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ARGUS COAL DAILY

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The most up-to-date Argus Coal Daily methodology is available on www.argusmedia.com

Introduction

Argus Media publishes Argus Coal Daily, Argus Coal Daily International, Argus Petroleum Coke, Argus Coal Transportation, Argus/Coallndo Indonesia Coal Index Report and Argus Russian Coal as well as market reports and newsletters on a wide range of energy markets.

Argus Coal Daily contains

- daily prices from US over-the-counter physical coal markets
- daily prices from the forward financial markets (swaps, electronic trade and futures exchanges)
- weekly prices from US physical spot coal markets
- weekly prices from US physical forward markets
- market commentary
- freight rate tables
- spark spread tables
- news on issues that lie behind the market
- weekly SO₂ allowance price indexes
- monthly benchmark price indexes for physical coal

Americas coal assessments

Argus assesses Americas-region coal prices in two related but separate markets: the traditional spot markets for physical coal, and the over-the-counter (OTC) market for coal. The distinction is reflective of the specific trading and delivery requirements of dry-bulk fuels markets, with daily assessment of standardized trading products and weekly assessment of less liquid spot physical transactions. Argus publishes prices that report and reflect prevailing levels for open-market arm's length transactions (please see the Argus Global Compliance Policy for a detailed definition of arm's length).

Argus records transactions that are reported and constructs a volume-weighted average of the transaction prices that meet the assessment criteria. The transactions are verified and those within the specifications will influence the final assessment.

The market reporters/analysts ask market participants in the survey whether they have done any trade, whether they have heard of any trade, and whether they have received any bids or offers for market-relevant coal. The participants are asked where they see the level of prices for coal traded on the bulk international spot market.

Argus then assesses the price of the standard coal specifications listed in the "Weekly US domestic physical coal assessments" or "Daily over-the-counter market assessments and indexes" tables on the basis of transactions and buy/sell estimates. This combination of input eliminates the opportunity for gaming the mechanics of the index.

Argus does not exclusively rely upon transactions to establish market prices. This is to avoid "leverage" - where real transactions for limited volumes of coal are concluded with the intention of creating a price level in an index which then underlies index-linked

physical or forward contracts. This is a proven problem with indices in other markets and one which Argus avoids through its tested methodology.

All information received by the Argus market reporters/analysts will be used in making the final assessment. Information on transactions and offers that lie outside the specifications of timing and size and quality will be taken into account but information that lies within the listed specifications of the assessment will be given most weight.

Physical market assessments

The Argus Coal Daily Physical Market Assessments reflect the value at which deals were done or could have been done for a particular physical coal grade during the period assessed. The assessments are published weekly on Friday, and reflect the value during the 5 days of the week including Friday. The time periods assessed indicate the period during which the coal is to be delivered (see Timing below for more detail).

Argus also publishes monthly index values of key regional benchmarks for use in supply contracts. These indexes are the monthly average of the weekly physical market assessments and reflect the most liquid specification for regional physical coal markets.

OTC trading market assessments

The Argus Coal Daily OTC Market Assessments are published daily and reflect the value at which deals were done or could have been done in the standardized over-the-counter markets each day. This short list of standard contracts, with up to five markets typically active daily, provides a trading platform for financial and physical coal trading, but is typically not used as settlement for supply contracts for coal purchasing by generators.

Physical methodology

Survey

Argus Coal Daily publishes price assessments of physical coal markets for the Americas every week, typically on Fridays. A schedule of publication is available at www.argusmedia.com

The Argus coal team consists of specialist market reporters in Washington, London, New Jersey, Singapore, Sydney, Moscow and Johannesburg. The team contacts a wide cross section of coal market participants through telephone survey, instant messenger, and through email communication. A balance is maintained in the survey between sellers of physical coal, utility buyers, trading companies and brokers.

The market reporters/analysts record the transactions that are reported and construct a volume-weighted average of the transaction prices that meet the assessment criteria. The transactions are verified and those within the specifications will influence the final assessment.

Argus editors perform thorough surveys of market participants throughout the week, gathering information in order to make the assessments at the end of the week. This process involves gathering deals done, bids, offers, RFP's, assessments, as well as information on market fundamentals and trends that are influencing the direction of prices. All information is confirmed by cross-checking back with the industry over the course of the week, weighing the information against the fundamentals, and in the end aiming for a consensus with the marketplace as to the value of the specification assessed.

Argus will observe the daily market during this process, but recognizes that the financial trade of standardized contracts can bear only limited relation to physical coal market activity.

Transactional information does not always precisely match assessment specifications. Quality and timing differences between coals discussed in the physical market and coal assessed by Argus are taken into account, and adjustments made to compensate and arrive at a fair valuation of the grade assessed. At times deals are absent entirely, and we Argus relies on the consensus forming process to provide an accurate price at which a deal could have transacted.

The Argus Coal Daily Physical Market Assessments published on Friday reflect activity over the business days of that week including Friday. The price is a single number and is intended to represent the consensus value over the entire week, not just the value at which trade could occur on Friday.

Timing

Prices are assessed for volumes delivered in the prompt three calendar quarters (for instance 2nd quarter includes April, May, June), and for three calendar years forward. Prices are assessed for a given calendar quarter until the final business day of the prior quarter. For example, on April 1st, the prompt quarter would roll from being 2nd quarter to being 3rd quarter. Should this occur between two weekly Friday assessments, then the current Friday assessment will reflect a roll versus the previous Friday. Prices are also assessed for calendar years. The calendar year assessed will roll to the next year on January 1, with the last assessment of a given year on the last business Friday in December.

Physical grades assessed

See table on next page.

Argus Benchmark Coal Indexes

Argus publishes monthly indexes of benchmark coal prices for each basin assessed in North and South America. These indexes represent monthly settlement values for the most liquid coal types in each basin and are applicable for incorporation in coal-supply contracts.

These index values provide a sound foundation against which

Argus benchmark coal indexes					
	Heat content	Sulphur (lb/mmBtu)	Delivery mode	Delivery point	Standard lot size
Central Appalachian rail	12,500	1.6lb	FOB railcar	CSX - Big Sandy/Kanawha	Unit train
Central Appalachian barge	12,000	1.67lb	FOB barge	Big Sandy or Ohio Rivers Greenup Pool between the Byrd and Greenup lock complexes	5 barges
Illinois basin rail or mine	11,500	5.0lb	FOB mine, railcar	Illinois, Indiana or western Kentucky rate districts	Unit train or mine
Illinois basin barge	11,500	5.0lb	FOB barge	Fob barge between MP 896 and MP 784 on the Ohio River	5 barges
Northern Appalachian rail	13,000	4.0lb	FOB railcar	MGA rate district	Unit train
Atlantic basin seaborne	11,300	1.77lb	FOB vessel	Colombian Caribbean terminals	Panamax vessel
Western bituminous	11,300	0.9lb	FOB railcar	UP-served CO, UT, WY	Unit train
Powder River basin	8,800	0.8lb	FOB railcar	Joint Line	Unit train

basis adjustments can be made, with Argus' data subscribers and mid- and back-office users able to construct basis calculations for quality, quantity or delivery-point premiums or discounts against the benchmarks using other quality specifications for adjustments.

International, exported coal grades assessed

Argus assesses several grades of US coal priced at export terminals on the US Gulf and east coasts. Benchmarks include an international specification with 11,300 Btu/lb and less than 1pc sulphur on the US Gulf and east coasts, an 11,300 Btu/lb 3pc typical sulphur coal on the US Gulf and a 12,000 Btu/lb and less than 1pc sulphur coal on the US east coast at Hampton Roads.

International, export, import coal grades assessed

Argus assesses several grades and types of international coal, including coal for international coal trading to and from the US. Key benchmarks to the US include coal produced in Latin America, led by those loaded at Puerto Bolivar in Colombia, and the price for coal in the Amsterdam-Rotterdam-Antwerp (ARA) hub in Northwest Europe. From the US, coal priced FOB Hampton Roads on the east coast and FOB New Orleans, Louisiana are key benchmarks and represent the bulk of US export flows to the seaborne markets.

In addition to these price series, Argus also prices coal imports at three major terminals/regions on the east and Gulf coasts. A table listing those coals is above. More complete coverage of international markets covered and their specifications is available in Argus Coal Daily International.

Weekly US domestic physical coal assessments						\$/short ton
Location	Basis	Btu/lb	lb SO ₂ /mmBtu	Timing		Frequency
				Quarters	Years	
Central Appalachia						
Big Sandy "Nymex-spec"	FOB barge	12,000	(<1pc) 1.67lb SO ₂	3	2	Weekly
Kanawha River	FOB barge	12,000	(<1pc) 1.67lb SO ₂	3	2	Weekly
Big Sandy	FOB barge	12,000	1.2	3	2	Weekly
CSX rail	FOB rail	12,300	(<1pc) 1.63lb SO ₂	3	2	Weekly
CSX rail	FOB rail	12,500	1.2	3	2	Weekly
CSX rail	FOB rail	12,500	(<1pc) 1.6lb SO ₂	3	2	Weekly
CSX rail	FOB rail	12,500	2.0	3	2	Weekly
Powder River basin						
UP & BNSF Converse/Campbell	FOB mine	8,800	0.8	3	2	Weekly
UP & BNSF Converse/Campbell	FOB mine	8,400	0.8	3	2	Weekly
Illinois basin						
Ohio River in western Kentucky	FOB barge	11,500	5.0	3	2	Weekly
Illinois/Indiana	FOB mine	11,500	5.0	3	2	Weekly
Illinois/Indiana	FOB mine	11,500	1.2-1.8	3	2	Weekly
Ohio River in western Kentucky	FOB barge	11,800	2.5-3.0	3	2	Weekly
Illinois/Indiana	FOB mine	11,000	6.0	3	2	Weekly
Ohio River in western Kentucky	FOB barge	11,000	6.0	3	2	Weekly
Colorado/Utah						
Green River basin	FOB mine	11,300	0.9	3	2	Weekly
Uinta Basin, Colorado	FOB mine	11,700	0.9	3	2	Weekly
Uinta Basin, Utah	FOB mine	11,700	0.9	3	2	Weekly
Northern Appalachia						
Pittsburgh Seam	FOB mine	13,000	3.0	3	2	Weekly
Pittsburgh Seam	FOB mine	13,000	4.0	3	2	Weekly
Pittsburgh Seam	FOB mine	12,500	6.0	3	2	Weekly

International and US export coal assessments						\$/metric tonne
Location	Basis	Heat Content	Sulphur	Cargo size	Frequency	
US Gulf coast	FOB New Orleans, Louisiana (NOLA)	11,300 Btu/lb	3pc	Panamax	Daily	
Colombia	FOB Puerto Bolivar	11,300 Btu/lb	<1pc	Panamax	Daily	
US Gulf coast	FOB New Orleans, Louisiana (NOLA)	6,000 kcal/kg	<1pc	Panamax	Weekly	
US east coast	FOB Hampton Roads	12,000 Btu/lb	<1pc	Panamax	Weekly	
US east coast	FOB Hampton Roads	6,000 kcal/kg	<1pc	Panamax	Weekly	
Northwest Europe	CIF ARA	6,000 kcal/kg	<1pc	50,000-150,000	Weekly	
South Africa	FOB Richards Bay	6,000 kcal/kg	<1pc	50,000-150,000	Weekly	

US imported coal grades assessed								\$/metric tonne
Name	Location	Timing	\$/mt	Vessel	Pc Sulphur	Btu/lb	kCal/kg	Frequency
CIF Baltimore 12,800	CIF Baltimore	w/in 90 days	\$/mt	Panamax	<1pc	12,800	7,100	Weekly
CIF Baltimore 11,700	CIF Baltimore	w/in 90 days	\$/mt	Panamax	<1pc	11,700	6,500	Weekly
CIF Charleston 11,700	CIF Charleston	w/in 90 days	\$/mt	Panamax	<1pc	11,700	6,500	Weekly
CIF Charleston 11,300	CIF Charleston	w/in 90 days	\$/mt	Panamax	<1pc	11,300	6,300	Weekly
CIF Mobile 11,700	CIF US gulf coast	w/in 90 days	\$/mt	Panamax	<1pc	11,700	6,500	Weekly

OTC market assessments

The Argus Coal Daily OTC Market Assessments reflect the value at which deals were done or could have been done for the standard forward OTC contracts for the period assessed. The OTC market is trade of standardized contracts of a short list of common coals and is used for both financial hedging and physical delivery. Argus assesses the OTC market for the four most liquid coal contracts. The assessments are published daily, and reflect the value during the day assessed. The time periods assessed in-

dicating the delivery period as specified in the OTC contract traded (see Timing on next page for more detail).

The OTC market by definition is derivative of the underlying physical market. Since contracts can be allowed to become physical if held to the point of delivery, they have a distinct link to the physical market. Transactions can also represent financial commitments only and be offset by a counterbalancing trade in order to be used as a hedge or for speculative profit. As a result, the Argus OTC Market Assessments can differ from the Physical Market Assessments.

Daily over-the-counter market assessments and indexes							\$/short ton	
Location	Basis	Btu/lb	Sulphur	Timing			Frequency	
				Months	Quarters	Years		
Over-the-counter market assessments								
CSX rail	FOB rail	12,300	<1pc	2	3	2	Daily	
CSX rail	FOB rail	12,500	<1pc	2	3	2	Daily	
Nymex-spec CAPP	FOB barge	12,000	<1pc	2	3	2	Daily	
Powder River basin	FOB rail	8,800	0.8lb SO ₂ /mmBtu	2	3	2	Daily	
Powder River basin	FOB rail	8,400	0.8lb SO ₂ /mmBtu	2	3	2	Daily	

Assessing these standard OTC contracts provides our readers with a daily snapshot of the value at which they can execute OTC transactions. Physical purchase agreements settle monthly and should incorporate the Monthly Benchmark Indexes for price references in these supply contracts.

Survey

The basic survey approach to OTC price reporting is similar to physical market assessments. Argus editors perform diligent survey of OTC market participants. The team contacts a wide cross-section of coal market participants through telephone survey, instant messenger, and through email communication. Through this process we gather deals done, bids, offers, assessments, as well as information on market fundamentals and trends that are influencing the direction of prices. All information is confirmed by cross-checking back with the industry, in the end aiming for a consensus with the marketplace as to the value of each assessment.

The Argus Coal Daily OTC Market Assessments published each day reflect the bid/ask range observed during the day of publication. The low and high numbers represent the bids and offers seen at the 5pm ET timestamp. As a result, the midpoint of these two assessments represents the most likely price at which a deal could be transacted.

Markets for international coal are also assessed daily for FOB New Orleans and FOB Puerto Bolivar. For more information on these assessments, please see the table of "International and US Export Coal Assessments" above.

Timing

Prices are assessed for contracts traded for two nearby months, three calendar quarters (for instance 2nd quarter includes April, May, June), and the next two years. Monthly contract prices are assessed for a given month through the last business day of the prior calendar month. For example, on April 1, the prompt month would roll from being April to being May. Quarterly contract prices are assessed for a given calendar quarter up until the last business day of the prior quarter. For example, on April 1st, the prompt quarter would roll from being 2nd quarter to being 3rd quarter. Prices are also assessed for calendar years. The calendar year assessed will roll to the next year on January 1, with the last assessment of a given year on the last business day in December.

Daily OTC broker market indexes					\$/short ton
Location	Basis	Btu/lb	Sulphur	Frequency	
OTC Broker Index					
Nymex-spec Central App	FOB barge	12,000	<1pc	Daily	
CSX Central Appalachian	FOB rail	12,500	<1pc	Daily	
Powder River basin	FOB rail	8,800	0.8lb SO ₂ /mmBtu	Daily	
Powder River basin	FOB rail	8,400	0.8lb SO ₂ /mmBtu	Daily	

OTC broker index

To compile the Argus Coal Daily Over-The-Counter Broker Index price assessments, the Argus Coal Daily team of market reporters/analysts collects market assessments from coal brokerages — Evolution Markets LLC and ICAP/United Inc. Argus regards the individual quotes provided by brokers as confidential and will not release those figures to the public. Brokers' assessments are then averaged to derive the index price. However, if on any given day, a broker fails to provide an assessment, the remaining assessments are used to calculate the index.

Opt out provision

When necessary, a broker may elect to opt out of providing an assessment on any given day if it does not believe it can provide an accurate number for any reason. If this occurs, Argus will average the other assessments it receives to derive the index price.

Exclusion of outlying assessments

Argus will exclude from the index calculations any price assessment that is found to be significantly higher or lower than the average of all assessments received. For the eastern coal specifications, Argus will exclude any broker assessments that are 2% above or below the mean of all the submitted price assessments. For the PRB coal specifications, Argus will exclude any broker assessments that are 3% above or below the mean of all the submitted price assessments. In the event that an assessment is excluded, Argus will average the remaining assessments to derive the index price.

OTC contracts quoted

Argus will publish price assessments for four coal specifications as part of the Argus Coal Daily Over-The-Counter Broker Index. These prices are published daily and the following four specifications are listed in the Daily OTC Broker Market Indexes table above.

Definitions of term (delivery period)

The OTC Broker Index quotes prompt month and prompt quarter prices. The prompt month and quarter are those following the one in which the trading occurs. The delivery periods roll forward five business days before the end of the month for every calendar month and every quarter. The prompt month period is moved forward five business days before the end of the month. The prompt quarter period is moved forward five business days before the end of the month.

Average monthly prices

Argus publishes monthly average prices for the OTC Broker Index coal specifications. The averages for the previous month are updated on the prompt period roll date. The monthly averages for the OTC Broker Index are calculated by averaging every price published during the month.

Argus Coal Weekly and other markets

Physical market assessments

Argus Coal Weekly publishes monthly and quarterly average prices for all coals assessed. The monthly averages are calculated by taking a mathematical average of the assessments published on each Friday in a calendar month.

April 7	28.00
April 14	28.25
April 21	29.50
April 28	29.75
Average	28.88

OTC market assessments

Argus Coal Weekly publishes monthly and quarterly average prices for the OTC market coals assessed. The monthly prices are calculated by taking a mathematical average of the midpoint of the assessments published during each day in the calendar month.

All monthly averages published in Argus Coal Weekly will be assessed on a month-to-date basis, and will roll on the first Friday of each month. One historical month will be published for reference. Quarterly averages will roll on the first Friday of April, July, October, and January.

Emissions-adjusted coal assessments

Argus tracks the cost of sulphur dioxide (SO₂) and nitrogen oxides (NO_x) associated with the burning of coal in electric generating plants. Those costs are based on several factors, including the market prices for SO₂ and NO_x, the rate of emissions of those two

pollutants in a particular coal type, or market region. These emissions adjusted assessments assume a plant has no emissions control devices, and that the coal is burned alone, not mixed with other fuels or coal types. The assessments are also converted to the per-ton cost of coal, not to the impact on the cost of producing electricity in megawatt hours.

Prices for SO₂ and NO_x are based on those published by Argus in Argus Air Daily, which tracks prompt and forward allowances on both a daily and weekly basis. Both markets are based on the Environmental Protection Agency's allowance rules.

Daily SW Ohio emissions adjusted OTC coal price

This table reflects the price of coal delivered to southwest Ohio, adjusted for SO₂ and NO_x, and converted to \$/mmBtu. The NO_x values are the average emissions seen in the region. The calculations assume complete removal of emissions, rather than the reduction of a pollutant to any specific plant, company, state or federal limit.

Weekly emissions adjusted physical coal prices

This table reflects the FOB price of coal, adjusted for SO₂ and NO_x, and converted to \$/mmBtu. The NO_x values are the average emissions seen in five major power market hubs. No freight component is included. Prices are calculated for all coals that typically deliver into a given region. The calculations assume complete removal of emissions, rather than the reduction of a pollutant to a plant, company, state or federal limit. This is published on Fridays in Argus Coal Weekly.

Spark spreads

The implied spark spreads indicate the profitability of running a power plant taking into account variable fuel costs in the day-ahead, prompt-month and prompt-season markets. Argus spark spreads are based on Argus power and gas assessments and Argus Coal Daily coal assessments. Coal plant spark spreads are based on plants with an efficiency (heat) rate of 10,000 Btu/kWh, while gas spark spreads are based on 8,000 Btu/kWh. On Thursdays, Argus Coal Daily publishes an enhanced range of coal plant efficiencies and publishes off-peak spark data, in addition to the daily peak data.

Coal prices used in the spark spread calculation are delivered prices to the specified power market region. The fuel costs are based on the percentage of types of coals taken by utilities in the given region. Transport costs are based on actual or anticipated costs of moving coal by rail or barge from the mine to the utility plant. Rates for those delivery routes are updated monthly and published in Argus Coal Transportation.