# Methodology and Specifications

**for**

## Coking Coal Queensland Index (CCQ©)

**And**

## Coking Coal Hampton Roads Index (CCH©)

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**Prepared by**


**Energy Publishing**

(with assistance from Doyle Trading Consultants LLC)

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## Introduction

After considerable planning and consultation with industry leaders, Energy Publishing, with the assistance of Doyle Trading Consultants LLC, is proud to introduce three new price indexes for coking coal:

- The Coking Coal Queensland Index - CCQ©
- The Coking Coal Hampton Roads Index, Low Vol – CCH-LOW©
- The Coking Coal Hampton Roads Index, High Vol – CCH-HIGH©

The Energy Publishing group of companies publishes the leading coal market newsletters covering all regions of the world. These include: the Australian Coal Report, the China Coal Report, Clean Coal, Coal Americas, Coalfax, Coal & Energy Price Report, From the Coal Face, Indonesian Coal & Power, Inside coal, the Petcoke Report and the U.S. Coal Review. These publications – some of which have been in existence for almost 30 years - have a well-deserved reputation for their reliability, comprehensiveness and in-depth coverage and understanding of coal market trends and events. Our offices in Australia, China, South Africa and the United States are staffed by professionals with a good working knowledge of the Atlantic and Pacific coking coal markets.

One of the key features in several of these publications is the inclusion of steam coal market prices and price indexes, including: the South African Steam Coal Index (SASCI), the Newcastle Export Index (NEX, formerly the Barlow Jonker Index) covering Australia, and the Hill Index covering several U.S. steam coal markets.

Energy Publishing, along with Doyle Trading Consultants, have created coking coal price indexes for the major hubs of Queensland, Australia (CCQ©) and Hampton Roads in the U.S. (CCH-LOW© and CCH-HIGH©). The seaborne coking coal market is growing in size, has become increasingly volatile and is moving toward more spot market transactions. We are confident that the CCQ©, the CCH-LOW© and the CCH-HIGH© will enable industry participants to structure index-linked transactions and to trade swaps in order to manage price volatility. Due to the fact that the steel industry's end-products (hot rolled coils, billets and rebar) and most of its inputs (iron ore, scrap, and ocean freight) are already traded, we anticipate the market will utilize the missing ingredient (a coking coal index) and robustly trade the steel mills' profit margin.

The CCQ© and CCH© indexes draw upon many different sources for prices and employ established procedures to ensure the reliability of the data from each source and the overall reliability and robustness of each calculated index. Neither Energy Publishing nor any of its employees have any financial interest in the index values; our only interest is to provide a reliable and tradable index that is a close proxy for the price of a prompt cargo of premium coking coal as defined in this document, and support the interests of the coal, steel and trading sectors we serve.

Doyle Trading Consultants LLC (DTC) has played an integral role in developing the index methodology so that the CCQ©, CCH-LOW© and CCH-HIGH© are credible and tradable proxies for the prompt physical market. DTC will have no role in the weekly index compilation. Likewise, DTC will have no access to any of the data used to determine the indexes.

This report sets out the procedures and specifications to be used in compiling the index. We will maintain a copy of this methodology report on our Coalportal© website.

## Definition of the Coking Coal Queensland Index - CCQ©

The CCQ© represents the prompt physical spot market price FOB port in Queensland for premium hard coking coals falling within the following quality parameters using ASTM sampling and testing standards:

| **Variable Group**: | |
|---|---|
| Total Moisture (a.r.): | 10% |
| Ash (a.d.): | 9.7% |
| Sulfur (a.d.): | 0.6% |
| CSR: | 70 (Nominal), 68 (Minimum) |
| | |
| **Core Group:** | |
| CSN: | >7 |
| Reflectance (Mean max Refl., $R_v$ %): | 1.15 – 1.52 |
| Fluidity (ddpm | 100 Plus |
| Volatiles (a.d.) | < 27% |

Where "a.r." means "as received" and "a.d." means "air dried".

Transactions, bids, offers, price assessments and two-way markets[1] will be included in the index calculation if: 1) vessel loading is scheduled within 90 days of data submission, 2) the payment is due shortly after vessel loading, 3) the coal quality is within the quality ranges specified above for all four of the "Core Group" measures and/or is considered by the index compilers (as evidenced by the market value of the coal over time) as a premium hard coking coal and 4) the price has been adjusted by the index compiler to account for deviations of quality, loading port and/or standard commercial terms and conditions as described in this document. Prices adjusted quarterly under contracts subject to termination if there is not agreement on quarterly price will also be considered.

[1] A "two-way market" is defined as a firm bid and offer for a specific product from the same counterparty. Such counterparties, who provide "two-way markets", are often referred to as "Market Makers".

**Note:** Any quality adjustments for sulfur, ash, moisture or CSR will be made according to the guidelines spelled out in the listing of standard commercial terms and conditions below. Any other quality adjustments will be limited to those cases where a history is available that shows a consistent price differential between the coal in question and premium coals as defined in the specs above.

Prices of prompt physical transactions of non-premium hard coking coal products will be included in the CCQ© compilation with appropriate market-based price adjustments for quality, but only after a firm price relationship to premium coals has been established. (No such relationships are known at this time.) Prices of prompt physical transactions of premium hard coking coal products from Port Kembla, Australia and/or Vancouver, Canada will be included in the CCQ© compilation with appropriate market-based price adjustments for ocean freight differentials (if any). Prices of prompt physical transactions of non-premium hard coking coal products from Port Kembla, Australia and/or Vancouver, Canada will be included in the CCQ© compilation with appropriate market-based price adjustments for ocean freight differentials (if any) and quality.

The quality measures (based on ASTM standards for sampling and testing) for Canadian coals considered in the current market to be equivalent to prime Queensland hard coking coals are:

| | |
|---|---|
| **Variable Group**: | |
| Total Moisture (a.r.): | 10% |
| Ash (a.d.): | 9.7% |
| Sulfur (a.d.): | 0.6% |
| CSR: | 70 (Nominal), 68 (Minimum) |
| | |
| **Core Group:** | |
| CSN: | >6.5 |
| Reflectance (Mean max Refl., $R_v$ %): | 1.05 – 1.30 |
| Fluidity (ddpm) | 25 Plus |
| Volatiles (a.d.) | < 29% |

Where “a.r.” means “as received” and “a.d.” means “air dried”.

Pricing will be in U.S. dollars per metric tonne. Index compilers will evaluate price transactions based on the following standard commercial terms and conditions:

- **Governing Laboratory Analysis**: Quality measurements taken at the vessel loading port will control.
- **Demurrage Costs**: The shipper will pay demurrage.
- **Loading Rates**: Vessel loading time will be standard for the port
- **Payment Terms**: Net payment shall be due within 30 days.
- **Standard Ash Adjustment**: $1.50 per 1% of ash above 10.0% or below 9.5% per tonne. (A dead band from 9.5% - 10.0%)

- **Standard Sulfur Adjustment**: $1.50 per 0.1% of sulfur above or below spec per tonne.
- **Standard Moisture Adjustment**: Price will be adjusted pro rata according to the percent of total moisture in the sample compared to the spec.
- **Standard CSR Adjustment**: Price will be adjusted according to the difference between the CSR for the coal in question and a nominal 70 CSR based upon historical values of $/CSR Unit. The value per unit of CSR will be based upon a 4-week moving average of the price spread compared to 70 CSR coals for each CSR level. However, this procedure will not be implemented until such time as sufficient actual data are available to establish an average value of the price effect per unit of CSR. In the interim, the adjustment will be $0.60 per percent of CSR plus or minus the nominal value of 70 percent. No coal with CSR less that 68 will be considered.

**Note**: When physical transactions are presented to index compilers, the participants will be asked whether or not the price reflects normal commercial terms and conditions as set forth in this report. Participants will inform the index compilers of the deviations, if any, and the index compilers will make the appropriate market-based adjustment.

## Definition of the Hampton Roads Coking Coal Index–CCH LOW©

The CCH-LOW© represents the prompt physical spot market prices FOB port in Hampton Roads, Virginia for premium low volatile coking coals falling within the following quality parameters (based on ASTM sampling and testing standards):

| **Variable Group:** | |
|---|---|
| Ash (a.d.): | 5.5% |
| Sulfur (a.d.): | 0.7% |
| Total Moisture (a.r.): | 8.0% |
| | |
| **Core Group:** | |
| Volatiles (a.d.): | 16 – 19% (See note) |
| FSI: | 7 – 9 |
| CSR: | 30+ |
| Mean max Reflectance, $R_v$ %): | 1.4 – 1.7 |

Where “a.r.” means “as received” and “a.d.” means “air dried”.

Note : In the case of Blue Creek coals in Alabama, the volatiles can be as high as 20.6%.

Transactions, bids, offers, price assessments and two-way markets[2] will be included in the index calculation if: 1) vessel loading is scheduled within 90 days of data submission, 2) the payment is due shortly after vessel loading, 3) the coal quality is within the quality ranges specified above for all 4 of the core group measures and/or is considered by the index compilers as a premium hard coking coal and 4) the price has been adjusted by the index compiler to account for deviations of quality, loading port and/or standard commercial terms and conditions as described in this document. Prices adjusted quarterly under contracts subject to termination if there is not agreement on quarterly price will also be considered.

**Note:** Any quality adjustments for sulfur, ash or moisture will be made according to the guidelines spelled out in the listing of standard commercial terms and conditions below. Any other quality adjustments will be limited to those cases where a history is available that shows a consistent price differential between the coal in question and premium coals as defined in the specs above.

Prices of prompt physical transactions of non-premium low vol coking coal products will be included in the CCH-LOW© compilation with appropriate market-based price adjustments for quality, but only after a firm price relationship to premium coals has been established. (No such relationships are known at this time.) Prices of prompt physical transactions of premium coking coal products from Mobile, Alabama, Baltimore, Maryland and New Orleans, Louisiana will be included in the CCH-LOW© compilation with appropriate market-based price adjustments for ocean freight differentials (if any). Prices of prompt physical transactions of non-premium low vol coking coal products from Mobile, Alabama, Baltimore, Maryland and New Orleans, Louisiana will be included in the CCH-LOW© compilation with appropriate market-based price adjustments for ocean freight differentials (if any) and quality.

Pricing will be in U.S. dollars per metric tonne.

Index compilers will evaluate price transactions based on the following standard commercial terms and conditions:

- **Governing Laboratory Analysis**: Quality measurements taken at the vessel loading port will control.
- **Demurrage Costs**: The shipper will pay demurrage.
- **Loading Rates**: Vessel loading time will be standard for the port
- **Payment Terms**: Net payment shall be due within 30 days.
- **Standard Ash Adjustment**: 3% of the FOB price per 1% of ash above or below spec per tonne.
- **Standard Sulfur Adjustment**: $1.50 per 0.1% of sulfur above or below spec per tonne.

[2] A "two-way market" is defined as a firm bid and offer for a specific product from the same counterparty. Such counterparties, who provide "two-way markets", are often referred to as "Market Makers".

- **Standard Moisture Adjustment**: Price will be adjusted pro rata according to the percent of total moisture in the sample compared to the spec.

Note: When physical transactions are presented to index compilers, the participants will be asked whether or not the price reflects normal commercial terms and conditions as set forth in this report. Participants will inform the index compilers of the deviations, if any, and the index compilers will make the appropriate market-based adjustment.

## Definition of the Hampton Roads Coking Coal Index–CCH HIGH©

The CCH-HIGH© represents the prompt physical spot market prices FOB port in Hampton Roads, Virginia for premium (Type A) high volatile coking coals falling within the following quality parameters:

| **Variable Group:** | |
|---|---|
| Ash (a.d.): | 7.0% |
| Sulfur (a.d.): | 0.9% |
| Total Moisture: | 8.0% |
| | |
| **Core Group:** | |
| Volatiles (a.d.): | 32 - 35% |
| FSI: | 7 – 9 |
| Arnu | 240 + |
| Fluidity (ddpm) | >28,000 |
| Mean max Reflectance, $R_v$ %): | 1.01 – 1.15 |

Where "a.r." means "as received" and "a.d." means "air dried".

Transactions, bids, offers, price assessments and two-way markets[3] will be included in the index calculation if: 1) vessel loading is scheduled within 90 days of data submission, 2) the payment is due shortly after vessel loading, 3) the coal quality is within the quality ranges specified above for at least 4 of the 5 core group measures and/or is considered by the index compilers as a premium hard coking coal and 4) the price has been adjusted by the index compiler to account for deviations of quality, loading port and/or standard commercial terms and conditions as described in this document. Prices adjusted quarterly under contracts subject to termination if there is not agreement on quarterly price will also be considered.

[3] A "two-way market" is defined as a firm bid and offer for a specific product from the same counterparty. Such counterparties, who provide "two-way markets", are often referred to as "Market Makers".

**Note:** Any quality adjustments for sulfur, ash or moisture will be made according to the guidelines spelled out in the listing of standard commercial terms and conditions below. Any other quality adjustments will be limited to those cases where a history is available that shows a consistent price differential between the coal in question and premium coals as defined in the specs above.

Prices of prompt physical transactions of non-premium low vol coking coal products will be included in the CCH-HIGH© compilation with appropriate market-based price adjustments for quality, but only after a firm price relationship to premium coals has been established. (So such relationships are known at this time.) Prices of prompt physical transactions of premium coking coal products from Mobile, Alabama, Baltimore, Maryland and New Orleans, Louisiana will be included in the CCH-HIGH© compilation with appropriate market-based price adjustments for ocean freight differentials (if any). Prices of prompt physical transactions of non-premium low vol coking coal products from Mobile, Alabama, Baltimore, Maryland and New Orleans, Louisiana will be included in the CCH-HIGH© compilation with appropriate market-based price adjustments for ocean freight differentials (if any) and quality. Pricing will be in U.S. dollars per metric tonne.

Index compilers will evaluate price transactions based on the following standard commercial terms and conditions:

- **Governing Laboratory Analysis**: Quality measurements taken at the vessel loading port will control.
- **Demurrage Costs**: The shipper will pay demurrage.
- **Loading Rates**: Vessel loading time will be standard for the port
- **Payment Terms**: Net payment shall be due within 30 days.
- **Standard Ash Adjustment**: 3% of the FOB price per 1% of ash above or below spec per tonne.
- **Standard Sulfur Adjustment**: $1.50 per 0.1% of sulfur above or below spec per tonne.
- **Standard Moisture Adjustment**: Price will be adjusted pro rata according to the percent of total moisture in the sample compared to the spec.

Note: When physical transactions are presented to index compilers, the participants will be asked whether or not the price reflects normal commercial terms and conditions as set forth in this report. Participants will inform the index compilers of the deviations, if any, and the index compilers will make the appropriate market-based adjustment.

## Schedule for Publication of Indexes

Each index figure will be published once each week at the same time. The publication time for the both indexes will be each Friday at 12 noon local Brisbane, Australia time. (This is currently equivalent to 10 p.m. Thursday U.S. east coast time and 2 a.m. Friday in London.)

On those occasions when a public holiday falls on the scheduled publication date, the publication date will move to the day prior to the holiday.

## Data Collection

***Participation from Price Providers****:* We will collect price data from coking coal producers, coking coal consumers and coking coal traders and market makers. Participation by providers is at the sole discretion of the index compiler (with oversight from the Advisory Committee.)

***Price Submission Deadline:*** The participants will provide transaction data and/or bids & offers to the index compilers verbally or in writing to Energy Publishing's Knoxville office no later than 12 noon U.S. east coast time each Thursday for the CCH© data, and to Energy Publishing's Brisbane office no later than 4 p.m. Brisbane time each Thursday for the CCQ© data. The index compilers will publish each weekly index at noon on Friday, Brisbane time.

***Archiving of Price Data:*** We will transcribe and archive all verbal responses and archive all written responses. We will also archive written records of all market-based price adjustments for deviations from quality, location and/or standard terms and conditions as defined in this report.

***Confirmation of Prompt Transactions:*** Except as detailed below, price providers will confirm that each submitted transaction is a one-time prompt transaction as defined by this document; is not connected with any past or future transaction; and is without any explicit or implicit obligation beyond the specific prompt transaction in question. The exception to this rule is that quarterly re-pricing of contracts that will end if there is no price agreement will be included in the compilation of data.

***Material Deviations:*** Upon providing the transaction price, each price data provider will be asked to confirm that each submitted transaction conforms materially to the quality parameters and the standard terms and conditions as defined in this document – or to provide the index compilers with the pertinent details that deviate from the index quality and/or standard terms and conditions. Index compilers will make market-based price adjustments accordingly.

## Calculation of Index Values

We will screen all price data submissions to verify that they conform to the index methodology as described herein. The qualifying data will be examined by the index compilers to determine if there are outliers that might have undue influence on the average price calculated. If so, the outlying price data will be excluded from that week's index. If a data provider submits more than one outlier per month, that provider will be excluded from the index for the remainder of the month and the following month.

Providers of outliers are neither identified nor informed, and the index compilers will continue to accept data from those providers. An outlier will be defined as a value that is more than two standard deviations larger or smaller than the simple average of all prices submitted. If such an outlier is found, the average value of the index will be re-calculated without that outlier.

***Data Hierarchy:*** The index compilers will determine the weekly index using the following hierarchy of source price data:

1. Prompt transactions matching the index description.
2. Prompt transactions matching the index quality, but adjusted for different loading ports (Vancouver or Port Kembla for CCQ© and Mobile, Baltimore or New Orleans for CCH©), should differences in FOB prices due to origin port arise.
3. Bids, offers and two-way markets for prompt shipments matching the index description.
4. Prompt transactions that are price-adjusted to account for permissible deviations nesnin quality, loading port and/or standardized commercial terms and conditions. Prices adjusted quarterly under contracts subject to termination if there is not agreement on quarterly price will also be considered.
5. Price assessments of shipments matching the index description.

If there are at least 10 data points in the 1st category (prompt transactions matching the index description), then any data in categories 2 through 5 will be excluded from the calculation. Likewise, if the first two categories include at least 10 data points, the other categories will be excluded, etc.

***Ton Weighting:*** The index will be based on a metric tonne-weighted average of the data points included in the calculation. Price assessments and bids/offers will be included based on a standard 90,000 dwt vessel for the CCQ© calculations and a 70,000 dwt vessel for each of the CCH-LOW© or CCH-HIGH© calculations.

***Company Limits:*** In order to avoid undue influence on the market from any one data provider for actual physical transactions, the tonnes from any such single provider included in the calculation will be limited to 35% of the total tonnes (including the

standard vessel tonnages for assessments and bids/offers). If the data provided by any provider (whose total tonnage exceeds 35% of the overall total) includes several different shipments and prices, all of the tonnages will be reduced proportionately so that the total from that company equals 35%.

***No Influence from Swaps Markets:*** A swaps market will develop as a result of the CCQ© and CCH© indexes. Index compilers will never use prices from "paper" transactions in the swaps markets. The index compilers will also take care that participants who are submitting bids, offers and/or price assessments have not been influenced by trading activity in the underlying swaps markets.

***Auditing:*** We will record and archive all submissions from data providers. We will engage an independent auditor (chosen by the Advisory Committee) annually to search for any bias or anomalies in the individual submissions or the index compilation with particular emphasis on protecting the index from manipulation.

## Back-up Procedures

We will calculate the CCQ© and CCH© weekly. In the unlikely event that the index compilers determine that extenuating circumstances have resulted in insufficient, unusually erratic and/or suspicious price inputs and they conclude that they are unable to derive an index, they will follow instructions from the Advisory Committee, who will nominate three neutral experts, representing the consumption, production and trading sectors to determine that week's index.

## Advisory Committee

We will establish an advisory committee with representatives from the major producers, consumers and traders to review the processes and definitions used in the calculation of the index.