

ARGUS NORTH AMERICAN HEAT RATE FORWARD CURVES

Contents:

Introduction	2
Curve length	2
Corrections to assessments	3
Ethics and compliance	3
Updates to methodology	3

LAST UPDATED: OCTOBER 2022

The most up-to-date Argus North American Heat Rate Forward Curves methodology is available on www.argusmedia.com



Methodology overview

Methodology rationale

Argus produces daily forward price curves that are distinct from the forward price assessments published in Argus market reports.

Argus forward curves are the modelled current value of a forward delivery or loading period at the specified timestamp on the day of publication and are not forecasts of future spot prices.

Argus forward curves are produced using models designed to produce reliable and representative indicators of commodity market values, free from distortion.

Model inputs and outputs, including the final forward curves, intermediate values that may be generated during the production process and reports, are subjected to ongoing validation to ensure that the models perform as expected in generating representative prices.

Argus North American Heat Rate Forward Curves

Means of calculation

For each term and location, Argus publishes a midpoint, bid level, and offer level for two types of heat rate:

- Nymex heat rates: Argus divides its electricity assessment by the settlement price for the corresponding CME Henry Hub futures contract.
- Other natural gas heat rates: Argus divides its electricity assessment by its assessment of a corresponding local natural gas market.

See the Argus North American Electricity Forward Curves and Argus North American Natural Gas Forward Curves methodologies.

Curve length

Heat rate are calculated for 84 months forward, the current year, five years, 27 quarters and 21 seasons forward. Note, winter is January-February, spring is March-April and summer is July-August.

Timing

Heat rates are as of the close of CME's Henry Hub futures primary trading session, normally 14:30 EST.

Currency and units of assessment:

Heat rates are calculated in mn Btu/MWh

Corrections

Argus will on occasion publish corrections to forward curve prices after the publication date. We will correct errors that arise from clerical mistakes, calculation errors, or a misapplication of our stated methodology. Argus will not retroactively change published prices based on new information learned after publication. We make our best effort to produce forward curves based on the information we gather during the trading day assessed.

Corresponding natural gas markets			
Region	Electricity market	Corresponding natural gas market	
	Houston Load Zone	HSC	
	Houston Zone	Waha	
ERCOT	North Load Zone	HSC	
	North Zone	Waha	
	South Zone South Load Zone	Waha Waha	
	West Zone	Katy	
	West Load Zone	Katy	
FRCC	Florida	FGT - Z3	
	Connecticut Zone	Algonquin	
ISO-NE	Massachusetts Hub	Algonquin	
	Maine Zone	Algonquin	
	NEMA Zone New Hampshire Zone	Algonquin Algonquin	
	Rhode Island Zone	Algonquin	
	SEMA Zone	Algonquin	
	WCMA Zone	Algonquin	
	Arkansas Hub	Centerpoint	
	DEOK Hub	TCO	
	Entergy	Centerpoint	
MICO	Illinois Hub	Chicago CG	
MISO	Indiana Hub	TCO	
	Louisiana Hub Michigan Hub	Trunkline-LA Michcon CG	
	Minnesota Hub	Chicago CG	
	Texas Hub	HSC	
	Zone A	Niagara	
	Zone B	Niagara	
	Zone C	Niagara	
	Zone D	Niagara	
	Zone E	Niagara	
NYISO	Zone F	Algonquin	
	Zone G Zone H	Algonquin Algonquin	
	Zone I	Algonquin	
	Zone J	Transco zone 6 (NY)	
	Zone K	Transco zone 6 (NY)	
	AD Hub	TCO	
	AECO Zone	Transco Zone 6 (non-NY)	
	AEP Zone	TCO	
	APS Zone	Tetco - M3 Tetco - M3	
	ATSI Zone BGE Zone	Transco Zone 6 (non-NY)	
	ComEd Zone	Chicago CG	
	Dayton Zone	TCO	
	DEOK Hub	TCO	
	DPL	Transco Zone 6 (non-NY)	
PJM	Duzuesne Zone	Tetco - M3	
	East Hub	Transco Zone 6 (non-NY)	
	JCPL Zone Meted Zone	Transco Zone 6 (non-NY) Transco Zone 6 (non-NY)	
	NI Hub	Chicago CG	
	Peco Zone	Transco Zone 6 (non-NY)	
	Penelec Zone	Transco Zone 6 (non-NY)	
	PEPCO Zone	Transco Zone 6 (non-NY)	
	PPL Zone	Tetco - M3	
	PSEG Zone	Transco Zone 6 (non-NY)	
	RECO Zone	Transco Zone 6 (non-NY)	
CEDO	West Hub	Tetco - M3	
SERC	Southern Hub SPP North Hub	Tetco - ELA PEPL	
SPP	SPP North Hub	PEPL	
VACAR	VACAR	TCO	
	COB	PG&E CG	
WSPP	Four Corners	EP San Juan	
	Mead	EP Permian	
	Mid Columbia	MALIN	
	NP 15	PG&E CG	
	Palo Verde	EP Permian	
	SP 15	Socal	



Ethics and compliance

Argus operates according to the best practices in the publishing field, and maintains thorough compliance procedures throughout the firm. We want to be seen as a preferred provider by our subscribers, who are held to equally high standards, while at the same time maintaining our editorial integrity and independence. Argus has a strict ethics policy that applies to all staff. The policy can be found on our website at www.argusmedia.com.

Included in this policy are restrictions against staff trading in any energy commodity or energy related stocks, and guidelines for accepting gifts. Argus also has strict policies regarding central archiving of email and instant messenger communication, maintenance and archiving of notes, and archiving of spreadsheets and deal lists used in the forward curve generation process. Argus publishes prices that report and reflect prevailing levels for open-market arms length transactions (please see the Argus Global Compliance Policy for a detailed definition of arms length).

Review of methodology

The overriding objective of any methodology is to produce prices which are reliable and representative indicators of commodity market values and are free from distortion. As a result, Argus regularly examines our methodologies and is in regular dialogue with the industry in order to ensure that the methodologies are representative of the market being assessed.

In addition to this ongoing review of methodology, Argus conducts reviews of all of its methodologies and methodology documents on at least an annual basis.

Argus will periodically and as merited initiate reviews of market coverage based on a qualitative analysis that includes measurements of liquidity, visibility of market data, consistency of market data, quality of market data and industry usage of the resulting forward prices. Argus will review:

- Appropriateness of the methodology of existing forward
 Curves
- · Termination of existing forward curves
- Initiation of new forward curves

An informal process will be initiated to examine viability. This process includes:

- Informal discussions with market participants
- Informal discussions with other stakeholders
- · Internal review of market data

Should changes, terminations, or initiations be merited, an internal proposal will be submitted to management for review and approval. Should changes or terminations of existing forward curves be approved, then formal procedures for external consultation are begun.

Changes to methodology

Formal proposals to change methodologies typically emerge out of the ongoing process of internal and external review of the methodologies. Formal procedures for external consultation regarding material changes to existing methodologies will be initiated with an announcement of the proposed change published to subscribers. This announcement will include:

- Details on the proposed change and the rationale
- Method for submitting comments with a deadline for submissions
- Notice that all formal comments will be published after the given consultation period unless submitter requests confidentiality.

Argus will provide sufficient opportunity for stakeholders to analyse and comment on changes, but will not allow the time needed to follow these procedures to create a situation wherein unrepresentative or false prices are published, markets are disrupted, or market participants are put at unnecessary risk.

Argus will engage with industry throughout this process in order to gain acceptance of proposed changes to methodology. Argus cannot however guarantee universal acceptance and will act for the good order of the market and ensure the continued integrity of its forward curves as an overriding objective.

Following the consultation period, Argus management will commence an internal review and decide on the methodology change. This will be followed by an announcement of the decision, which will be published to subscribers and include a date for implementation.

Publishing schedule

Argus International Biofuels Forward Curves are published on weekdays, according to a publishing schedule that is available at www.argusmedia.com.