

Methodology and specifications guide

M2MS – Power methodology

Latest update: May 2018

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INTRODUCTION

Platts' methodologies are designed to produce forward curves that are representative of market value, and of the particular markets to which they relate. Methodology documents describe the specifications for various products reflected by Platts' Market Data, the processes and standards Platts adheres to in collecting data, and the methods by which Platts arrives at final values for publication. These guides are freely available on Platts' website for public review.

Platts discloses publicly the days of publication for its forward curves, and the times during each trading day in which Platts considers transactions in determining its forward curves. This schedule of publication is available on Platts' website, at the following link: <http://www.platts.com/HolidayHome>.

The dates of publication and the curve production periods are subject to change in the event of outside circumstances that affect Platts' ability to adhere to its normal publication schedule. Such circumstances include network outages, power failures, acts of terrorism and other situations that result in an interruption in Platts' operations at one or more of its worldwide offices. In the event that any such circumstance occurs, Platts will endeavor, whenever feasible, to communicate publicly any changes to its publication schedule and curve production periods, with as much advance notice as possible.

All Platts methodologies reflect Platts' commitment to maintaining best practices.

Platts' methodologies have evolved to reflect changing market conditions through time, and will continue to evolve as markets change. A revision history, a cumulative summary of changes to this and future updates, is included at the end of the methodology.

How this methodology statement is organized

This description of methodology for forward curves is divided into seven major parts (I–VII) that parallel the entire process of producing the forward curves.

- Part I describes what goes into Platts forward curves, including details on what market data is used.
- Part II describes the security practices that Platts uses in handling and treating data.
- Part III is a detailed account of how Platts collects market data, and what Platts does with the data to formulate its forward curves..
- Part IV explains the process for verifying that published curves comply with Platts' standards.
- Part V lays out the verification and correction process for revising published curves and the criteria Platts uses to determine when it publishes a correction.
- Part VI explains how users of Platts forward curves can contact Platts for clarification of data that has been published, or to register a complaint. It also describes how to find out more about Platts' complaint policies.
- Part VII is a list of detailed specifications for the trading locations and products for which Platts publishes forward curves in this commodity.

PART I: DATA QUALITY AND DATA SUBMISSION

Platts aggregates multiple data sources to produce a single cross-checked series of curves using an open and validated methodology, offering clients a view of forward values that can be used for independent valuation, mark-to-market validation

processes, strategic decision support, or other portfolio risk management processes. The product also provides a valuable source of information for evaluating and verifying internally generated values for marking forward positions.

Platts maintains comprehensive historical data on spot and forward prices of individual locations. This dataset is used to define and statistically verify temporal and spatial relationships among the hubs. This data, along with ICE market data, is a primary and critical input into the CRS (Commodity Risk Solutions) quantitative curve generation process and is an asset that is unique to Platts.

Platts and IntercontinentalExchange (ICE) reached an agreement in October 2007 to combine the data-gathering capabilities of each company with Platts' expertise and avowed methodology systems to enhance the rapidly growing forward curve product offerings in North American natural gas and electricity.

Under the agreement Platts incorporates ICE settlement and intra-day forward trading activity in the Electricity markets on the ICE platform, including daily End of Day and Cleared Settlement reports as key inputs into the Platts M2MS (quantitatively derived using settlement prices) curves. Platts benefits from this relationship by having the exclusive right to use ICE intra-day and end of day data for the purposes of forward curve derivation.

General principles applicable to all derivative or forward markets

- Forward prices are a reflection of ICE Market Data and are subject to careful review.
- Platts tracks values and interrelationships over the whole course of the day.
- Information is cross-checked to ensure data integrity.

- Illiquid markets may be estimated as spreads relative to active liquid markets.
- Platts gives highest priority to available market data but allows for the use of model data to fill out curves where market data provide no indications.
- Relevant market information is considered even in the development of prices for hubs where no ICE Market Data data is available.

PART II: SECURITY AND CONFIDENTIALITY

Data is stored in a secure network, in accordance with Platts' policies and procedures.

PART III: CALCULATING FORWARD CURVES

The following section describes how Platts uses the transactional data it has collected in the manner described in Part 1, to formulate the forward curves.

1. Receive ICE pre-settlement data.
2. Shape ICE settlement data to increase granularity to monthly. The shaping methodology for each curve breaks the package into monthly granularity by combining information from historical forward prices, historical spot prices, and ICE forward prices. When the model is set up, shaping factors are calculated daily to better reflect market conditions. The time horizon used for generating shaping factors is selected to best represent the temporal dimension.
3. Incorporate ICE activity data. Curves are derived by considering available market information from ICE Intra Day and Activity reports. When the information is available in seasonal packages, Platts applies the shaping methodology

to generate monthly curves.

4. Extend the curves for Market locations using EIA Electricity Market Forecasts.
5. Derive curves for Proxy locations. The curve is derived based on similarity in seasonal pricing patterns and overall price correlation. This approach necessarily relies on modeling to a greater degree than Market hubs. Platts performs three calculations to estimate these strips:
 - a. Proxy hubs are assigned to market hubs based on their similarity in seasonal pricing patterns and overall price correlation.
 - b. The price relationship between the pair of hubs is defined and is calculated from the historical data set.
 - c. The monthly values for the market hub are used to determine the prices for the proxy hub.
6. Quality assurance and review: In daily production, analysts closely monitor the curve shape to differentiate changes in the term structure from other market activity. We check for outliers, curve abnormalities, and unusual price movements. Curves are later verified with ICE Final Settlement data for consistency.
7. The curves are published and delivered to clients via FTP, Platts.com, channel partners, and/or email.

Shaping

For trading packages that include multiple months, Platts derives a shaping methodology for each month to break the package into monthly granularity by combining information from historical forward prices, historical spot prices, and ICE forward prices.

When the model is set up, shaping factors are calculated daily to better reflect market conditions. The time horizon used for generating shaping factors is selected to best represent the temporal relationship of the forward price with enough data to guarantee the stability of the curve shapes. Monthly shaping will always average to ICE package values.

In daily production, analysts closely monitor the curve shape to differentiate changes in the term structure from other market activity.

Electricity market forecasts and 20 year curves

Platts utilizes electricity price forecasts from the U.S. Energy Information Administration's Electricity Market Forecasts for the purposes of extending curves beyond available market data. For 20 year curves, the first 120 months is consistent with the 120 month M2MS curve of the last trading day of the month. The latter part of the curve is determined by blending the results from electricity market forecasts obtained from the US EIA.

Based on the model and current market fundamentals, Platts includes information inferred from near-term market data onto the farther end. The resulting product is a discrete and smooth curve that gives priority to market data when available but has a robust, consistent process for building prices when market data is not available.

Peak/off-peak conversion

- The daily forward prices that make up the Power Forward Curve are for standard on-peak and off-peak forward products.
- Standard on-peak forward packages in Eastern and Central markets include power delivered during the 16 on-peak hours on weekdays and exclude weekends and holidays defined by the North American Electric Reliability Corp (NERC).

- Standard on-peak forward packages in Western markets include power delivered during the 16 on-peak hours each day Monday through Saturday and exclude Sundays and NERC holidays.
- Standard off-peak forward packages in the Eastern and Central markets include power delivered during the eight off-peak hours each weekday and all hours on weekends and NERC holidays.
- Standard off-peak forward packages in the Western markets include power delivered during the eight off-peak hours Monday through Saturday and all hours on Sunday and NERC holidays.

PART IV: PLATTS STANDARDS

All Platts' employees must adhere to the S&P Global Code of Business Ethics (COBE), which has to be signed annually. The COBE reflects S&P Global's commitment to integrity, honesty and acting in good faith in all its dealings.

In addition, Platts requires that all employees attest annually that they do not have any personal relationships or personal financial interests that may influence or be perceived to influence or interfere with their ability to perform their jobs in an objective, impartial and effective manner.

Platts has a Quality & Risk Management (QRM) function that is independent of the Commodity Risk Solutions (CRS) group. QRM is responsible for ensuring the quality and adherence to Platts' policies, standards, processes and procedures. The QRM team conduct regular assessments of CRS operations, including checks for adherence to published methodologies.

S&P Global's internal auditor, an independent group that reports directly to the parent company's board of directors, reviews the Platts risk assessment programs.

PART V: CORRECTIONS

Platts is committed to promptly correcting any material errors. When corrections are made, they are limited to corrections to data that was available when the forward price was calculated.

PART VI: REQUESTS FOR CLARIFICATIONS OF DATA AND COMPLAINTS

Platts strives to provide critical information of the highest standards, to facilitate greater transparency and efficiency in physical commodity markets.

Platts customers raise questions about its methodologies and the approach taken in the formation of forward curves. Platts strongly values these interactions and encourages dialogue concerning any questions a customer or market stakeholder may have.

However, Platts recognizes that occasionally customers may not be satisfied with responses received or the services provided by Platts and wish to escalate matters. Full information about how to contact Platts to request clarification around an assessment, or make a complaint, is available on the Platts website, at: <http://www.platts.com/ContactUs/Complaints>.

PART VII: DEFINITIONS OF THE NORTH AMERICAN LOCATIONS FOR WHICH PLATTS PUBLISHES FORWARD CURVES

The following M2MS-Power Methodology and Specifications Guide contains the primary specifications and methodologies for Platts Power Forward Curves in North America. The various components of this guide are designed to give Platts subscribers as much information as possible about a wide range of methodology and specification issues.

This methodology is current at the time of publication. Platts may issue further updates and enhancements to this methodology and will communicate these to subscribers through its usual publications of record. Such updates will be included in the next version of the methodology. Platts managers will usually be ready to provide guidance when forward curve issues require clarification.

Platts' Commodity Risk Solutions (CRS) daily 10 year and monthly 20 year M2MS-Power forward curves aim to bring greater price transparency to power forward markets in North America and to provide an independent view of forward peak/off peak power values for multiple power hubs in the US and Canada, including those where there is minimal or no trading activity on any given day. They provide a regionally comprehensive and industry-accepted standard for normalized short-and long-term power contract valuations.

Platts produces M2MS-Power curves at multiple delivery points across North America. We classify our locations into two categories for the purpose of curve production:

- **Market Hubs:** For liquid trading locations at which settlement data is available and verifiable.
- **Proxy Hubs:** For locations where there is little or no market data available. The CRS quantitative methodology uses fundamental analysis and statistical testing to establish a defensible proxy relationship between these hubs and one of the Market hubs defined above.

Each value on a 36-month implied volatility curve is obtained as an annualized standard deviation of the month-to-month returns of the corresponding M2MS forward price, taken over the course of the preceding 12 business months.

Each value on a 36-month heat rate curve is obtained as a ratio between the M2MS-Power and M2MS-Gas forward prices on a particular day. The forward prices used to derive the heat rate refer to a specific pair of Power and Gas hubs and the same delivery month.

Platts M2MS-Power offers the following curves for the North American Power market:

- 120-Month Peak and Off-Peak curves, delivered daily, provide market-based forward price with monthly granularity plus balance of the month for 73 locations. 20-Year Peak and Off-Peak curves, delivered monthly, provide 240-month (20-year) monthly granularity forward curves plus balance of the month for 73 locations, derived by combining the current 120-month regional forward assessments with 20 year annual price projections incorporating market fundamentals. Balance of the month refers to the period beginning from the day after the spot flow date to the last trade date of the month.
- All curves are available in five regional packages (ERCOT, Northeast, PJM/MISO, Southeast, and West).
- A sixth package, M2MS National, contains 22 of the most liquid trading locations in the US and Canada.
- Subscribers to both M2MS Power and M2MS Gas packages also receive forward heat rate curves. These heat rate curves are not market curves; they are implied from the gas and power prices.

How to read the symbol tables:

For the ten-year and twenty-year subscriptions, each location has a reference of the form:

ZZZxxy.

This can be decoded to all symbols for a location in this manner:

ZZZ is the hub code for that location, and does not change for a particular location.

For Balance of Month (BOM)

For all other contracts:

xxy = B00 **x = month, where A = Jan, B = Feb, ... L = Dec.**

yy = year, without century. Note that for both the ten-year and twenty-year subscriptions, all years are included, i.e. the twenty-year includes the first ten years, but with slightly different hub codes.

For example,

Henry Hub BOM = **NHHMB00**

ALGONQUIN Jul 18 = **NAGMG18**

M2MS-POWER NORTHEAST REGION SYMBOLS (BATE CODE:U)

Location	Location Category	10 Year Symbol	20 Year Symbol	Location	Location Category	10 Year Symbol	20 Year Symbol
ISO-NE NE-Mass Opk	Market	ENMCxyy	ENMDxyy	NY ISO H (Milwood) Opk	Proxy	ENHQxyy	ENHOxyy
ISO-NE NE-Mass Pk	Market	ENMAxyy	ENMBxyy	NY ISO H (Milwood) Pk	Proxy	ENHPxyy	ENHMxyy
ISO-NE New Hampshire Opk	Market	EHCxyy	EHDxyy	NY ISO Mohawk Valley Zone (E) Opk	Proxy	ENECxyy	ENEDxyy
ISO-NE New Hampshire Pk	Market	EHAxyy	EHBxyy	NY ISO Mohawk Valley Zone (E) Pk	Proxy	ENEAxyy	ENEBxyy
ISO-NE Salisbury Node NB345 Opk	Proxy	ESACxyy	ESADxyy	NY ISO Zone A (West) Opk	Market	ENAOxyy	ENAQxyy
ISO-NE Salisbury Node NB345 Pk	Proxy	ESAAxyy	ESABxyy	NY ISO Zone A (West) Pk	Market	ENAMxyy	ENAPxyy
ISO-NE SE-MASS Opk	Market	ESMCxyy	ESMDxyy	NY ISO Zone C (Central) Opk	Market	ECNCxyy	ECNDxyy
ISO-NE SE-MASS Pk	Market	ESMAxyy	ESMBxyy	NY ISO Zone C (Central) Pk	Market	ECNAxyy	ECNBxyy
ISONE Vermont Zone Opk	Proxy	EVMCxyy	EVMDxyy	NY ISO Zone D (North) Opk	Market	END0xyy	ENDQxyy
ISONE Vermont Zone Pk	Proxy	EVMAxyy	EVMBxyy	NY ISO Zone D (North) Pk	Market	ENDMxyy	ENDPxyy
ISO-NE W Central Mass Opk	Market	EMMCxyy	EMMDxyy	NY ISO Zone F (Capital) Opk	Market	EFNCxyy	EFNDxyy
ISO-NE W Central Mass Pk	Market	EMMAxyy	EMMBxyy	NY ISO Zone F (Capital) Pk	Market	EFNAxyy	EFNBxyy
NEPOOL Mass Hub Opk	Market	EMHOxyy	EMHQxyy	NY ISO Zone G (Hudson Val) Opk	Market	ENGOxyy	ENGOxyy
NEPOOL Mass Hub Pk	Market	EMHMxyy	EMHPxyy	NY ISO Zone G (Hudson Val) Pk	Market	ENGMxyy	ENGPxyy
NEPOOL-CT Opk	Market	ENC0xyy	ENCQxyy	NY ISO Zone J (NYC) Opk	Market	ENJOxyy	ENJQxyy
NEPOOL-CT Pk	Market	ENCMxyy	ENCPxyy	NY ISO Zone J (NYC) Pk	Market	ENJMxyy	ENJPxyy
NEPOOL-North Opk	Market	ENNOxyy	ENNQxyy	NY ISO Zone K (Long Island) Opk	Proxy	ENKOxyy	ENKQxyy
NEPOOL-North Pk	Market	ENNMxyy	ENNPxyy	NY ISO Zone K (Long Island) Pk	Proxy	ENKMxyy	ENKPxyy
NEPOOL-RI Opk	Proxy	ENROxyy	ENRQxyy	NYISO I (Dunwoodie) Opk	Proxy	EINQxyy	EINOxyy
NEPOOL-RI Pk	Proxy	ENRMxyy	ENRPxyy	NYISO I (Dunwoodie) Pk	Proxy	EINPxyy	EINMxyy
NY ISO B (Genesee) Opk	Proxy	ENBQxyy	ENBOxyy	Ontario Opk	Market	EON0xyy	EONQxyy
NY ISO B (Genesee) Pk	Proxy	ENBPxyy	ENBMxyy	Ontario Pk	Market	EONMxyy	EONPxyy

Northeast Region**ISO-NE NE-Mass**

NE-Mass, or Northeast Mass, is based on the on peak and off peak mathematical averages of the hourly day ahead LMP prices published by ISO-NE on their website www.iso-ne.com.

ISO-NE New Hampshire

ISO-NE New Hampshire is based on the on peak and off peak mathematical averages of the hourly day ahead LMP prices published by ISO-NE on their website www.iso-ne.com.

ISO-NE Salisbury Node NB 345

Located in ISO-NE with New Brunswick interface. Pricing is based off of the peak and off-peak mathematical averages

of hourly day ahead LMP prices published by ISO-NE on their website, www.iso-ne.com.

ISO-NE SE-Mass

SE-Mass, or Southeast Mass, is based on the on peak and off peak mathematical averages of the hourly day ahead LMP prices published by ISO-NE on their website www.iso-ne.com.

ISO-NE Vermont Zone

ISO-NE Vermont Zone is based on the on peak and off peak mathematical averages of the hourly day ahead LMP prices published by ISO-NE on their website www.iso-ne.com.

ISO-NE W Central Mass

W Central Mass, or West Central Mass, is based on the on peak and off peak mathematical averages of the hourly day ahead LMP prices published by ISO-NE on their website www.iso-ne.com.

NEPOOL Connecticut

NEPOOL Connecticut, or ISO-NE Connecticut, is based on the on peak and off peak mathematical averages of the hourly day ahead LMP prices published by ISO-NE on their website www.iso-ne.com.

NEPOOL Mass Hub

NEPOOL Mass Hub, or ISO-NE Mass Hub, is based on the on peak and off peak mathematical averages of the hourly day ahead LMP prices published by ISO-NE on their website www.iso-ne.com.

NEPOOL North

NEPOOL North, or ISO-NE Maine, is based on the on peak and off peak mathematical averages of the hourly day ahead LMP prices published by ISO-NE on their website www.iso-ne.com.

NEPOOL RI

NEPOOL RI, or ISO-NE Rhode Island, is based on the on peak and off peak mathematical averages of the hourly day ahead LMP prices published by ISO-NE on their website www.iso-ne.com.

NY ISO Zone A (West)

NY ISO Zone A, or West Zone, is based on the on peak and off peak mathematical averages of the hourly day ahead LMP prices published by NYISO on their website www.nyiso.com.

NYISO Zone B (Genesee)

NYISO Zone B, or Genesee Zone is based on the on peak and off peak mathematical averages of the hourly day ahead LMP prices published by NYISO on their website www.nyiso.com.

NY ISO Zone C (Central)

NY ISO Zone C, or Central Zone, is based on the on peak and off peak mathematical averages of the hourly day ahead LMP prices published by NYISO on their website www.nyiso.com.

NY ISO Zone D (North)

NY ISO Zone D, or North Zone, is based on the on peak and off peak mathematical averages of the hourly day ahead LMP prices published by NYISO on their website www.nyiso.com.

NY ISO Zone F (Capital)

NY ISO Zone F, or Capital Zone, is based on the on peak and off peak mathematical averages of the hourly day ahead LMP prices published by NYISO on their website www.nyiso.com.

NY ISO Zone G (Hudson Val)

NY ISO Zone G, or Hudson Valley Zone, is based on the on peak and off peak mathematical averages of the hourly day ahead LMP prices published by NYISO on their website www.nyiso.com.

NY ISO H (Milwood)

NYISO H, or Millwood Zone, is based on the on peak and off peak mathematical averages of the hourly day ahead LMP prices published by NYISO on their website www.nyiso.com.

NYISO I (Dunwoodie)

NYISO I, or Dunwoodie Zone, is based on the on peak and off peak mathematical averages of the hourly day ahead LMP prices published by NYISO on their website www.nyiso.com.

NY ISO Zone J (NYC)

NY ISO Zone J, or New York City Zone, is based on the on peak and off peak mathematical averages of the hourly day ahead LMP prices published by NYISO on their website www.nyiso.com.

NY ISO Zone K (Long Island)

NY ISO Zone K, or Long Island Zone, is based on the on peak and off peak mathematical averages of the hourly day ahead LMP prices published by NYISO on their website www.nyiso.com.

NY ISO Mohawk Valley Zone (E)

NY ISO Zone E, or Mohawk Valley Zone, is based on the on peak and off peak mathematical averages of the hourly day ahead LMP prices published by NYISO on their website www.nyiso.com.

Ontario

The Ontario market and pricing area comprises the grid controlled by Ontario's independent system operator, the Independent Electricity System Operator (IESO).

M2MS-POWER PJM/MISO REGION SYMBOLS BATE CODE:U)

Location	Location Category	10 Year Symbol	20 Year Symbol	Location	Location Category	10 Year Symbol	20 Year Symbol
Michigan Opk	Market	EMIOxyy	EMIQxyy	PJM DEOK Pk	Market	EJKMxyy	EJKPxyy
Michigan Pk	Market	EMIMxyy	EMIPxyy	PJM DPL Opk	Market	EJDCxyy	EJDDxyy
Minn Hub Opk	Market	EPMOxyy	EPMQxyy	PJM DPL Pk	Market	EJDAxyy	EJDBxyy
Minn Hub Pk	Market	EPMMxyy	EPMPxyy	PJM Duquesne Opk	Market	EJUCxyy	EJUDxyy
MISO Arkansas Hub Opk	Market	EMACxyy	EMADxyy	PJM Duquesne Pk	Market	EJUAxyy	EJUBxyy
MISO Arkansas Hub Pk	Market	EMAAxyy	EMABxyy	PJM Eastern Hub Opk	Market	EPEOxyy	EPEQxyy
MISO Illinois Hub Opk	Market	EILCxyy	EILDxyy	PJM Eastern Hub Pk	Market	EPeMxyy	EPePxyy
MISO Illinois Hub Pk	Market	EILAxyy	EILBxyy	PJM FE Ohio Opk	Market	EJHOxyy	EJHQxyy
MISO Indiana Opk	Market	ECIOxyy	ECIQxyy	PJM FE Ohio Pk	Market	EJHMxyy	EJHPxyy
MISO Indiana Pk	Market	ECIMxyy	ECIPxyy	PJM JPCL Zone Opk	Market	EJCOxyy	EJCQxyy
MISO Louisiana Opk	Market	EMLCxyy	EMLDxyy	PJM JPCL Zone Pk	Market	EJCMxyy	EJCPxyy
MISO Louisiana Pk	Market	EMLAxyy	EMLBxyy	PJM METED Opk	Market	EJMCxyy	EJMDxyy
MISO Texas Hub Opk	Market	EMECxyy	EMEDxyy	PJM METED Pk	Market	EJMAxyy	EJMBxyy
MISO Texas Hub Pk	Market	EMEAxyy	EMEBxyy	PJM NI Hub Opk	Market	ECEOxyy	ECEQxyy
PJM AD Hub Opk	Market	EEOCxyy	EEOQxyy	PJM NI Hub Pk	Market	ECEMxyy	ECEPxyy
PJM AD Hub Pk	Market	EECMxyy	EACPxyy	PJM PECO Zone Opk	Market	EPCOxyy	EPCQxyy
PJM AECO Opk	Market	EJACxyy	EJADxyy	PJM PECO Zone Pk	Market	EPCMxyy	EPCPxyy
PJM AECO Pk	Market	EJAAxyy	EJABxyy	PJM PENELEC Opk	Market	EJNCxyy	EJNDxyy
PJM AEP Opk	Market	EJEOxyy	EJEQxyy	PJM PENELEC Pk	Market	EJNAxyy	EJNBxyy
PJM AEP Pk	Market	EJEMxyy	EJEPxyy	PJM PEPCO Zone Opk	Market	EPPOxyy	EPPQxyy
PJM APS Opk	Market	EJSCxyy	EJSDxyy	PJM PEPCO Zone Pk	Market	EPPMxyy	EPPPxyy
PJM APS Pk	Market	EJSAxyy	EJSBxyy	PJM PPL Zone Opk	Market	EPLOxyy	EPLQxyy
PJM ATSI Opk	Market	EJTOxyy	EJTQxyy	PJM PPL Zone Pk	Market	EPLMxyy	EPLPxyy
PJM ATSI Pk	Market	EJTMxyy	EJTPxyy	PJM PSEG Zone Opk	Market	ESGOxyy	ESGQxyy
PJM BGE Zone Opk	Market	EBGOxyy	EBGQxyy	PJM PSEG Zone Pk	Market	ESGMxyy	ESGPxyy
PJM BGE Zone Pk	Market	EBGMxyy	EBGPxyy	PJM Rockland Electric Zone Opk	Proxy	EJROxyy	EJRQxyy
PJM ComEd Opk	Market	EJOCxyy	EJODxyy	PJM Rockland Electric Zone Pk	Proxy	EJRMxyy	EJRPxyy
PJM ComEd Pk	Market	EJOAxyy	EJOBxyy	PJM Western Hub Opk	Market	EPJOxyy	EPJQxyy
PJM DEOK Opk	Market	EJKOxyy	EJKQxyy	PJM Western Hub Pk	Market	EPJMxyy	EPJPxyy

PJM/MISO Region

Michigan

MISO Michigan Hub is based on the on peak and off peak mathematical averages of the hourly day ahead LMP prices published by Midwest ISO on their website www.misoenergy.com.

MISO Arkansas Hub

MISO Arkansas Hub is based on the on peak and off peak mathematical averages of the hourly day ahead LMP prices published by Midwest ISO on their website www.misoenergy.com.

MISO Illinois Hub

MISO Illinois Hub is based on the on peak and off peak mathematical averages of the hourly day ahead LMP prices published by Midwest ISO on their website www.misoenergy.com.

MISO Indiana Hub

MISO Indiana Hub is based on the on peak and off peak mathematical averages of the hourly real time LMP prices published by Midwest ISO on their website www.misoenergy.com.

MISO Louisiana Hub

MISO Louisiana Hub is based on the on peak and off peak mathematical averages of the hourly day ahead LMP prices published by Midwest ISO on their website www.misoenergy.com.

MISO Minn Hub

MISO Minn Hub is based on the on peak and off peak mathematical averages of the hourly day ahead LMP prices published by Midwest ISO on their website www.misoenergy.com.

MISO Texas Hub

MISO Texas Hub is based on the on peak and off peak mathematical averages of the hourly day ahead LMP prices published by Midwest ISO on their website www.misoenergy.com.

PJM Rockland Electric Zone

Includes Rockland Electric Company's Eastern Division in Bergen County, NJ. Rockland's Eastern Division serves about 400 megawatts of load. It does not include any generating capacity. The division is directly interconnected with facilities controlled by PJM through a 345-kilovolt transmission line. www.pjm.com

PJM AD Hub

PJM AD Hub is based on the on peak and off peak mathematical averages of the hourly real time LMP prices published by PJM on their website www.pjm.com.

PJM AECO

PJM AECO is based on the on peak and off peak mathematical averages of the hourly day ahead LMP prices published by PJM on their website www.pjm.com.

PJM AEP

PJM AEP is based on the on peak and off peak mathematical averages of the hourly day ahead LMP prices published by PJM on their website www.pjm.com.

PJM APS

PJM APS is based on the on peak and off peak mathematical averages of the hourly day ahead LMP prices published by PJM on their website www.pjm.com.

PJM ATSI

PJM ATSI is based on the on peak and off peak mathematical averages of the hourly day ahead LMP prices published by PJM on their website www.pjm.com.

PJM BGE Zone

PJM BGE Zone is based on the on peak and off peak mathematical averages of the hourly day ahead LMP prices published by PJM on their website www.pjm.com.

PJM ComEd

PJM ComEd is based on the on peak and off peak mathematical averages of the hourly day ahead LMP prices published by PJM on their website www.pjm.com.

PJM DEOK

PJM DEOK is based on the on peak and off peak mathematical averages of the hourly day ahead LMP prices published by PJM on their website www.pjm.com.

PJM DPL

PJM DPL is based on the on peak and off peak mathematical averages of the hourly day ahead LMP prices published by PJM on their website www.pjm.com.

PJM Duquesne

PJM Duquesne is based on the on peak and off peak mathematical averages of the hourly day ahead LMP prices published by PJM on their website www.pjm.com.

PJM Eastern Hub

PJM Eastern Hub is based on the on peak and off peak

mathematical averages of the hourly day ahead LMP prices published by PJM on their website www.pjm.com.

PJM FE Ohio

PJM FE Ohio is based on the on peak and off peak mathematical averages of the hourly day ahead LMP prices published by PJM on their website www.pjm.com.

PJM JCPL Zone

PJM JCPL Zone is based on the on peak and off peak mathematical averages of the hourly day ahead LMP prices published by PJM on their website www.pjm.com.

PJM METED

PJM METED is based on the on peak and off peak mathematical averages of the hourly day ahead LMP prices published by PJM on their website www.pjm.com.

PJM NI Hub

PJM NI Hub is based on the on peak and off peak mathematical averages of the hourly real time LMP prices published by PJM on their website www.pjm.com.

PJM PECO Zone

PJM PECO Zone is based on the on peak and off peak mathematical averages of the hourly day ahead LMP prices published by PJM on their website www.pjm.com.

PJM PENELEC

PJM PENELEC is based on the on peak and off peak mathematical averages of the hourly day ahead LMP prices published by PJM on their website www.pjm.com.

PJM PEPCO Zone

PJM PEPCO Zone is based on the on peak and off peak mathematical averages of the hourly day ahead LMP prices published by PJM on their website www.pjm.com.

PJM PPL Zone

PJM PPL Zone is based on the on peak and off peak mathematical averages of the hourly day ahead LMP prices published by PJM on their website www.pjm.com.

PJM PSEG Zone

PJM PSEG Zone is based on the on peak and off peak mathematical averages of the hourly day ahead LMP prices published by PJM on their website www.pjm.com.

PJM Western Hub

PJM Western Hub is based on the on peak and off peak mathematical averages of the hourly real time LMP prices published by PJM on their website www.pjm.com.

M2MS-POWER SOUTHEAST REGION SYMBOLS (BATE CODE:U)

Location	Location Category	10 Year Symbol	20 Year Symbol	Location	Location Category	10 Year Symbol	20 Year Symbol
Florida Opk	Proxy	EFL0xyy	EFLQxyy	Vacar Opk	Proxy	ESV0xyy	ESVQxyy
Florida Pk	Proxy	EFLMxyy	EFLPxyy	Vacar Pk	Proxy	ESVMxyy	ESVPxyy
Into TVA Opk	Proxy	ETVCxyy	ETVDxyy	SPP North Opk	Market	ESN0xyy	ESNQxyy
Into TVA Pk	Proxy	ETVAxyy	ETVBxyy	SPP North Pk	Market	ESNMxyy	ESNPxyy
Into Southern Opk	Proxy	EST0xyy	ESTQxyy	SPP South Opk	Market	ESW0xyy	ESWQxyy
Into Southern Pk	Proxy	ESTMxyy	ESTPxyy	SPP South Pk	Market	ESWMxyy	ESWPxyy

Southeast Region**Florida**

The Florida instate pricing area comprises control areas within the State of Florida or the Florida Reliability Coordination Council (FRPCC), excluding Gulf Power, which is part of the Southern Company control area. Florida control areas include: Progress Energy Florida, Florida Power & Light Company, Tampa Electric Company, Florida Municipal Power Agency, Gainesville Regional Utilities, JEA, City of Lakeland, Orlando Utilities Commission, City of Tallahassee and Seminole Electric Cooperative.

Into Southern

Into Southern comprises power delivered to an interface with or a delivery point within the Southern Company control area, which spans a swath of SERC from Georgia to Mississippi

including a portion of the Florida pan handle. (Control area for purposes of this location description is defined to exclude any other entity's transmission system for which the utility acts as the balancing authority.)

Into TVA

Into TVA comprises power delivered to an interface with or a delivery point within the control area of the Tennessee Valley Authority, which includes Tennessee and the northern portion of Alabama. (Control area for the purposes of this location description is defined to exclude any other entity's system for which TVA acts as the balancing authority.)

SPP North

SPP North is based on the on peak and off peak mathematical averages of the hourly day ahead LMP prices published by SPP on their website www.spp.org.

SPP South

SPP South is based on the on peak and off peak mathematical averages of the hourly day ahead LMP prices published by SPP on their website www.spp.org.

VACAR

VACAR comprises the control areas in the Virginia and Carolinas subregion of the Southeastern Electric Reliability Council, including: Progress Energy's Carolina Power and Light east and west, Duke(?), South Carolina Electric and Gas, Santee Cooper, Southeastern Power Administration and APGI Yadkin Division. Dominion's Virginia Power control area has been excluded since it joined the RJM interconnection on May 1, 2005.

M2MS-POWER ERCOT REGION SYMBOLS (BATE CODE:U)

Location	Location Category	10 Year Symbol	20 Year Symbol	Location	Location Category	10 Year Symbol	20 Year Symbol
ERCOT Houston Hub Opk	Market	ETS0xyy	ETSQxyy	ERCOT South Hub Opk	Market	ETH0xyy	ETHQxyy
ERCOT Houston Hub Pk	Market	ETSMxyy	ETSPxyy	ERCOT South Hub Pk	Market	ETHMxyy	ETHPxyy
ERCOT North Hub Opk	Market	ETN0xyy	ETNQxyy	ERCOT West Hub Opk	Market	ETW0xyy	ETWQxyy
ERCOT North Hub Pk	Market	ETNMxyy	ETNPxyy	ERCOT West Hub Pk	Market	ETWMxyy	ETWPxyy

ERCOT Region**ERCOT Houston Hub**

ERCOT's Houston aggregate nodal trading hub, based on the on peak and off peak mathematical averages of the hourly real time LMP prices published by ERCOT on their website www.ercot.com.

ERCOT North Hub

ERCOT's North aggregate nodal trading hub, based on the on peak and off peak mathematical averages of the hourly real time

LMP prices published by ERCOT on their website www.ercot.com.

ERCOT South Hub

ERCOT's South aggregate nodal trading hub, based on the on peak and off peak mathematical averages of the hourly real time LMP prices published by ERCOT on their website www.ercot.com.

ERCOT West Hub

ERCOT's West aggregate nodal trading hub, based on the on peak and off peak mathematical averages of the hourly real time LMP prices published by ERCOT on their website www.ercot.com.

M2MS-POWER WEST REGION SYMBOLS (BATE CODE:U)

Location	Location Category	10 Year Symbol	20 Year Symbol	Location	Location Category	10 Year Symbol	20 Year Symbol
Alberta Opk	Market	EAL0xyy	EALQxyy	NOB, Nevada-Oregon Border Opk	Proxy	EN00xyy	EN0Qxyy
Alberta Pk	Market	EALMxyy	EALPxyy	NOB, Nevada-Oregon Border Pk	Proxy	EN0Mxyy	EN0Pxyy
Calif-Orecon Border Opk	Proxy	EC00xyy	EC0Qxyy	North Path 15 Opk	Market	ENP0xyy	ENPQxyy
Calif-Orecon Border Pk	Proxy	EC0Mxyy	EC0Pxyy	North Path 15 Pk	Market	ENPMxyy	ENPPxyy
East Colorado Opk	Proxy	EWE0xyy	EWEQxyy	Palo Verde Opk	Market	EPV0xyy	EPVQxyy
East Colorado Pk	Proxy	EWE Mxyy	EWE Pxyy	Palo Verde Pk	Market	EPVMxyy	EPVPxyy
Four Corners Opk	Proxy	EFC0xyy	EFCQxyy	Pinnacle Peak Opk	Proxy	EPN0xyy	EPNQxyy
Four Corners Pk	Proxy	EFCMxyy	EFCPxyy	Pinnacle Peak Pk	Proxy	EPNMxyy	EPNPxyy
Mead Opk	Proxy	EMD0xyy	EMDQxyy	South Path 15 Opk	Market	ESP0xyy	ESPQxyy
Mead Pk	Proxy	EMDMxyy	EMDPxyy	South Path 15 Pk	Market	ESPMxyy	ESPPxyy
Mid-Columbia Opk	Market	EMC0xyy	EMCQxyy	Utah Opk	Proxy	EUT0xyy	EUTQxyy
Mid-Columbia Pk	Market	EMCMxyy	EMCPxyy	Utah Pk	Proxy	EUTMxyy	EUTPxyy

West Region

Northwestern corner of the state where Arizona, Colorado, New Mexico and Utah meet.

California.

Alberta

Alberta is based on the on peak and off peak mathematical averages of the hourly pool prices published by AESO on their website www.aeso.ca.

Mead

Mead comprises the switchyard at the Hoover Dam on the Colorado River, forming Lake Mead near Las Vegas, Nevada.

North Path 15

North Path 15, or NP 15, is based on the on peak and off peak mathematical averages of the hourly day ahead LMP prices published by CAISO on their website www.caiso.com.

California-Oregon Border

California-Oregon Border comprises the Captain Jack and Malin substations on the AC transmission system between Oregon and California.

Mid-Columbia

Mid-Columbia is a power trading hub for the Northwest U.S. comprising the control areas of three public utility districts in Washington that run hydro electric projects on the Columbia River. The three PUDs are Grant, Douglas and Chelan. Hydro projects include Wells, Rocky Reach, Rock Island, Wanapum and Priest Rapids dams.

Palo Verde

Palo Verde comprises the switchyard at the Palo Verde nuclear power station west of Phoenix, Arizona.

East Colorado

East Colorado is based on power delivered to the DC tie line in Lamar, Colorado.

NOB, Nevada-Oregon Border

Nevada-Oregon Border is part of the Pacific DC Intertie that connects the Pacific Northwest directly with Southern California. The DC Intertie connects the Celio DC Converter station near The Dalles, Oregon with the Sylmar substation north of Los Angeles,

Pinnacle Peak

Pinnacle Peak comprises three substations northeast of Phoenix, Arizona and west of Scottsdale Arizona. The three substations are operated individually by Arizona Public Service, US Bureau of Reclamation Lower Colorado Region and Salt River Project.

Four Corners

Four Corners comprises the switchyard of the coal-fired Four Corners power plant in Fruitland, New Mexico, located in the

South Path 15

South Path 15, or SP 15, is based on the on peak and off peak mathematical averages of the hourly day ahead LMP prices published by CAISO on their website www.caiso.com.

Utah

Utah, or Mona, comprises the Mona substation in central Utah, directly south of Salt Lake City and linked to major generating units in the region, such as the Intermountain Power Project.

National Package

M2MS-POWER NATIONAL PACKAGE SYMBOLS (BATE CODE: U)

Location	Location Category	10 Year Symbol	20 Year Symbol	Location	Location Category	10 Year Symbol	20 Year Symbol
ERCOT Houston OPk	Market	ETSUxyy	ETSRxyy	North Path 15 Opk	Market	ENPUxyy	ENPRxyy
ERCOT Houston Pk	Market	ETSTxyy	ETSSxyy	North Path 15 Pk	Market	ENPTxyy	ENPSxyy
ERCOT North OPk	Market	ETNUxyy	ETNRxyy	NY ISO Zone A (West) Opk	Market	ENAUxyy	ENARxyy
ERCOT North Pk	Market	ETNTxyy	ETNSxyy	NY ISO Zone A (West) Pk	Market	ENATxyy	ENASxyy
ERCOT South OPk	Market	ETHUxyy	ETHRxyy	NY ISO Zone G (Hudson Val) Opk	Market	ENGUxyy	ENGRxyy
ERCOT South Pk	Market	ETHTxyy	ETHSxyy	NY ISO Zone G (Hudson Val) Pk	Market	ENGTxyy	ENGSxyy
ERCOT West OPk	Market	ETWUxyy	ETWRxyy	NY ISO Zone J (NYC) Opk	Market	ENJUxyy	ENJRxyy
ERCOT West Pk	Market	ETWTxyy	ETWSxyy	NY ISO Zone J (NYC) Pk	Market	ENJTxyy	ENJSxyy
Mead Opk	Proxy	EMDUxyy	EMDRxyy	Ontario Opk	Market	EONUxyy	EONRxyy
Mead Pk	Proxy	EMDTxyy	EMDSxyy	Ontario Pk	Market	EONTxyy	EONSxyy
Mid-Columbia Opk	Market	EMCUxyy	EMCRxyy	Palo Verde OPk	Market	EPVUxyy	EPVRxyy
Mid-Columbia Pk	Market	EMCTxyy	EMCSxyy	Palo Verde Pk	Market	EPVTxyy	EPVSxyy
MISO Arkansas OPk	Market	EMAUxyy	EMARxyy	PJM AD Hub Opk	Market	EECUxyy	EECRxyy
MISO Arkansas Pk	Market	EMATxyy	EMASxyy	PJM AD Hub Pk	Market	EECTxyy	EECSxyy
MISO Indiana Opk	Market	ECIUxyy	ECIRxyy	PJM NI Hub Opk	Market	ECEUxyy	ECEBxyy
MISO Indiana Pk	Market	ECITxyy	ECISxyy	PJM NI Hub Pk	Market	ECETxyy	ECESxyy
MISO Louisiana OPk	Market	EMLUxyy	EMLRxyy	PJM Western Hub Opk	Market	EPJUxyy	EPJRxyy
MISO Louisiana Pk	Market	EMLTxyy	EMLSxyy	PJM Western Hub Pk	Market	EPJTxyy	EPJSxyy
MISO Texas OPk	Market	EMEUxyy	EMERxyy	South Path 15 Opk	Market	ESPUxyy	ESPRxyy
MISO Texas Pk	Market	EMETxyy	EMESxyy	South Path 15 Pk	Market	ESPTxyy	ESPSxyy
NEPOOL Mass Hub Opk	Market	EMHUxyy	EMHRxyy	SPP South Opk	Market	ESTUxyy	ESTRxyy
NEPOOL Mass Hub Pk	Market	EMHTxyy	EMHSxyy	SPP South Pk	Market	ESTTxyy	ESTSxyy

Heat Rate Hub Pairs

HEAT RATE HUB PAIRS

Power Hub Name	Gas Hub 1	OffPeak Symbol	Peak Symbol	Gas Hub 2	OffPeak Symbol	Peak Symbol
Northeast Region						
ISO-NE NE-Mass	Algonquin CG	IMAYxyy	IMCYxyy	Henry Hub	IM0Yxyy	IMMYxyy
ISO-NE New Hampshire	Algonquin CG	IHAYxyy	IHCYxyy	Henry Hub	IH0Yxyy	IHMYxyy
ISO-NE Salisbury Node NB 345	Algonquin CG	IHAYxyy	IHCYxyy	Henry Hub	SA0Yxyy	SAMYxyy
ISO-NE SE-Mass	Algonquin CG	SAAYxyy	SACYxyy	Henry Hub	IN0Yxyy	INMYxyy
ISONE Vermont Zone	Algonquin CG	IVAYxyy	IVCYxyy	Henry Hub	IV0Yxyy	IVMYxyy
ISO-NE W Central Mass	Algonquin CG	ICAYxyy	ICCYxyy	Henry Hub	IC0Yxyy	ICMYxyy
NEPOOL Connecticut	Iroquois Zn2	NCAYxyy	NCCYxyy	Henry Hub	NC0Yxyy	NCMYxyy
NEPOOL Mass Hub	Algonquin CG	MHAYxyy	MHCYxyy	Henry Hub	MH0Yxyy	MHMYxyy
NEPOOL North	Algonquin CG	NNAYxyy	NNCYxyy	Henry Hub	NN0Yxyy	NNMYxyy
NEPOOL RI	Algonquin CG	NEAYxyy	NECYxyy	Henry Hub	NE0Yxyy	NEMYxyy
NY ISO Zone A (West)	Niagara	WNAYxyy	WNCYxyy	Henry Hub	WN0Yxyy	WNMYxyy
NY ISO Zone B (Genesee)	Tenn Z4-300 leg	NGAYxyy	NGCYxyy	Henry Hub	NG0Yxyy	NGMYxyy
NY ISO Zone C (Central)	Niagara	NSAYxyy	NSCYxyy	Henry Hub	NS0Yxyy	NSMYxyy
NY ISO Zone D (North)	Iroquois Receipts	NDAYxyy	NDCYxyy	Henry Hub	ND0Yxyy	NDMYxyy
NY ISO Zone E (Mohawk Valley)	Transco Zn6 NY	NMAYxyy	NMCYxyy	Henry Hub	NM0Yxyy	NMMYxyy
NY ISO Zone F (Capital)	Transco Zn6 NY	NFAYxyy	NFCYxyy	Henry Hub	NF0Yxyy	NFMYxyy
NY ISO Zone G (Hudson Val)	Iroquois Zn2	EACYxyy	EAAyxyy	Henry Hub	EA0Yxyy	EAMYxyy
NY ISO Zone H (Milwood)	Transco Zn6 NY	NHAYxyy	NHCYxyy	Henry Hub	NH0Yxyy	NHMYxyy
NY ISO Zone I (Dunwoodie)	Transco Zn6 NY	NWAYxyy	NWCYxyy	Henry Hub	NW0Yxyy	NWMYxyy
NY ISO Zone J (NYC)	Transco Zn6 NY	EYAYxyy	EYCYxyy	Henry Hub	EY0Yxyy	EYMYxyy
NY ISO Zone K (Long Island)	Transco Zn6 NY	LIAYxyy	LICYxyy	Henry Hub	LI0Yxyy	LIMYxyy
Ontario	Dawn Ontario	ONAYxyy	ONCYxyy	Henry Hub	ON0Yxyy	ONMYxyy
PJM/MISO Region						
Michigan	Mich Con CG	MGAYxyy	MGCYxyy	Henry Hub	MG0Yxyy	MGMYxyy
MISO Arkansas Hub	Enable Gas E	AKAYxyy	AKCYxyy	Henry Hub	AK0Yxyy	AKMYxyy
MISO Illinois Hub	Chicago CG	MIAYxyy	MICYxyy	Henry Hub	MI0Yxyy	MIMYxyy
MISO Indiana Hub	Chicago CG	IDAYxyy	IDCYxyy	Henry Hub	ID0Yxyy	IDMYxyy
MISO Louisiana Hub	Col Gulf LA	LAAYxyy	LACYxyy	Henry Hub	LA0Yxyy	LAMYxyy
MISO Minn Hub	Nrthrn Ventura	MNAYxyy	MNCYxyy	Henry Hub	MN0Yxyy	MNMYxyy
MISO Texas Hub	NGPL Texok Zn	TXAYxyy	TXCYxyy	Henry Hub	TX0Yxyy	TXMYxyy
PJM AD Hub	Mich Con CG	ATAYxyy	ATCYxyy	Henry Hub	AT0Yxyy	ATMYxyy
PJM AEEO	Transco Zn6 xNY	AEAYxyy	AECYxyy	Henry Hub	AE0Yxyy	AEMYxyy
PJM AEP	Dominion S Pt	EPAYxyy	EPCYxyy	Henry Hub	EP0Yxyy	EPMYxyy

HEAT RATE HUB PAIRS

Power Hub Name	Gas Hub 1	OffPeak Symbol	Peak Symbol	Gas Hub 2	OffPeak Symbol	Peak Symbol
PJM APS	Col Gas Appal	APAYxyy	APCYxyy	Henry Hub	APOYxyy	APMYxyy
PJM ATSI	Dominion S Pt	PAAYxyy	PACYxyy	Henry Hub	PAOYxyy	PAMYxyy
PJM BGE Zone	TX Eastern M-3	PBAYxyy	PBCYxyy	Henry Hub	PBOYxyy	PBMYxyy
PJM ComEd	Chicago CG	PCAYxyy	PCCYxyy	Henry Hub	PCOYxyy	PCMYxyy
PJM DEOK	Dominion S Pt	DEAYxyy	DECYxyy	Henry Hub	DEOYxyy	DEMYxyy
PJM DPL	TX Eastern M-3	DPAYxyy	DPCYxyy	Henry Hub	DPOYxyy	DPMYxyy
PJM Duquesne	Dominion S Pt	PDAYxyy	PDCYxyy	Henry Hub	PDOYxyy	PDMYxyy
PJM Eastern Hub	TX Eastern M-3	PEAYxyy	PECYxyy	Henry Hub	PEOYxyy	PEMYxyy
PJM FE Ohio	Dominion S Pt	POAYxyy	POCYxyy	Henry Hub	POOYxyy	POMYxyy
PJM JCPL Zone	Transco Zn6 xNY	JCAYxyy	JCCYxyy	Henry Hub	JCOYxyy	JCMYxyy
PJM METED	TX Eastern M-3	PJAYxyy	PJCYxyy	Henry Hub	PJOYxyy	PJMYxyy
PJM NI Hub	Chicago CG	NIAYxyy	NICYxyy	Henry Hub	NI OYxyy	NIMYxyy
PJM PECO Zone	TX Eastern M-3	PZAYxyy	PZCYxyy	Henry Hub	PZOYxyy	PZMYxyy
PJM PENELEC	Transco Leidy Line	PPAYxyy	PPCYxyy	Henry Hub	PP OYxyy	PPMYxyy
PJM PEPCO Zone	Transco Zn5 Dlv	PTAYxyy	PTCYxyy	Henry Hub	PTOYxyy	PTMYxyy
PJM PPL Zone	Transco Leidy Line	PLAYxyy	PLCYxyy	Henry Hub	PLOYxyy	PLMYxyy
PJM PSEG Zone	TX Eastern M-3	PSAYxyy	PSCYxyy	Henry Hub	PSOYxyy	PSMYxyy
PJM Rockland Electric Zone	Millenium East Receipts	RKAYxyy	RKCYxyy	Henry Hub	RKOYxyy	RKMYxyy
PJM Western Hub	TX Eastern M-3	PWAYxyy	PWCYxyy	Henry Hub	PWOYxyy	PWMYxyy
Southeast Region						
Florida	FL Gas Zn3	FLAYxyy	FLCYxyy	Henry Hub	FLOYxyy	FLMYxyy
Into Southern	Transco Zn4	ISAYxyy	ISCYxyy	Henry Hub	ISOYxyy	ISMYxyy
Into TVA	TETCO M1	ITAYxyy	ITCYxyy	Henry Hub	IT OYxyy	ITMYxyy
SPP North	Nrthrn Ventura	SNAYxyy	SNCYxyy	Henry Hub	SNOYxyy	SNMYxyy
SPP South	Panhandle TX-OK	SSAYxyy	SSCYxyy	Henry Hub	SSOYxyy	SSMYxyy
Vacar	Transco Zn5 Dlv	SVAYxyy	SVCYxyy	Henry Hub	SVOYxyy	SVMYxyy
ERCOT Region						
ERCOT Houston Hub	Houston ShipChl	EHAYxyy	EHCYxyy	Henry Hub	EHOYxyy	EHMYxyy
ERCOT North Hub	TX Eastern E TX	ENAYxyy	ENCYxyy	Henry Hub	ENOYxyy	ENMYxyy
ERCOT South Hub	Tenn Zn0	ESAYxyy	ESCYxyy	Henry Hub	ESOYxyy	ESMYxyy
ERCOT West Hub	Waha	EWAYxyy	EWCYxyy	Henry Hub	EWOYxyy	EWMYxyy
West Region						
Alberta	TC Alb AEEO-C	ALAYxyy	ALCYxyy	Henry Hub	ALOYxyy	ALMYxyy
Calif-Oregon Border	PG&E Malin	COAYxyy	COCYxyy	Henry Hub	COOYxyy	COMYxyy
East Colorado	CHEYENNE	WEAYxyy	WECYxyy	Henry Hub	WEOYxyy	WEMYxyy
Four Corners	El Paso SanJuan	FCAYxyy	FCCYxyy	Henry Hub	FCOYxyy	FCMYxyy

HEAT RATE HUB PAIRS

Power Hub Name	Gas Hub 1	OffPeak Symbol	Peak Symbol	Gas Hub 2	OffPeak Symbol	Peak Symbol
Mead	SoCal Gas	MEAYxyy	MECYxyy	Henry Hub	ME0Yxyy	MEMYxyy
Mid-Columbia	NW Can Bd Sumas	MCAyxyy	MCCYxyy	Henry Hub	MCOYxyy	MCMYxyy
Nevada Oregon Border	Stanfield OR	NBAYxyy	NBCYxyy	Henry Hub	NBOYxyy	NBMYxyy
North Path 15	PG&E CG	NPAYxyy	NPCYxyy	Henry Hub	NPOYxyy	NPMYxyy
Palo Verde	SoCal Gas	PVAYxyy	PVCYxyy	Henry Hub	PVOYxyy	PVMYxyy
Pinnacle Peak	SoCal Gas	PKAYxyy	PKCYxyy	Henry Hub	PKOYxyy	PKMYxyy
South Path 15	SoCal Gas	SPAYxyy	SPCYxyy	Henry Hub	SPOYxyy	SPMYxyy
Utah	KERN RIVER OPAL	WUAYxyy	WUCYxyy	Henry Hub	WU0Yxyy	WUMYxyy
National Package						
ERCOT Houston Hub	Houston ShipChl	EHAZxyy	EHCZxyy	Henry Hub	EH0Zxyy	EHMZxyy
ERCOT North Hub	TX Eastern E TX	ENAZxyy	ENCZxyy	Henry Hub	EN0Zxyy	ENMZxyy
ERCOT South Hub	Tenn Zn0	ESAZxyy	ESCZxyy	Henry Hub	ES0Zxyy	ESMZxyy
ERCOT West Hub	Waha	EWAZxyy	EW CZxyy	Henry Hub	EW0Zxyy	EW MZxyy
Into Southern	Transco Zn4	ISAZxyy	ISCZxyy	Henry Hub	IS0Zxyy	ISMZxyy
Mead	SoCal Gas	MEAZxyy	MECZxyy	Henry Hub	ME0Zxyy	MEMZxyy
Mid-Columbia	NW Can Bd Sumas	MCAZxyy	MCCZxyy	Henry Hub	MCOZxyy	MCMZxyy
MISO Arkansas Hub	Enable Gas E	AKAZxyy	AKCZxyy	Henry Hub	AK0Zxyy	AKMZxyy
MISO Indiana Hub	Chicago CG	IDAZxyy	IDCZxyy	Henry Hub	ID0Zxyy	IDMZxyy
MISO Louisiana Hub	Col Gulf LA	LA AZxyy	LACZxyy	Henry Hub	LA0Zxyy	LAMZxyy
MISO Texas Hub	NGPL Texok Zn	TXAZxyy	TXCZxyy	Henry Hub	TX0Zxyy	TXMZxyy
NEPOOL Mass Hub	Algonquin CG	MHAZxyy	MHCZxyy	Henry Hub	MH0Zxyy	MHMZxyy
North Path 15	PG&E CG	NPAZxyy	NPCZxyy	Henry Hub	NPOZxyy	NPMZxyy
NY ISO Zone A (West)	Niagara	WNAZxyy	WNCZxyy	Henry Hub	WN0Zxyy	WNMZxyy
NY ISO Zone G (Hudson Val)	Iroquois Zn2	EACZxyy	EAAZxyy	Henry Hub	EA0Zxyy	EAMZxyy
NY ISO Zone J (NYC)	Transco Zn6 NY	EYAZxyy	EYCZxyy	Henry Hub	EY0Zxyy	EYMZxyy
Ontario	Dawn Ontario	ONAZxyy	ONCZxyy	Henry Hub	ON0Zxyy	ONMZxyy
Palo Verde	SoCal Gas	PVAZxyy	PVCZxyy	Henry Hub	PV0Zxyy	PVMZxyy
PJM AD Hub	Mich Con CG	ATAZxyy	ATCZxyy	Henry Hub	AT0Zxyy	ATMZxyy
PJM NI Hub	Chicago CG	NIAZxyy	NICZxyy	Henry Hub	NI0Zxyy	NIMZxyy
PJM Western Hub	TX Eastern M-3	PWAZxyy	PWCZxyy	Henry Hub	PW0Zxyy	PWMZxyy
South Path 15	SoCal Gas	SPAZxyy	SPCZxyy	Henry Hub	SPOZxyy	SPMZxyy

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REVISION HISTORY

May 2018: Simplified symbol tables. Added National Package symbols. Corrected Heat Rate Hub Pairs and added symbols.

January 2018: Edited to add ISO-NE Salisbury Node 345.

February 2017: Platts revamped this Methodology And Specifications Guide effective February 2017. This revision was completed to remove reference to the following discontinued products: 10 & 20 year historical volatility curves (which are being replaced by implied volatility curves), spark spreads and correlation curves. This revision was also completed to include coverage changes to the M2MS-Power product. Specifically, 6 hubs were added to bring the total number of hubs covered to 72.

November 2015: Platts revised this Methodology and Specifications Guide effective November 2015. This revision was completed to include coverage and definition changes to the M2MS-Power product – 5 location additions, 1 location name change, and 5 location discontinuations. This revised guide also reflects a balance of the month definition.

April 2015: Platts revamped this Methodology And Specifications Guide effective March 2015. This revamp was completed to enhance the clarity and usefulness of the guide, and to introduce greater consistency of layout and structure across all published methodology guides. Methodologies for market coverage were not changed through this revamp, unless specifically noted in the methodology guide itself.