last trading day
<b>First Listed Month</b>	June 2017

<b>Listing Schedule</b>	<b>Option (PRT, PDA):</b> Monthly contracts listed for 24 consecutive months <b>Futures (SRT, SDD):</b> Monthly contracts listed for the current year and the next 5 calendar years. Monthly contracts for a new calendar year will be added following the termination of trading in the December contract of the current year
<b>CME Globex Trade Matching Algorithm</b>	F: First In, First Out (FIFO)
<b>Block Trade Minimum Threshold</b>	5 contracts
<b>Exercise Price Intervals and Listings (for option)</b>	Dynamic strike price generation in increments of \$0.50 per MWh
<b>Exercise Type</b>	European-style option

### Exchange Fees

<b>Exchange Fees</b>	<b>Member</b>	<b>Non-Member</b>	<b>International Incentive Programs (IIP/IVIP)</b>
CME Globex	\$7.00	\$8.00	\$8.00
EFP	\$7.00	\$8.00	
Block	\$7.00	\$8.00	
EFR/EOO	\$7.00	\$8.00	
Agency Cross	\$7.00	\$8.00	

<b>Processing Fees</b>	<b>Member</b>	<b>Non-Member</b>
Cash Settlement	\$3.50	\$4.00
<b>Other Fees</b>		
Facilitation Fee		\$0.05
Give-Up Surcharge		\$0.05
Position Adjustment/Transfer		\$0.10

### Trading and Clearing Hours

CME Globex and CME ClearPort	Sunday - Friday 6:00 p.m. - 5:00 p.m. (5:00 p.m. - 4:00 p.m. Central Time/CT) with a 60-minute break each day beginning at 5:00 p.m. (4:00 p.m. CT)
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The Exchange is also notifying the CFTC that it is self-certifying the insertion of the terms and conditions for the Contracts into the Position Limit, Position Accountability and Reportable Level Table and Header Notes located in the Interpretations and Special Notices Section of Chapter 5 of the NYMEX Rulebook in relation to the listing of the Contracts. These terms and conditions establish the all month/any one month accountability levels, expiration month position limit, reportable level, and aggregation allocation for the Contracts. The two (2) new futures contracts (SRT and SDD) trade at spot and forward months.

Consequently, the all month/any one month accountability levels and expiration month position limit of existing contracts in the same underlying market will aggregate into SRT or SDD. As a result, the positions for the existing PJM Western Hub Real-Time Peak Calendar-Month 2.5 MW Futures (JM), PJM Western Hub Real-Time Peak Calendar-Day 5 MW Futures (JD) and PJM West Hub Real Time 50 MW Same Day Option (J01-J31) contracts will aggregate into PJM Western Hub Real-Time Peak Average Price Monthly Futures 5 MW (SRT) instead of the existing PJM Western Hub Real-Time Peak Calendar-Month 2.5 MW Futures (JM). Additionally, all contracts currently aggregating into PJM Western Hub Peak Calendar-Month Real-Time LMP Futures (L1) in non-spot month for single month and all month accountability level purposes will aggregate into SRT. Note that SRT's listing schedule is consistent with that of L1. The spot month limit, single month and all month accountability level for PJM Western Hub Day-Ahead Peak Calendar-Day 5 MW Futures (PWP) will aggregate into PJM Western Hub Day-Ahead Peak Average Price Monthly Futures 5 MW (SDD). Note that the above position limit aggregation amendments will not impact the position limits currently applied for each product. Please refer to Appendix B attached under separate cover.

In addition, NYMEX is self-certifying block trading on the Contracts with a minimum block threshold of five (5) contracts. This minimum block threshold level of five (5) contracts is aligned with the Exchange's existing electricity contracts.

The Exchange reviewed the designated contract market core principles ("Core Principles") as set forth in the Commodity Exchange Act ("CEA" or "Act") and identified that the Contracts may have some bearing on the following Core Principles:

- **Compliance with Rules:** Trading in the Contracts will be subject to all NYMEX Rules, including prohibitions against fraudulent, noncompetitive, unfair and abusive practices as outlined in NYMEX Rule Chapter 4, the Exchange's trade practice rules, the majority of which are contained in Chapter 5 and Chapter 8 of the NYMEX Rulebook, and the dispute resolution and arbitration procedures of NYMEX Rule Chapter 6. As with all products listed for trading on one of CME Group's designated contract markets, trading activity in the Contracts will be subject to monitoring and surveillance by CME Group's Market Regulation Department. The Market Regulation Department has the authority to exercise its investigatory and enforcement power where potential rule violations are identified.
- **Contract Not Readily Subject to Manipulation:** The Contracts are not readily subject to manipulation as a result of the deep liquidity and robustness of the underlying cash market.
- **Monitoring of Trading:** Trading in the Contracts will be subject to the Rules of NYMEX, which include prohibitions on manipulation, price distortion, and disruption to the cash settlement process. As with any new product listed for trading on a CME Group designated contract market, trading activity in the futures Contracts proposed herein will be subject to monitoring and surveillance by CME Group's Market Regulation Department.
- **Position Limitations or Accountability:** The speculative position limits for the Contracts as demonstrated in this submission are consistent with the Commission's guidance.
- **Availability of General Information:** The Exchange will publish on its website information regarding the Contracts' specifications, terms, and conditions, as well as daily trading volume, open interest, and price information.
- **Daily Publication of Trading Information:** The Exchange will publish the Contracts' trading volumes, open interest levels, and price information daily on its website and through quote vendors for the Contracts.
- **Execution of Transactions:** The Contracts will be listed for trading on the CME Globex electronic trading and for clearing through CME ClearPort. The CME Globex trading venue provides for

competitive and open execution of transactions. CME Globex affords the benefits of reliability and global connectivity.

- **Trade Information**: All requisite trade information for the Contracts will be included in the audit trail and is sufficient for the Market Regulation Department to monitor for market abuse.
- **Financial Integrity of Contract**: The Contracts will be cleared by the CME Clearing House, a derivatives clearing organization registered with the CFTC and subject to all CFTC regulations related thereto.
- **Protection of Market Participants**: NYMEX Rulebook Chapters 4 and 5 set forth multiple prohibitions that preclude intermediaries from disadvantaging their customers. These rules apply to trading in all of the Exchange's competitive trading venues.
- **Disciplinary Procedures**: Chapter 4 of the Rulebook contains provisions that allow the Exchange to discipline, suspend or expel members or market participants that violate the Rulebook. Trading in the Contracts will be subject to Chapter 4, and the Market Regulation Department has the authority to exercise its enforcement power in the event rule violations in these products are identified.
- **Dispute Resolution**: Disputes with respect to trading in the Contracts will be subject to the arbitration provisions set forth in Chapter 6 of the Rulebook. Chapter 6 allows all nonmembers to submit a claim for financial losses resulting from transactions on the Exchange to arbitration. A member named as a respondent in a claim submitted by a nonmember is required to participate in the arbitration pursuant to Chapter 6. Additionally, the Exchange requires that members resolve all disputes concerning transactions on the Exchange via arbitration.

Pursuant to Section 5c(c) of the Act and CFTC Regulation 40.2(a), the Exchange hereby certifies that listing the Contracts complies with the Act, including regulations under the Act. There were no substantive opposing views to listing of the Contracts.

The Exchange certifies that this submission has been concurrently posted on the Exchange's website at <http://www.cmegroup.com/market-regulation/rule-filings.html>.

Should you have any questions concerning the above, please contact the undersigned at (212) 299-2200 or via e-mail at [CMEGSubmissionInquiry@cmegroup.com](mailto:CMEGSubmissionInquiry@cmegroup.com).

Sincerely,

/s/ Christopher Bowen  
Managing Director and Chief Regulatory Counsel

Attachments: Appendix A: NYMEX Rulebook Chapters  
Appendix B: Position Limit, Position Accountability, and Reportable Level Table in Chapter 5 of the NYMEX Rulebook (attached under separate cover)  
Appendix C: NYMEX Rule 588.H. – (“Globex Non-Reviewable Trading Ranges”) Table  
Appendix D: Cash Market Overview and Analysis of Deliverable Supply

## **APPENDIX A**

### **NYMEX Rulebook**

### **Chapter 1392**

## **PJM Western Hub Real-Time Peak Average Price Option 5 MW**

### **1392100. SCOPE OF CHAPTER**

This chapter is limited in application to put and call options on PJM Western Hub Real-Time Peak Average Price Monthly Futures 5 MW (SRT). The procedures for trading, clearing and cash settlement of this contract, and any other matters not specifically covered herein shall be governed by the general rules of the Exchange.

### **1392101. OPTION CHARACTERISTICS**

#### **1392101.A. Trading Schedule**

The hours of trading for this contract shall be determined by the Exchange.

#### **1392101.B. Contract Quantity**

The contract quantity shall be the number of peak hours during the contract month multiplied by 5 megawatts for each peak hour. The daily flow is 80 MWh with 16 peak hours and 5 MW each hour. One contract shall equal the daily flow multiplied by the number of peak days in the contract month.

#### **1392101.C. Trading Unit**

A PJM Western Hub Real-Time Peak Average Price Call Option 5 MW traded on the Exchange represents the difference between the final settlement price of the underlying PJM Western Hub Real-Time Peak Average Price Monthly Futures 5 MW less the strike price, or zero, whichever is greater, multiplied by the contract quantity.

A PJM Western Hub Real-Time Peak Average Price Put Option 5 MW traded on the Exchange represents the difference between the strike price and the final settlement price of the underlying PJM Western Hub Real-Time Peak Average Price Monthly Futures 5 MW, or zero, whichever is greater, multiplied by the contract quantity.

#### **1392101.D. Peak Days and Peak Hours**

Peak day shall mean a Monday through Friday, excluding North American Electric Reliability Corporation holidays. Peak hour shall mean from Hour Ending (HE) 0800 Eastern Prevailing Time (EPT) through HE 2300 EPT.

#### **1392101.E. Price Increments**

Prices shall be quoted in dollars and cents per megawatt hour (MWh). The minimum price increment shall be \$0.01 per MWh. Cabinet price of \$1.00 per contract may occur. The option contract shall not be subject to price fluctuation limitations.

#### **1392101.F. Position Limits, Exemptions, Position Accountability and Reportable Levels**

The applicable position limits and/or accountability levels, in addition to the reportable levels, are set forth in the Position Limit, Position Accountability and Reportable Level Table in the Interpretations & Special Notices Section of Chapter 5.

A Person seeking an exemption from position limits for bona fide commercial purposes shall apply to the Market Regulation Department on forms provided by the Exchange, and the Market Regulation Department may grant qualified exemptions in its sole discretion.

Refer to Rule 559 for requirements concerning the aggregation of positions and allowable exemptions from the specified position limits.

#### **1392101.G. Termination of Trading**

Trading shall cease on the last business day of the contract month.

#### **1392101.H. Type Option**

The option is a European-style cash settled option.

### **1392102. EXERCISE PRICES**

Transactions shall be conducted for option contracts as set forth in Rule 300.20.

### **1392103. DISCLAIMER**

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## Chapter 1393

### PJM Western Hub Day-Ahead Peak Average Price Option 5 MW

#### 1393100. SCOPE OF CHAPTER

This chapter is limited in application to put and call options on PJM Western Hub Day-Ahead Peak Average Price Monthly Futures 5 MW (SDD). The procedures for trading, clearing and cash settlement of this contract, and any other matters not specifically covered herein shall be governed by the general rules of the Exchange.

#### 1393101. OPTION CHARACTERISTICS

##### 1393101.A. Trading Schedule

The hours of trading for this contract shall be determined by the Exchange.

##### 1393101.B. Contract Quantity

The contract quantity shall be the number of peak hours during the contract month multiplied by 5 megawatts for each peak hour. The daily flow is 80 MWh with 16 peak hours and 5 MW each hour. One contract shall equal the daily flow multiplied by the number of peak days in the contract month.

##### 1393101.C. Trading Unit

A PJM Western Hub Day-Ahead Peak Average Price Call Option 5 MW traded on the Exchange represents the difference between the final settlement price of the underlying PJM Western Hub Day-Ahead Peak Average Price Monthly Futures 5 MW less the strike price, or zero, whichever is greater, multiplied by the contract quantity.

A PJM Western Hub Day-Ahead Peak Average Price Put Option 5 MW traded on the Exchange represents the difference between the strike price and the final settlement price of the underlying PJM Western Hub Day-Ahead Peak Average Price Monthly Futures 5 MW, or zero, whichever is greater, multiplied by the contract quantity.

##### 1393101.D. Peak Days and Peak Hours

Peak day shall mean a Monday through Friday, excluding North American Electric Reliability Corporation holidays. Peak hour shall mean from Hour Ending (HE) 0800 Eastern Prevailing Time (EPT) through HE 2300 EPT.

##### 1393101.E. Price Increments

Prices shall be quoted in dollars and cents per megawatt hour (MWh). The minimum price increment shall be \$0.01 per MWh. Cabinet price of \$1.00 per contract may occur. The option contract shall not be subject to price fluctuation limitations.

##### 1393101.F. Position Limits, Exemptions, Position Accountability and Reportable Levels

The applicable position limits and/or accountability levels, in addition to the reportable levels, are set forth in the Position Limit, Position Accountability and Reportable Level Table in the Interpretations & Special Notices Section of Chapter 5.

A Person seeking an exemption from position limits for bona fide commercial purposes shall apply to the Market Regulation Department on forms provided by the Exchange, and the Market Regulation Department may grant qualified exemptions in its sole discretion.

Refer to Rule 559 for requirements concerning the aggregation of positions and allowable exemptions from the specified position limits.

##### 1393101.G. Termination of Trading

Trading shall cease on the business prior to the last business day of the contract month.

##### 1393101.H. Type Option

The option is a European-style cash settled option.

#### 1393102. EXERCISE PRICES

Transactions shall be conducted for option contracts as set forth in Rule 300.20.

#### 1393103. DISCLAIMER

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## Chapter 1394

### PJM Western Hub Real-Time Peak Average Price Monthly Futures 5 MW

#### 1394100. SCOPE OF CHAPTER

This chapter is limited in application to trading of PJM Western Hub Real-Time Peak Average Price Monthly Futures 5 MW. The procedures for trading, clearing and cash settlement of this contract, and any other matters not specifically covered herein shall be governed by the general rules of the Exchange.

#### 1394101. CONTRACT SPECIFICATIONS

Floating Price will be equal to the arithmetic average of the PJM Western Hub Real Time LMP for peak hours provided by PJM Interconnection, LLC for the contract month. For settlement of this contract, the prices provided by PJM will be considered final on the Payment Date and will not be subject to any further adjustment.

#### 1394102. TRADING SPECIFICATIONS

The number of days open for trading at a given time shall be determined by the Exchange.

##### **1394102.A. Trading Schedule**

The hours of trading for this contract shall be determined by the Exchange.

##### **1394102.B. Trading Unit**

The contract quantity shall be the number of peak hours during the contract month multiplied by 5 megawatts for each peak hour. The daily flow is 80 MWh with 16 peak hours and 5 MW each hour. One contract shall equal the daily flow multiplied by the number of peak days in the contract month.

Each futures contract shall be valued as the contract quantity multiplied by the settlement price.

##### **1394102.C. Peak Days and Peak Hours**

Peak day shall mean a Monday through Friday, excluding North American Electric Reliability Corporation holidays. Peak hour shall mean from Hour Ending (HE) 0800 Eastern Prevailing Time (EPT) through HE 2300 EPT.

##### **1394102.D. Price Increments**

Prices shall be quoted in U.S. dollars and cents per MWh. The minimum price fluctuation shall be \$0.01 per MWh.

##### **1394102.E. Position Limits, Exemptions, Position Accountability and Reportable Levels**

The applicable position limits and/or accountability levels, in addition to the reportable levels, are set forth in the Position Limit, Position Accountability and Reportable Level Table in the Interpretations & Special Notices Section of Chapter 5.

A Person seeking an exemption from position limits for bona fide commercial purposes shall apply to the Market Regulation Department on forms provided by the Exchange, and the Market Regulation Department may grant qualified exemptions in its sole discretion.

Refer to Rule 559 for requirements concerning the aggregation of positions and allowable exemptions from the specified position limits.

##### **1394102.F. Termination of Trading**

Trading shall cease on the last business day of the contract month.

##### **1394102.G. Payment Date**

Payment Date shall be five (5) business days following termination of trading.

#### 1394103. FINAL SETTLEMENT

Delivery under the contract shall be by cash settlement. Final settlement, following termination of trading for a contract month, will be based on the Floating Price. The final settlement price will be the Floating Price calculated for each contract month.

#### 1394104. DISCLAIMER

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## Chapter 1395

### PJM Western Hub Day-Ahead Peak Average Price Monthly Futures 5 MW

#### 1395100. SCOPE OF CHAPTER

This chapter is limited in application to trading of PJM Western Hub Day-Ahead Peak Average Price Monthly Futures 5 MW. The procedures for trading, clearing and cash settlement of this contract, and any other matters not specifically covered herein shall be governed by the general rules of the Exchange.

#### 1395101. CONTRACT SPECIFICATIONS

Floating Price will be equal to the arithmetic average of the PJM Western Hub Day Ahead LMP for peak hours provided by PJM Interconnection, LLC for the contract month. For settlement of this contract, the prices provided by PJM will be considered final on the Payment Date and will not be subject to any further adjustment.

#### 1395102. TRADING SPECIFICATIONS

The number of days open for trading at a given time shall be determined by the Exchange.

##### **1395102.A. Trading Schedule**

The hours of trading for this contract shall be determined by the Exchange.

##### **1395102.B. Trading Unit**

The contract quantity shall be the number of peak hours during the contract month multiplied by 5 megawatts for each peak hour. The daily flow is 80 MWh with 16 peak hours and 5 MW each hour. One contract shall equal the daily flow multiplied by the number of peak days in the contract month. Each futures contract shall be valued as the contract quantity multiplied by the settlement price.

##### **1395102.C. Peak Days and Peak Hours**

Peak day shall mean a Monday through Friday, excluding North American Electric Reliability Corporation holidays. Peak hour shall mean from Hour Ending (HE) 0800 Eastern Prevailing Time (EPT) through HE 2300 EPT.

##### **1395102.D. Price Increments**

Prices shall be quoted in U.S. dollars and cents per MWh. The minimum price fluctuation shall be \$0.01 per MWh.

##### **1395102.E. Position Limits, Exemptions, Position Accountability and Reportable Levels**

The applicable position limits and/or accountability levels, in addition to the reportable levels, are set forth in the Position Limit, Position Accountability and Reportable Level Table in the Interpretations & Special Notices Section of Chapter 5.

A Person seeking an exemption from position limits for bona fide commercial purposes shall apply to the Market Regulation Department on forms provided by the Exchange, and the Market Regulation Department may grant qualified exemptions in its sole discretion.

Refer to Rule 559 for requirements concerning the aggregation of positions and allowable exemptions from the specified position limits.

##### **1395102.F. Termination of Trading**

Trading shall cease on the business prior to the last business day of the contract month.

##### **1395102.G. Payment Date**

Payment Date shall be five (5) business days following termination of trading.

#### 1395103. FINAL SETTLEMENT

Delivery under the contract shall be by cash settlement. Final settlement, following termination of trading for a contract month, will be based on the Floating Price. The final settlement price will be the Floating Price calculated for each contract month.

#### 1395104. DISCLAIMER

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**APPENDIX B**

**Position Limit, Position Accountability, and Reportable Level Table  
in Chapter 5 of the NYMEX Rulebook**

(Attached under separate cover)

## APPENDIX C

### NYMEX Rule 588.H. (“Globex Non-Reviewable Ranges”) Table

(Additions are underscored)

Instrument Name	Globex Symbol	Globex Non-Reviewable Ranges (NRR)	NRR: Globex Format	NRR: Ticks
<u>PJM Western Hub Real-Time Peak Average Price Monthly Futures 5 MW</u>	<u>SRT</u>	<u>\$2.00 per MWh</u>	<u>200</u>	<u>200</u>
<u>PJM Western Hub Day-Ahead Peak Average Price Monthly Futures 5 MW</u>	<u>SDD</u>	<u>\$2.00 per MWh</u>	<u>200</u>	<u>200</u>

Instrument	Bid/Ask Reasonability	Non-Reviewable Range (NRR)
<u>PJM Western Hub Real-Time Peak Average Price Option 5 MW</u>	<u>The greater of the delta times the underlying futures' non-reviewable range or 20% of the fair value premium up to the underlying futures' non-reviewable range with a minimum reasonability of \$1.00</u>	<u>The greater of delta times the underlying futures non-reviewable range or 20% of premium up to 1/4 of the underlying futures' non-reviewable range with a minimum of 1 tick</u>
<u>PJM Western Hub Day-Ahead Peak Average Price Option 5 MW</u>	<u>The greater of the delta times the underlying futures' non-reviewable range or 20% of the fair value premium up to the underlying futures' non-reviewable range with a minimum reasonability of \$1.00</u>	<u>The greater of delta times the underlying futures non-reviewable range or 20% of premium up to 1/4 of the underlying futures' non-reviewable range with a minimum of 1 tick</u>

## **APPENDIX D**

### **PJM**

PJM Interconnection LLC (“PJM”) is a regional transmission organization (RTO) that coordinates the movement of electricity in all or parts of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia, and the District of Columbia. In 1997, PJM began operating the nation's first regional, bid-based, hourly energy market. PJM enables participants to buy and sell power, schedule transactions, and reserve transmission service. Acting as a neutral, independent party, PJM operates a competitive wholesale electricity market and manages the high-voltage electricity grid to ensure reliability. PJM prices power at numerous utility zones as well as for hubs, including the Western Hub, Northern Illinois Hub, AEP Dayton Hub, and Eastern Hub.

### **MARKET COMPETITIVENESS AND OVERSIGHT**

Independent system operators (ISO) and RTO markets manage the generation and transmission of electricity within their respective service areas. ISO/RTO markets are highly competitive, and were established following Federal Energy Regulatory Commission (FERC) orders. FERC Order No. 888 identified barriers to competitive wholesale electricity markets and required that those barriers be removed. FERC Order No. 889 established open access to system information. FERC Order No. 2000 provided the framework for the formation of ISO/RTO markets. Under FERC oversight -PJM operates and monitors its respective market to ensure the competitiveness and reliability of the electricity system. Specifically, FERC monitors and investigates energy markets with respect to manipulation, and it enforces regulatory requirements through imposition of civil penalties and other means. Specifically, the Office of Enforcement within FERC ensures compliance with FERC statutes, rules, and orders. In this regard, the enforcement office monitors energy markets and gathers relevant data to prohibit market manipulation, fraud, and violations of electric reliability standards.

The ISO/RTOs are also monitored by the North American Electric Reliability Corporation (NERC), a non-profit organization made up of stakeholders responsible for developing reliability standards (both seasonal and long term) and ensuring compliance with those standards. NERC has various committees, sub-committees, task forces, and working groups investigating and analyzing system disruptions to prevent market manipulation. NERC is subject to oversight by FERC.

In addition to governmental and industry organizations, each ISO/RTO is monitored by an independent market monitor. The market monitors regularly evaluate the competitiveness of their respective markets, recommend improvement plans, and review the implementation of those plans. Market monitors publish quarterly and annual market reports to raise public awareness of the state of their respective markets.

### **DAY-AHEAD VERSUS REAL-TIME MARKET**



PJM offers two basic energy markets for physical market participants: a real-time (or spot) market and a day-ahead market. The real-time and day-ahead markets are interrelated as the day-ahead market is a forward market for pricing power that is delivered during a given hour on the following day. In contrast, the real-time market prices electricity that flows during a particular hour on the same day. Each hour has a separate auction in the day-ahead and real-time markets. Moreover, the day-ahead and real-time markets adopt a competitive auction process developed by the stakeholders from both the generation and load sides. Hourly market-clearing prices or locational marginal prices (LMPs) are published for both the day-ahead and real-time markets to reflect dynamic and competitive pricing and are publicly available on a timely basis to ensure competitiveness and transparency. This submission includes contracts based on real-time and day-ahead market.

### **DELIVERABLE SUPPLY ESTIMATION**

Load data reflects the amount of electricity that is produced and consumed in real time. Electricity is almost prohibitively expensive to be stored. Consequently, the generated electricity transmitted through grid is produced and consumed simultaneously to ensure grid operating safety. As such, the RTO/ISO, which is regulated by FERC and monitored internally and by third party, makes economic dispatch decisions in real time for generation to meet load requirement. Based on the Commission's definition, deliverable supply measures the quantity of the commodity meeting a derivative contract's specifications that can reasonably be expected to be readily available for the market. More specifically, Appendix C to Part 38 of the Commission's regulations provides that the term "deliverable supply" means the quantity of the commodity meeting the contract's delivery specifications that reasonably can be expected to be readily available to short traders and salable by long traders at its market value in normal cash marketing channels at the contract's delivery points during the specified delivery period, barring abnormal movement in interstate commerce. Thus, the analysis of deliverable supply is based on actual load information reported by an RTO/ISO.

The deliverable supply for PJM Western Hub is based on the average one-hour load realized for the period of January 11, 2014 to January 11, 2017. The average one-hour load is 48,119 MWh<sup>1</sup>. Different types of generators are dispatched based on their cost of generation, the real-time load requirement and grid transmission constraint. Low cost generation resources such as renewables, hydro and nuclear are dispatched and run at high or near full capacity, while high cost generation resources such as gas, coal or fuel oil generators usually do not run at full capacity even though they are essential to meet additional load requirement. Taking this into consideration, the average load for an extended historic period reasonably

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<sup>1</sup> The data was collected using NRGSTREAM application.

represents the deliverable supply of any one hour of the day, incorporating the variations in generation resource availability, transmission constraint and load requirement pattern. In this period, peak hours average load (51,068 MWh) exceeds off-peak hours average load (42,219 MWh) by approximately 21%. This difference in load results from user demand and economic dispatch of generation resources. The available generation resources and grid transmission capability do not fluctuate with demand between peak and off-peak hours. Electricity generation and load also experience seasonality in this market, usually with higher load in summer for cooling and winter for heating. The average load that includes a 3-year historic load data effectively smooths the estimate and incorporates seasonality to represent the average deliverable supply during this period. Market participants manage risk in the day-ahead, real-time and both the day-ahead and real-time markets depending on their view of the market. As a one-day forward market, the day-ahead market routinely converges with the real-time market as ISO/RTO strives to reduce volatility in real-time market pricing. Since these two markets share the same physical infrastructure, generation and load are highly correlated. Therefore, considering the peak/off-peak load difference, seasonality and convergence between day-ahead and real-time markets, the average load is applied to the deliverable supply calculations for both peak and off-peak contracts in real-time and day-ahead markets. The Exchange recognizes that there is a small percentage of bilateral deals (12.9%<sup>2</sup> in 2016) executed in the electricity wholesale market. According to market participants, the electricity bought or sold through bilateral deals are routinely resold into the market by the electricity wholesale marketer, thus not effectively reducing the deliverable supply. It is assumed that there are 21 peak days and 9 off-peak days, thus 336 peak hours and 384 off-peak hours in PJM market. Therefore, monthly deliverable supply is 16,167,984 MWh for peak hours and 18,477,696 MWh for off-peak hours.

For real time market, the position limit for PJM Western Hub Real-Time Peak Average Price Monthly Futures 5 MW product (SRT) is set at 2,140 contracts corresponding to approximately 23% of current deliverable supply. Positions for PJM Western Hub Real-Time Peak Average Price Option 5 MW (PRT) will be aggregated into PJM Western Hub Real-Time Peak Average Price Monthly Futures 5 MW (SRT). The contract size for SRT is 80 MWh per peak day based on an average of 21.25 peak days in a calendar month or approximately 1,700 MWh.

For day ahead market, the position limit for PJM Western Hub Day-Ahead Peak Average Price Monthly Futures 5 MW product (SDD) is set at 2,140 contracts, corresponding to approximately 23% of current deliverable supply. Positions for PJM Western Hub Day-Ahead Peak Average Price Option 5 MW (PDA) will be aggregated into PJM Western Hub Day-Ahead Peak Average Price Monthly Futures 5 MW (SDD).

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<sup>2</sup> [http://www.monitoringanalytics.com/reports/PJM\\_State\\_of\\_the\\_Market/2016/2016-som-pjm-sec3.pdf](http://www.monitoringanalytics.com/reports/PJM_State_of_the_Market/2016/2016-som-pjm-sec3.pdf)

The contract size for SDD is 80 MWH per peak day based on an average of 21.25 peak days in a calendar month or approximately 1,700 MWh.

**Table 1: New PJM Western Hub Futures and Option Contracts**

Contract Title	Commodity Code
PJM Western Hub Real-Time Peak Average Price Option 5 MW	PRT
PJM Western Hub Day-Ahead Peak Average Price Option 5 MW	PDA
PJM Western Hub Real-Time Peak Average Price Monthly Futures 5 MW	SRT
PJM Western Hub Day-Ahead Peak Average Price Monthly Futures 5 MW	SDD

The two (2) new futures contracts (SRT and SDD) trade at spot and forward months. Consequently, the all month/any one month accountability levels and expiration month position limit of existing contracts in the same underlying market will aggregate into SRT or SDD. As a result, the positions for the existing PJM Western Hub Real-Time Peak Calendar-Month 2.5 MW Futures (JM), PJM Western Hub Real-Time Peak Calendar-Day 5 MW Futures (JD) and PJM West Hub Real Time 50 MW Same Day Option (J01-J31) contracts will aggregate into PJM Western Hub Real-Time Peak Average Price Monthly Futures 5 MW (SRT) instead of the existing PJM Western Hub Real-Time Peak Calendar-Month 2.5 MW Futures (JM). Additionally, all contracts currently aggregating into PJM Western Hub Peak Calendar-Month Real-Time LMP Futures (L1) in non-spot month for single month and all month accountability level purposes will aggregate into SRT. Note that SRT's listing schedule is consistent with that of L1. The spot month limit, single month and all month accountability level for PJM Western Hub Day-Ahead Peak Calendar-Day 5 MW Futures (PWP) will aggregate into PJM Western Hub Day-Ahead Peak Average Price Monthly Futures 5 MW (SDD). Note that the above position limit aggregation amendments will not impact the position limits currently applied for each product.