



Canadian Crude Oil Price Index Methodology

Canadian Enerdata Ltd. (Enerdata) is an independent energy information and consulting firm established in 1984. The company conducts confidential crude oil and natural gas pricing surveys and calculates and publishes various price indices.

Canadian Crude Oil Price Indices

Canadian Consolidated Index Products ("CCI")

Indices will be calculated for the following crude oil products for Daily ("1D"), Monthly ("1M") and ("1C") Calendar Month Average:

C5 CCI – Canadian Condensate
WCS CCI – Western Canadian Select
SSP CCI – Canadian Light Synthetic Sweet
SW CCI – Canadian Light Sweet
LSB CCI – Canadian Sour
WCSUS CCI – Western Canadian Select at Cushing in U.S. dollars.
MID CCI – Midale
CLK EDM CCI – Cold Lake Edmonton
CLK HAR CCI – Cold Lake Hardisty
CLK @ HAR/WCS CCI – Cold Lake at Hardisty / Western Canadian Select
CLK @ EDM/WCS CCI – Cold Lake / Western Canadian Select

Please see the end of this document for additional products.

Index Period

Index hours are 7 AM MT to 4 PM MT.

In general, for each crude oil index product there are three index periods as follows:

1. The first trading day of the month prior to delivery until the last day before the first Notice of Shipments (NOS) date for the delivery month, inclusive.
2. The trading day from the Notice of Shipment (NOS) date for the month prior to the delivery month until the last day before the NOS date for the delivery month, inclusive.
3. Daily index for each trading day of the month.

Note: The official Notice of Shipment - NOS dates as published by Enbridge Pipeline.

Source Data

Enerdata obtains daily trade data from Marex Spectron and One Exchange (participating brokers) to calculate the Price Indices. The trade data will include only those consummated transactions for the relevant products during the Index Hours and over the Index Period.

The trade data file contains the following fields:

Product Name – Name of the product, pipeline, location.

Date/Time - The date and time of the Transaction that will be included in the generation of the Price Indices.

Trade ID – The unique identifier of the trade.

Price - The price agreed to in the Transaction that will be included in the generation of the Price Indices.

Daily Contract Quantity - The daily delivery quantity of energy agreed to in the Transaction that will be included in the generation of the Price Indices.

Please note that the trade data file does not include counterparty information.

Calculation Methodology

1. Volume Weighted Average: The volume weighted average price over the Index Period is calculated using the following methodology:

- a) Multiply the Transaction price by the Transaction quantity for each trade in the trade data file.
- b) Sum the product(s) achieved in step (a).
- c) Sum the Transaction quantity for each trade in the source data file.
- d) Divide the sum from step (b) by the sum from step (c).

Volume Weighted Average Price = $\text{Sum (Price x Quantity) / Sum (Quantity)}$

The weighted average prices are calculated for the respective Index Periods by Enerdata and subsequently cross-checked against a manual calculation for accuracy. Once verified, the weighted average prices are used in the generation of the Price Indices.

2. Daily Weighted Average: The daily weighted average price over the Index Period is calculated using the following methodology:

- a) Calculate the volume-weighted average prices for each Trading day over the Index Period.
- b) Sum the numbers calculated in volume (a).
- c) Sum the number of days in the Index Period.
- d) Divide (b) by (c).

Daily Weighted Average Price = $\text{Sum (Daily Volume Weighted Average Prices) / Sum (Number of days)}$

Price Assessments

In the event that no transactions are reported for a product on a given trading day, Enerdata will make a determination of the Daily Weighted Average Price. Such 'price assessments' are arrived at by Enerdata using market information such as bids and offers, settlement prices, prices at comparable locations and information obtained from informed market participants.

Methodology Revisions/Changes

Enerdata is entitled to amend this methodology in such manner and with such notice to any person, including Users, as it may determine in its sole discretion.

Publication of Price Indices

Enerdata will publish the Price Index data to participating brokers.

Additional Products

AHS CCI
AHS/WCS CCI
AWB CCI
AWB/WCS CCI
BHB @USGC CCI
Bow River CCI
BR/WCS CCI
CAL CCI
CDB CCI
CDB/WCS CCI
CLK @USGC CCI
FH CCI
FH/WCS CCI
HARDISTY LIGHT CCI
LSB ENB & EIL CCI
LSB WESTSPUR CCI
MID Cromer ENB CCI
MIDALE WESTSPUR CCI
PSO CCI
PSY CCI
PSY/SSP CCI
SEAL HEAVY CCI
SH/WCS CCI
SSP & SYN CCI
SW KER CCI
UHC CCI
WCS @NED CCI
WCS @USGC CCI
AWB @NED CCI
AWB @USGC CCI
Bak Common-Patoka CCI
Bak SW-BL CCI
Bak SW-JoCo CCI
Bak SW-Stan CCI
LLK CCI
LLK/WCS CCI
LT SW @GUERN CCI
MSB CCI
PSO/SW PEM CCI
SW @HAR CCI
UHC @CROMER CCI
AWB @ECHO CCI
Bak SW-Epp CCI
Bak SW-Ramberg CCI
Bak SW-Savage CCI
Bakk SW FOB BNSF CCI
CLK @ECHO CCI

LLB/WCS CCI
SYB @USGC CCI
SYN/SSP CCI

Please direct any questions or comments to:

Richard Zarzeczny, President
Canadian Enerdata Ltd.
richardz@enerdata.com
Tel: 905-642-8167
Cell: 416-518-7384