



**NGX Price Index Methodology Guide**  
May 2011 Version

**Natural Gas Exchange Inc.**

## NGX PRICE INDEX METHODOLOGY GUIDE

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## 1 Introduction

Natural Gas Exchange Inc. (“NGX”) owns and operates an electronic exchange and clearing operation for natural gas, crude oil and electricity spot and forward Products. NGX provides market participants with a fair, transparent and efficient marketplace for trading and a clearing structure that ensures performance of the resulting Transactions.

As a result, NGX has developed certain market price indices for selected Products and delivery locations that may be utilized by market participants. The purpose of this document is to lay out the methodology under which the generation and publication of the price indices are administered.

## 2 Contracting Party’s Agreement

All of the Transactions that are included in the process to determine the price indices are governed by the rules and regulations laid out in a standard form agreement (the “CPA”) between NGX and all market participants (“Contracting Parties”). The CPA lays out a standard set of rules that dictate the Transaction process with NGX, including how Contracting Parties become eligible to trade on the Exchange, how Transactions take place, and how performance of Transactions will be assured. Capitalized terms, other than those specifically defined herein, are defined in the CPA.

## 3 Intellectual Property Rights

NGX owns the right, title and interest in and to the following natural gas indices:

- NGX AB-NIT Same Day Index (formerly NGX Alberta Same Day Price or NGX Alberta Daily Spot Price)
- NGX AB-NIT Month Ahead Index (formerly NGX Alberta One-Month Spot Price)
- NGX AB-NIT Bidweek Index (formerly NGX Alberta Bid-Week One-Month Spot Price)
- NGX AB-NIT Yesterday Index (formerly NGX Alberta Yesterday Price)
- NGX AB-NIT Day Ahead Index (formerly NGX Alberta Next Day Price)
- NGX Spectra Station #2 Day Ahead Index (formerly NGX Station #2 Daily Spot Price)
- NGX GTN Malin Day Ahead Index (formerly NGX Malin Daily Spot Gas Price)
- NGX PG&E Citygate Day Ahead Index (formerly NGX PG&E Citygate Daily Spot Price)
- NGX TCPL-Chippawa Day Ahead Index (formerly NGX Chippawa Daily Spot Price)
- NGX Union-Dawn/TCPL-Chippawa Transport Day Ahead Index (formerly NGX Chippawa Transport Daily Spot Price)
- NGX TCPL-Emerson Great Lakes Day Ahead Index (formerly NGX Emerson/Great Lakes Daily Spot Price)
- NGX TCPL-Empress Day Ahead Index (formerly NGX Empress Daily Spot Price)
- NGX AB-NIT/TCPL-Empress Transport Day Ahead Index (formerly NGX Empress Transport Daily Spot Price)
- NGX TCPL-Iroquois Day Ahead Index (formerly NGX Iroquois Daily Spot Price)
- NGX Union-Dawn/TCPL-Iroquois Transport Day Ahead Index (formerly NGX Iroquois Transport Daily Spot Price)
- NGX TCPL-Niagara Day Ahead Index (formerly NGX Niagara Daily Spot Price)
- NGX Union-Dawn/TCPL-Niagara Transport Day Ahead Index (formerly NGX Niagara Transport Daily Spot Price)

- NGX TCPL-St. Clair Day Ahead Index (formerly NGX St. Clair Dawn Daily Spot Price)
- NGX TCPL-St. Clair/Union-Dawn Transport Day Ahead Index (formerly NGX St. Clair Dawn Transport Daily Spot Price)
- NGX Union-Dawn Day Ahead Index (formerly NGX Union Dawn Daily Spot Price)
- NGX Union-Parkway Day Ahead Index (formerly NGX Union Parkway Daily Spot Price)
- NGX Union-Dawn/Parkway Transport Day Ahead Index (formerly NGX Parkway Transport Daily Spot Price)
- NGX Alberta Flat Electricity RRO Index
- NGX Alberta Extended Peak Electricity RRO Index
- NGX Alberta Super Peak Electricity RRO Index

NGX owns the right, title and interest in and to the following crude oil indices that appear in reports accessible through the NGX Oil Trading Platform:

- TMX C5 WTI 1a
- TMX C5 WTI 1b
- TMX LSB WTI 1a
- TMX LSB WTI 1b
- TMX M WTI 1a
- TMX M WTI 1b
- TMX SW WTI 1a
- TMX SW WTI 1b
- TMX SYN WTI 1a
- TMX SYN WTI 1b
- TMX WCS WTI 1a
- TMX WCS WTI 1b

The crude oil indices that have “1a” in their name are calculated as the volume-weighted average of all transactions in the relevant product from 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. The official NOS dates are published by Enbridge Pipeline prior to the start of each calendar year.

The crude oil indices that have “1b” in their name are calculated as the simple average of the volume-weighted averages for each trading day during the same period.

The various price indices listed above (referred to individually as a “Price Index” or collectively referred to as the “Price Indices”) are the sole and exclusive property of NGX. The CPA allows the Contracting Parties to use the Price Indices that are made available to such Contracting Party for its business purposes but except to the extent such information was furnished by or relates solely to the Contracting Party and subject to certain other limited exceptions, the Contracting Party may not publish or otherwise disclose such information publicly. NGX may publish or otherwise disclose or cause to be disclosed such Price Indices.

## **4 Price Index Generation**

### *4.1 Index Period*

The Index Period is the period of time in which trading data is compiled for use in the generation of a particular Price Index. The Index Period may be a full calendar month, or a particular day or set of days, including Bid Week or the Pre-Nomination Crude Oil Trading Period.

Bid Week is defined as the last five Canadian business days of the calendar month, or a suitable representation as published by NGX to account for certain holidays in Canada and in the United States.

The Pre-Nomination Crude Oil Trading Period is defined as the Canadian business days from the first business day of the calendar month until the day before the initial deadline for Notice of Shipment (the "Initial NOS Deadline") with the relevant pipeline, typically the 20<sup>th</sup> calendar day of the month.

### *4.2 Index Hours*

All trades consummated during NGX market hours during the Index Period are included in the Indices.

Crude indices also include trades that are consummated on Shorcan Energy Brokers, Inc., an affiliate of NGX, for 30 minutes after the NGX market has closed.

### *4.3 Source Data*

To generate the Price Indices, NGX obtains source data files from the NGX Trading System. The source data files are extracted directly from the database that is populated by the NGX Trading System. Depending upon the Price Index that is to be generated, the source data file will be limited to only those Transactions within the relevant Products during the Index Period.

Crude indices also include data that is imported into the NGX Clearing System from Shorcan Energy Brokers Inc., an affiliate of NGX.

The source data file contains the following fields:

Product Name - The name of the Product from which the Price Indices will be derived.

Buyer Company/Trader - The name of the Contracting Party and the specific trader that consummated the purchase Transaction that will be included in the generation of the Price Indices.

Seller Company/Trader - The name of the Contracting Party and the specific trader that consummated the sale Transaction that will be included in the generation of the Price Indices.

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

Price - The price of energy 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.

The source data file contains one row for each Transaction that occurs on the NGX Trading System and therefore each trade is only counted once in the generation of the Price Indices.

#### 4.4 Volume Weighted Average

All Price Indices utilize volume weighted averages either in the calculation of the Index or as a component of the calculation of the Index. Weighted averages are utilized in an effort to minimize any trading anomalies or distress trading activity that might otherwise distort the data sample.

The volume weighted average price is calculated using the following methodology:

- a) Multiply the Transaction price by the Transaction quantity for each trade in the source 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).

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

The weighted average prices are calculated first by automated electronic routines 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.

#### 4.5 Daily Weighted Average

The Crude Oil Indices that include “1b” in their names are calculated as the simple average of the volume-weighted average price for each trading day during the calculation period.

This “daily weighted” average price is calculated using the following methodology:

- a) Calculate the volume-weighted average prices for each Trading day from the first of the month to the last day before the NOS date, inclusive.
- b) Sum the numbers calculated in volume (a).
- c) Sum the number of days in the period.
- d) Divide (b) by (c).

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

In the event no volume is transacted on a given trading day, NGX will make a determination of the Daily Weighted Average Price.

#### 4.6 Exclusion of Bilateral Transactions in Natural Gas Indices

Bilateral Transactions are trades entered into directly between two Contracting Parties through the NGX Trading System, pursuant to section 3.1 (g) of the CPA, for the purchase or sale of any Bilateral Product, which trade is cleared and settled in accordance with the terms and conditions of the bilateral agreement between the two Contracting Parties and not cleared and settled through the NGX Clearing System.

Bilateral Transactions that are entered into on the NGX Trading System in accordance with Section 3.1 (f) of the CPA are not included in the calculation of the Price Indices for the underlying Product.

#### *4.7 Inclusion of Bilateral Transaction in Crude Oil Indices*

Bilateral Transactions that are entered into on the Oil Trading Platform in accordance with article 3.1(g) of the CPA will be included in the calculation of the Price Indices for the underlying Product.

Bilateral transactions that are entered into on the trading system of Shorcan Energy Brokers Inc., an affiliate of NGX, and reported to NGX on the day of trade in accordance with the NGX-Shorcan procedures and guidelines, are also included in the calculation of the Price Indices for the underlying Product.

#### *4.8 Evaluation and Potential Exclusion of Irregular Market Data*

NGX will have the right to exclude any market data from inclusion in the source data, which appears to be irregular to the then prevailing market prices, during the period of investigation of any such Transactions. All of such market data will be included in the source data on satisfactory resolution of such investigation, provided that NGX resolves such investigation prior to the opening of the NGX Trading System on the next trading day.

#### *4.9 Inclusion of RFQ Transactions in Crude Oil Indices*

NGX will include any Request for Quote (RFQ) transactions negotiated on the NGX Trading System which would qualify to be in a Crude Oil Index had they been transacted as normal transactions.

RFQ transactions which fall outside the bid/offer spread showing on the NGX Trading System at the time of the trade will not be included in the Crude Oil Indices.

### **5 Changes to NGX Price Index Methodology Guide**

NGX will be entitled from time to time to amend this NGX Price Index Methodology Guide in such manner and with such notice to any person, including any Contracting Party, as it may determine in its sole discretion.

### **6 Publication**

NGX Price Indices are published by NGX and by selected third party publishers. All NGX Natural Gas Indices are published on the NGX website at <http://www.ngx.com/>. Select NGX Price Indices are also available through several publications of Canadian Enerdata Ltd. Crude Oil Indices are published on the NGX Oil Trading Platform.

#### *6.1 Reporting and Analytics*

NGX will publish reports from time-to-time to provide information regarding the NGX Price Indices. Such reports are designed to provide users of the Price Indices with the comfort of knowing that there is widespread participation in computing such Price Indices, while maintaining the anonymity of companies participating in the generation of the Price Indices.

## **7 Price Indices and the CPA**

NGX generates Price Indices derived from Transactions in Products offered via the NGX Trading System and the NGX Crude Oil Trading Platform.

### *7.1 Trades In Error and Disputed Trades*

If NGX determines that a Trade in Error has occurred on the NGX Trading System under the definition outlined in the CPA, then NGX will exclude such trades in the calculation of the Price Indices. Article 3.7 of the CPA defines the method by which NGX determines if a Trade in Error has occurred in a Cleared Product and outlines the consequences and notification process for such an event. Article 3.1(g) of the CPA describes the method for excluding bilateral trades in error, which must be agreed to by the parties and communicated to NGX by the earlier of (i) 120 minutes following the entering of the Bilateral Transaction or (ii) 60 minutes following the close of trading on the NGX Trading System on the Trading Day on which the Bilateral Transaction was entered.

Bilateral trades in error which are reported after this time will remain in the index with the indicator that they have been cancelled but remain in the index (“bilateral cancelled – in index”).

All trades which are disputed in the timeframes required by the CPA will be excluded from the crude indices whether or not they are ultimately determined to be in error.

### *7.2 Price Transparency*

Only those Transactions that are visible to market participants through the NGX Trading System are included in the calculation of the Price Indices, except as specifically stated below in the NGX Trading System Availability section of this document.

### *7.3 Linked Deals, Time Trades, and Multiple Month Terms*

Transactions defined as Linked Deals, Time Trades, and/or Transactions with multiple month terms (i.e. strip transactions) are not included in the calculation of the Price Indices.

### *7.4 NGX Trading System Availability*

#### *Individual Users*

During the operation of the NGX Trading System, a system that connects several hundred remote users, it is possible that certain individual users may experience connectivity problems from time to time. A loss of accessibility to the NGX Trading System, however, will not prevent individuals from consummating trades for inclusion in the Price Indices. In the event that an individual user or an individual group of users cannot access the NGX Trading System to submit orders, NGX is prepared to accept orders via telephone instructions. These orders will be posted by order entry agents internally at NGX based on the instructions provided by the user. Any Transactions that occur which include these orders will also be included in the source data file used to generate the Price Indices as if the users entered the orders in the normal manner.

#### *Aggregate User Base*

The NGX Trading System may experience technological problems that require the temporary

halting of trading capability or a temporary shut-down of the NGX Trading System. Both of these situations will make it impossible to continue to build the source data file for the indices in the usual manner as described in this document. While these periods of NGX Trading System downtime have traditionally been infrequent and traditionally quite brief, NGX has developed procedures to ensure that the impact of system outages are not detrimental to the generation of the Price Indices. These procedures will allow NGX to provide order entry, trading and clearing services manually via telephone instructions and confirmations during any system outages. Trades consummated on the NGX Trading System or via telephone orders during these system outages will be included in the resulting source data file used to generate the Price Indices. The Transactions will then be entered into the NGX Trading System once it is again available and all problems have been resolved. Any Transactions that were consummated manually during the outage, and therefore included in the source data file, will be published by NGX to ensure transparency.

#### *7.5 Real-Time Price Indices*

NGX provides running weighted averages of trading activity that will be considered for inclusion in the source data files for the Price Indices. These running weighted averages are provided as a source of information to assist market participants in making timely and informed decisions with respect to their indexed portfolios. The Real-time Price Indices should not be construed as the Price Indices themselves, but rather a representation of the trading activity that will comprise the verified and published Price Indices.

#### *7.6 Not Fair Market Value*

NGX does not make any representation to any person that the Price Indices derived from market activity on the NGX Trading System represents fair market value or is indicative of fair market value.

#### *7.7 Trading Irregularities*

Pursuant to the terms and conditions of the CPA, each Contracting Party has agreed not to engage in any trading irregularities, whether alone or in association with others, that may comprise manipulative activity or activity aimed at manipulation of prices.

#### *7.8 Limitation of Liability*

Neither NGX nor its agents, directors, officers and employees shall be liable to the Contracting Party for any losses, costs or expenses arising from any matter relating to the calculation, methodology of calculation, compilation, or publication of any Price Indices which are calculated by NGX which are used for the settlement of any Transaction. NGX does not make any express or implied warranties in respect of the results which may be achieved through the use of any of such Price Indices or in respect of the value of any of such Price Indices at any given time, nor that any settlement prices established are at a fair, proper or correct amount. Neither NGX nor its agents, directors, officers and employees shall, under any circumstances, be liable for errors or deficiencies in the calculation, methodology of calculation or publication of any of such Price Indices nor shall NGX be obligated to provide notice of, or publish, errors in any of such Price Indices in any manner.

Products, which are settled pursuant to the terms of the CPA on the basis of settlement prices reported by any entity other than NGX, are not issued, endorsed, sold or promoted by such entity, nor has such entity passed on their legality or suitability. Neither NGX, nor its respective

agents, officers and employees shall be liable to the Contracting Party for any losses, costs, expenses arising from any matter relating to the source or accuracy of the underlying data, calculation, methodology of calculation, compilation, or publication of any Price Indices which are used for the settlement of any Transaction and which are derived from any publication or any other third party index. NGX does not make any express or implied warranties in respect to the results which may be achieved through the use of any of the Price Indices or in respect of the values of any of the indices at any given time, nor that any settlement prices so established are at a fair, proper or correct amount. Neither NGX, nor its respective agents, directors, officers and employees shall, under any circumstances, be liable for errors or deficiencies in the calculation, methodology of calculation, compilation or publication of any of the indices nor shall the NGX be obligated to provide notice of, or publish, errors in any of the indices in any manner. Neither NGX nor any of its agents, directors, officers and employees shall be liable to the Contracting Party for any losses, damages, costs or expenses arising from any failure of publisher of such Price Indices to establish settlement prices or report settlement prices for their contracts at a fair, proper or correct amount.

APPENDIX A: PRICE INDEX METHODOLOGY

1 NGX AB-NIT Same Day Indices

NGX AB-NIT Same Day Index										
Calendar Date	Strip Begin Date	Strip End Date	Day Range	Quantity Traded (TJ/Day)	Number of Trades	High	Low	Weighted Average	Exchange Rate \$US/\$CAD	
Tuesday, February 1, 2011	1-Feb-11	1-Feb-11	Same Day	3,004.60	426	5	3.9	4.2398	1.0079	
2011	2-Feb-11	2-Feb-11	Same Day	2,318.00	305	3.9	3.68	3.7954	1.0118	
Thursday, February 3, 2011	3-Feb-11	3-Feb-11	Same Day	1,810.20	244	3.705	3.5	3.646	1.01	
Friday, February 4, 2011	4-Feb-11	4-Feb-11	Same Day	382	56	3.63	3.4575	3.5855	1.01	
Friday, February 4, 2011	4-Feb-11	6-Feb-11	Friday - Sunday	1,232.80	180	3.62	3.4725	3.5877	1.01	
Friday, February 4, 2011	5-Feb-11	7-Feb-11	Monday	1,370.60	153	3.635	3.5225	3.6175	1.01	
<b>Friday, February 4, 2011</b>	<b>4-Feb-11</b>	<b>6-Feb-11</b>	<b>Weekend #</b>	<b>1,232.80</b>	<b>180</b>	<b>3.62</b>	<b>3.473</b>	<b>3.5877</b>	<b>1.01</b>	
Saturday, February 5, 2011	5-Feb-11	5-Feb-11	Same Day	158.5	31	3.515	3.49	3.5035	1.01	
Sunday, February 6, 2011	6-Feb-11	6-Feb-11	Same Day	498.4	75	3.69	3.59	3.6611	1.01	
Monday, February 7, 2011	7-Feb-11	7-Feb-11	Same Day	1,519.00	201	3.62	3.46	3.5794	1.0115	
Tuesday, February 8, 2011	8-Feb-11	8-Feb-11	Same Day	1,428.10	178	3.51	3.425	3.4819	1.0095	
2011	9-Feb-11	9-Feb-11	Same Day	1,262.20	168	3.4	3.33	3.3715	1.0053	
Thursday, February 10, 2011	10-Feb-11	10-Feb-11	Same Day	1,806.00	235	3.34	3.255	3.2804	1.0045	
Friday, February 11, 2011	11-Feb-11	11-Feb-11	Same Day	461.5	63	3.255	3.15	3.2105	1.0098	
Friday, February 11, 2011	11-Feb-11	13-Feb-11	Friday - Sunday	1,678.50	220	3.23	3.08	3.1943	1.0098	
Friday, February 11, 2011	12-Feb-11	14-Feb-11	Monday	998.7	129	3.235	3.16	3.2093	1.0098	
<b>Friday, February 11, 2011</b>	<b>11-Feb-11</b>	<b>13-Feb-11</b>	<b>Weekend #</b>	<b>1,678.50</b>	<b>220</b>	<b>3.23</b>	<b>3.08</b>	<b>3.1943</b>	<b>1.0098</b>	
Saturday, February 12, 2011	12-Feb-11	12-Feb-11	Same Day	108.7	21	3.16	3.04	3.1377	1.0098	
Sunday, February 13, 2011	13-Feb-11	13-Feb-11	Same Day	146	33	3.17	3.1	3.1198	1.0098	
Monday, February 14, 2011	14-Feb-11	14-Feb-11	Same Day	1,640.30	227	3.25	3.09	3.1624	1.0116	
Tuesday, February 15, 2011	15-Feb-11	15-Feb-11	Same Day	1,281.90	194	3.4	3.25	3.3275	1.0114	
2011	16-Feb-11	16-Feb-11	Same Day	1,647.60	210	3.42	3.3625	3.395	1.0147	
Thursday, February 17, 2011	17-Feb-11	17-Feb-11	Same Day	1,416.30	189	3.43	3.35	3.3975	1.0164	
Friday, February 18, 2011	18-Feb-11	18-Feb-11	Same Day	664.2	97	3.41	3.27	3.3503	1.0173	
Friday, February 18, 2011	18-Feb-11	21-Feb-11	Friday - Monday	1,084.00	153	3.415	3.3	3.3465	1.0173	
Friday, February 18, 2011	19-Feb-11	22-Feb-11	Saturday -	1,101.60	139	3.41	3.3	3.3621	1.0173	
<b>Friday, February 18, 2011</b>	<b>18-Feb-11</b>	<b>21-Feb-11</b>	<b>Weekend #</b>	<b>1,084.00</b>	<b>153</b>	<b>3.42</b>	<b>3.3</b>	<b>3.3465</b>	<b>1.0173</b>	
Saturday, February 19, 2011	19-Feb-11	19-Feb-11	Same Day	141.5	29	3.463	3.27	3.3735	1.0173	
Sunday, February 20, 2011	20-Feb-11	20-Feb-11	Same Day	376.2	58	3.3	3.1	3.1803	1.0173	
Monday, February 21, 2011	21-Feb-11	21-Feb-11	Same Day	526	80	3.235	3.1	3.1744	1.0165	
Tuesday, February 22, 2011	22-Feb-11	22-Feb-11	Same Day	1,209.00	206	3.358	3.255	3.2847	1.0143	
2011	23-Feb-11	23-Feb-11	Same Day	1,400.70	216	3.455	3.38	3.4243	1.0077	
Thursday, February 24, 2011	24-Feb-11	24-Feb-11	Same Day	1,816.40	266	3.56	3.46	3.487	1.0161	
Friday, February 25, 2011	25-Feb-11	25-Feb-11	Same Day	854.6	122	3.48	3.35	3.419	1.0195	
Friday, February 25, 2011	25-Feb-11	27-Feb-11	Friday - Sunday	1,056.30	158	3.425	3.3	3.3549	1.0195	
Friday, February 25, 2011	26-Feb-11	28-Feb-11	Monday	1,136.90	147	3.45	3.3	3.3602	1.0195	
<b>Friday, February 25, 2011</b>	<b>25-Feb-11</b>	<b>27-Feb-11</b>	<b>Weekend #</b>	<b>1,056.30</b>	<b>158</b>	<b>3.43</b>	<b>3.3</b>	<b>3.3549</b>	<b>1.0195</b>	
Saturday, February 26, 2011	26-Feb-11	26-Feb-11	Same Day	146.5	31	3.37	3.3	3.3402	1.0195	
Sunday, February 27, 2011	27-Feb-11	27-Feb-11	Same Day	275.9	59	3.25	3.195	3.2103	1.0195	
Monday, February 28, 2011	28-Feb-11	28-Feb-11	Same Day	1,406.30	220	3.458	3.4	3.43	1.0268	
(1) Total/Weighted Average				34,758.20	4,951	5	3.04	3.4915		
Arithmetic								3.4079		
(2) Total/Weighted Average				29,706.60	4,240	5	3.04	3.5145		
Arithmetic								3.4132		
(3) Total/Weighted Average				32,380.50	4,534	5	3.08	3.5041		
Arithmetic								3.4501		
(4) Total/Weighted Average				38,516.10	5,398	5	3.08	3.4803		
Arithmetic								3.4351		
(5) Total/Weighted Average				41,205.40	5,771	5	3.08	3.4705		
Arithmetic								3.4321		

Table 1 – Sample Same Day Index Table

NGX generates various Price Indices from the trading activity in the current intraday (“Same Day”) and other short-term physical Products at NGX AB-NIT. Trading information from such Products is used to populate the “NGX AB-NIT Same Day Index Table”, which is published by NGX and in the monthly edition of the Canadian Gas Price Reporter “CGPR”.

### *1.1 Index Diversity*

The methodology by which the various Price Indices are established is contained in the summaries in section 1.4 below. The varied array of methodologies used in many of the Price Indices are the result of the varied and diverse set of market participants that utilize them and may also be a result of the gradual changes that the marketplace has made in the way that they enter into Transactions in the spot markets.

### *1.2 Weekend#*

The methodologies in section 1.4 below utilize the concept of the “Weekend#”, which refers to a row contained in the “NGX AB-NIT Same Day Index Table”. Weekend# is a value that is derived from trading on the Friday immediately preceding the weekend in the Product (the default Product is a three day instrument) that represents the daily gas delivery for the current Friday to the following Sunday (ie. A three-day Product that begins on the current Friday).

### *1.3 Month ending on a weekend or Statutory and Other Holidays*

Various Products may be substituted as a suitable replacement for the default Product (“F3”) for the Weekend# during certain holidays in Canada and in the United States or because the month begins or ends on a weekend. Prior to any change that may significantly impact trading in Canada, which would require a change to the default for the Weekend#, NGX will publish a revised methodology regarding how the holiday will be treated with respect to the generation of the Indices.

### *1.4 Methodologies*

#### NGX AB-NIT Same Day Index 1

The *NGX AB-NIT Same Day Index 1* (“Index 1”) is determined by calculating the volume-weighted average of all the rows contained in the “NGX AB-NIT Same Day Index Table”. This includes all rows representing Same Day Product Transactions and rows representing the Weekend#.

#### NGX AB-NIT Same Day Index 1A

The *NGX AB-NIT Same Day Index 1A* (“Index 1A”) is determined by calculating the arithmetic average of the weighted average rows used in Index 1.

#### *NGX AB-NIT Same Day Index 2*

The *NGX AB-NIT Same Day Index 2* (“Index 2”) is determined by calculating the volume-weighted average of the rows representing Same Day Product Transactions contained in the “NGX AB-NIT Same Day Index Table”. This index *excludes* the Weekend# rows.

#### *NGX AB-NIT Same Day Index 2A*

The *NGX AB-NIT Same Day Index 2A* (“Index 2A”) is determined by calculating the arithmetic average of the weighted average rows used in Index 2. In the event that the CGPR does not report the required information to determine the *NGX AB-NIT Same Day Index 2A* hereunder, or the *NGX AB-NIT Same Day Index 2A* is otherwise not determinable, the price will be the price determined by Exchange based on the arithmetic average of the daily weighted average of all same day Physical Transactions with reference to the most comparable trades executed through the *NGX Trading System* at *NGX AB-NIT*.

#### *NGX AB-NIT Same Day Index 3*

The *NGX AB-NIT Same Day Index 3* (“Index 3”) is determined by calculating the volume-weighted average of selected rows contained in the “*NGX AB-NIT Same Day Index Table*”. The selected rows are those that represent Same Day Product Transactions on business days, and the *Weekend#* row once for each weekend.

#### *NGX AB-NIT Same Day Index 3A*

The *NGX AB-NIT Same Day Index 3A* (“Index 3A”) is determined by calculating the arithmetic average of the weighted average rows used in Index 3.

#### *NGX AB-NIT Same Day Index 4*

The *NGX AB-NIT Same Day Index 4* (“Index 4”) is determined by calculating the volume-weighted average of selected rows contained in the “*NGX AB-NIT Same Day Index Table*”. The selected rows are those that represent Same Day Product Transactions on business days, and the *Weekend#* row as a proxy for each day of the weekend. It is important to note that the *Weekend#* is typically counted twice in this calculation, once for Saturday and again for Sunday.

#### *NGX AB-NIT Same Day Index 4A*

The *NGX AB-NIT Same Day Index 4A* (“Index 4A”) is determined by calculating the arithmetic average of the weighted average rows used in Index 4. In the event that CGPR or Exchange does not report the required information to determine the *NGX AB-NIT Same Day Index 4A* hereunder, or the *NGX AB-NIT Same Day Index 4A* is otherwise not determinable, the price will be the price determined by Exchange based on the arithmetic average of:

- A. for each Gas Day (Monday to Friday, inclusive) the daily weighted average for all same day Physical Transactions executed through the *NGX Trading System* at *NGX AB-NIT*; and
- B. the weighted average for *Weekend #* Physical Transactions executed through the *NGX Trading System* as a proxy for each Saturday and Sunday at *NGX AB-NIT*.

### *NGX AB-NIT Same Day Index 5*

The *NGX AB-NIT Same Day Index 5* (“Index 5”) is determined by calculating the volume-weighted average of selected rows contained in the “NGX AB-NIT Same Day Index Table”. The selected rows are those that represent Same Day Product Transactions Monday through Thursday, and the Weekend# row as a proxy for Friday and for each day of the weekend. It is important to note that the Weekend# is typically counted three times in this calculation, once for Friday, once for Saturday and again for Sunday.

### *NGX AB-NIT Same Day Index 5A*

The *NGX AB-NIT Same Day Index 5A* (“Index 5A”) is determined by calculating the arithmetic average of the weighted average rows used in Index 5. In the event that the CGPR or Exchange does not report the required information to determine the NGX AB-NIT Same Day Index 5A hereunder, or the NGX AB-NIT Same Day Index 5A is otherwise not determinable, the price will be the price determined by Exchange based on the arithmetic average of:

- A. for each Gas Day (Monday to Thursday, inclusive) the daily weighted average for all same day Physical Transactions executed through the NGX Trading System at NGX AB-NIT; and
- B. the weighted average for all Weekend # Physical Transactions executed through the NGX Trading System as a proxy for Friday, Saturday or Sunday plus any Canadian statutory holidays that are included in the weekend Physical Transactions at NGX AB-NIT.

### NGX AB-NIT Same Day Index 5A US

The NGX AB-NIT Same Day Index 5A US (“Index 5A US”) is determined by converting the Index 5A to US Dollars/MMBtu using the Bank of Canada Noon Day Rate.

## **2 NGX AB-NIT Month Ahead Indices**

NGX generates three Price Indices from the trading activity in the Product that represents daily gas delivery from the first day of the following month to the last day of the following month (i.e. “Near Month”, “Prompt Month”, or “One-Month Spot”) at NGX AB-NIT.

### *2.1 Index Data Source*

All implied spread Transactions in the underlying Product will be included in the calculation of the Month Ahead Indices however all spread legs generated by the NGX Trading System as a result of time spread Transactions in the underlying Product will not be included in the calculation of the Month Ahead Indices.

### *2.2 Methodologies*

#### NGX AB-NIT Month Ahead Index (7A)

The NGX AB-NIT Month Ahead Index (7A) is determined by calculating the volume-weighted average of all the Transactions during a calendar month in the Product that represents gas delivery for the following calendar month. In the event that CGPR or Exchange does not report the required information to determine the NGX AB-NIT Month

Ahead Index (7A) hereunder, or the NGX AB-NIT Month Ahead Index (7A) is otherwise not determinable, the price will be the price determined by Exchange with reference to the most comparable reported prices in respect of Intra-Alberta gas bought and sold for the entire delivery Month on the TCPL Alberta System based on agreements made during the Month immediately prior to the delivery Month.

#### NGX AB-NIT Month Ahead Index (7A) US

The NGX AB-NIT Month Ahead Index (7A) US is determined by converting the NGX AB-NIT Month Ahead Index (7A) to US Dollars/MMBtu using the Bank of Canada Noon Day Rate as published on the first business day of the calendar month of the NGX AB-NIT Month Ahead Index (7A) US.

#### NGX AB-NIT Bidweek Index

The NGX AB-NIT Bidweek Index is determined by calculating the volume-weighted average of all the Transactions during the last five Canadian business days during a calendar month (“Bid Week”) in the Product that represents gas delivery for the following calendar month.

### *2.3 Statutory and Other Holidays*

Prior to any Canadian statutory holiday, or prior to any U.S. holiday that significantly impacts trading in Canada, NGX publishes a methodology regarding how the holiday will be treated with respect to the generation of the Indices.

## **3 NGX Daily Spot Gas Price Indices**

NGX generates daily spot price indices from the on screen daily trading activity, in the next-day D1 (“Spot Day”) Product on Monday to Thursday and the on screen daily trading activity, in the SA3 (“Weekend”) Product traded on Friday. These Products are the index source Products.

### *3.1 Index Data Source*

For the following Price Indices all of the on screen transactional data that occurs in the index source Products, from market opening until the Product closes for the trading day, will qualify to be used in the calculation of the Index.

- NGX Spectra Station #2 Day Ahead Index (formerly NGX Station #2 Daily Spot Price)
- NGX GTN Malin Day Ahead Index (formerly NGX Malin Daily Spot Gas Price)
- NGX PG&E Citygate Day Ahead Index (formerly NGX PG&E Citygate Daily Spot Price)
- NGX TCPL-Chippawa Day Ahead Index (formerly NGX Chippawa Daily Spot Price)
- NGX Union-Dawn/TCPL-Chippawa Transport Day Ahead Index (formerly NGX Chippawa Transport Daily Spot Price)
- NGX TCPL-Emerson Great Lakes Day Ahead Index (formerly NGX Emerson/Great Lakes Daily Spot Price)
- NGX TCPL-Empress Day Ahead Index (formerly NGX Empress Daily Spot Price)
- NGX AB-NIT/TCPL-Empress Transport Day Ahead Index (formerly NGX Empress Transport Daily Spot Price)
- NGX TCPL-Iroquois Day Ahead Index (formerly NGX Iroquois Daily Spot Price)

- NGX Union-Dawn/TCPL-Iroquois Transport Day Ahead Index (formerly NGX Iroquois Transport Daily Spot Price)
- NGX TCPL-Niagara Day Ahead Index (formerly NGX Niagara Daily Spot Price)
- NGX Union-Dawn/TCPL-Niagara Transport Day Ahead Index (formerly NGX Niagara Transport Daily Spot Price)
- NGX TCPL-St. Clair Day Ahead Index (formerly NGX St. Clair Dawn Daily Spot Price)
- NGX TCPL-St. Clair/Union-Dawn Transport Day Ahead Index (formerly NGX St. Clair Dawn Transport Daily Spot Price)
- NGX Union-Dawn Day Ahead Index (formerly NGX Union Dawn Daily Spot Price)
- NGX Union-Parkway Day Ahead Index (formerly NGX Union Parkway Daily Spot Price)
- NGX Union-Dawn/Parkway Transport Day Ahead Index (formerly NGX Parkway Transport Daily Spot Price)

For the **NGX AB-NIT Day Ahead Index** only the on screen transactional data that occurs in the index source Products, from Market opening until 10:30 am Mountain Time, Monday to Friday, will qualify to be used in the calculation of the Index.

NGX AB-NIT Day Ahead Index US

The NGX Day Ahead Index US ("Index Day Ahead US") is determined by converting the Day Ahead index to US Dollars/MMBtu using the bank of Canada Noon Day Rate on the Physical Gas transaction date.

Location spread Transaction legs are only included in the calculation of Transport Day Ahead Indices, they are not included in the calculation of non-Transport Day Ahead Indices.

### 3.2 Index Diversity

These Price Indices follow the methodology as outlined below, using the NGX Union-Dawn Day Ahead Index Table below as an example.

NGX Union-Dawn Day Ahead Index								
							Price (\$US/	
Trading Date	Clearing Date	Strip Begin Date	Strip End Date	Day Range	Total Quantity Traded (BBtu)	Number of Trades	High	Low
Monday, January 31, 2011	1-Feb	1-Feb-11	1-Feb-11	Tuesday	1,095.90	163	4.885	4.79
Tuesday, February 1, 2011	2-Feb	2-Feb-11	2-Feb-11	Wednesday	1,267.60	172	4.855	4.785
Wednesday, February 2, 2011	3-Feb	3-Feb-11	3-Feb-11	Thursday	1,094.70	152	5.098	4.863
Thursday, February 3, 2011	4-Feb	4-Feb-11	4-Feb-11	Friday	1,199.30	157	5	4.825
Friday, February 4, 2011	Feb-5 - Feb-7	5-Feb-11	7-Feb-11	Saturday - Monday	1,314.90	176	4.835	4.78
<b>Friday, February 4, 2011</b>		<b>5-Feb-11</b>	<b>7-Feb-11</b>	<b>WKD</b>	<b>3,944.70</b>	<b>176</b>	<b>4.835</b>	<b>4.78</b>
Monday, February 7, 2011	8-Feb	8-Feb-11	8-Feb-11	Tuesday	1,248.70	163	4.735	4.665
Tuesday, February 8, 2011	9-Feb	9-Feb-11	9-Feb-11	Wednesday	1,235.20	160	4.65	4.61
Wednesday, February 9, 2011	10-Feb	10-Feb-11	10-Feb-11	Thursday	1,286.90	170	4.535	4.5
Thursday, February 10, 2011	11-Feb	11-Feb-11	11-Feb-11	Friday	1,056.70	138	4.585	4.455
Friday, February 11, 2011	Feb-12 - Feb-14	12-Feb-11	14-Feb-11	Saturday - Monday	888.8	140	4.42	4.353
<b>Friday, February 11, 2011</b>		<b>12-Feb-11</b>	<b>14-Feb-11</b>	<b>WKD</b>	<b>2,666.40</b>	<b>140</b>	<b>4.42</b>	<b>4.353</b>
Monday, February 14, 2011	15-Feb	15-Feb-11	15-Feb-11	Tuesday	1,118.40	149	4.478	4.32
Tuesday, February 15, 2011	16-Feb	16-Feb-11	16-Feb-11	Wednesday	1,070.10	157	4.48	4.4
Wednesday, February 16, 2011	17-Feb	17-Feb-11	17-Feb-11	Thursday	1,114.20	161	4.465	4.395
Thursday, February 17, 2011	18-Feb	18-Feb-11	18-Feb-11	Friday	1,360.10	185	4.425	4.3
Friday, February 18, 2011	Feb-19 - Feb-22	19-Feb-11	22-Feb-11	Saturday - Tuesday	1,110.70	169	4.4	4.33
<b>Friday, February 18, 2011</b>		<b>19-Feb-11</b>	<b>22-Feb-11</b>	<b>WKD</b>	<b>4,442.80</b>	<b>169</b>	<b>4.4</b>	<b>4.33</b>
Tuesday, February 22, 2011	23-Feb	23-Feb-11	23-Feb-11	Wednesday	1,022.00	157	4.445	4.3
Wednesday, February 23, 2011	24-Feb	24-Feb-11	24-Feb-11	Thursday	1,009.60	139	4.37	4.275
Thursday, February 24, 2011	25-Feb	25-Feb-11	25-Feb-11	Friday	797.1	124	4.33	4.285
Friday, February 25, 2011	Feb-26 - Feb-28	26-Feb-11	28-Feb-11	Saturday - Monday	856.3	139	4.408	4.285
<b>Friday, February 25, 2011</b>		<b>26-Feb-11</b>	<b>28-Feb-11</b>	<b>WKD</b>	<b>2,568.90</b>	<b>139</b>	<b>4.408</b>	<b>4.285</b>
February 2011 Totals:					30,599.30	2,971	5.098	4.275

Table 2 – Sample “NGX Union- Dawn Daily Index” Table

### 3.3 WKD

The methodology in section 3.4 below utilizes the concept of the “WKD”, which refers to a row contained in the respective “Union-Dawn Daily Index Table”.

WKD Total Quantity Traded is a value that is derived from qualifying trading, on the day immediately preceding the weekend, in the index source Product (the default product is a three day instrument) multiplied by the number of days represented. This quantity represents the total qualifying quantity for the weekend (the default would be the qualifying quantity for Saturday, Sunday and Monday).

### *3.4 Methodologies*

The daily spot gas price index tables such as the NGX Union-Dawn Day Ahead Index table illustrated above provides a summary of the index source Product qualifying Transactions that comprise the Price Index. A volume-weighted average is calculated for each row.

The monthly total for the daily spot gas price indices are determined by calculating the arithmetic average of the daily Product, weighted average rows (typically traded on Monday to Thursday), plus the weighted average of the WKD row typically traded on Friday.

For Clarification, the row-representing weekend trading activity that occurred on Friday is not counted in the calculation. But the WKD row (representing the daily volume traded on Friday times the number of proxy days) is used in the calculation.

### *3.5 Statutory and Other Holidays*

Prior to any Canadian statutory holiday, or prior to any U.S. holiday that significantly impacts trading in Canada, NGX publishes a methodology regarding how the holiday will be treated with respect to the generation of the Indices. Typically this will entail a substitution of the index source Product that will represent the WKD in the table. Various Products may be substituted as a suitable replacement for the default Product (three day instrument) for the WKD during certain holidays in Canada and in the United States or because the month begins or ends on a weekend.

## **4 NGX AB-NIT Same Day and NGX AB-NIT Yesterday Indices**

NGX generates various Price Indices from the trading activity in the current intraday (Same Day) and yesterday's intraday (Yesterday) Products. Trading information from such Products is used to populate the tables using the same methodology for the following Price Indices:

- NGX AB-NIT Same Day Index
- NGX AB-NIT Yesterday Index

#### 4.1 Index Diversity

These Price Indices follow the methodology as outlined below, using the NGX AB-NIT Index as an example

Natural Gas Exchange						
NGX AB-NIT Yesterday Index						
Current Month Cumulative Data						
Date	Settlement	High	Low	Weighted Average	Volume Per Day	
Feb-01	4.145	4.500	3.910	4.2083	326.6	
Feb-02	3.730	4.500	3.720	3.8748	468.1	
Feb-03	3.573	3.695	3.385	3.5476	333.1	
Feb-04	3.580	3.600	3.358	3.5807	211.8	
Feb-05	3.470	3.520	3.470	3.4959	133.3	
Feb-06	3.633	3.708	3.450	3.5765	214.7	
Feb-07	3.595	3.650	3.590	3.6258	273.6	
Feb-08	3.498	3.550	3.460	3.4942	270.5	
Feb-09	3.420	3.420	3.323	3.3649	470.4	
Feb-10	3.250	3.300	3.240	3.2683	169.4	
Feb-11	3.205	3.253	3.170	3.2047	259.2	
Feb-12	3.090	3.220	3.060	3.1324	112.5	
Feb-13	3.120	3.130	2.970	3.0891	138.0	
Feb-14	3.135	3.215	3.068	3.1424	175.3	
Feb-15	3.350	3.360	3.250	3.3042	245.1	
Feb-16	3.400	3.425	3.365	3.4006	285.2	
Feb-17	3.370	3.425	3.350	3.3988	313.4	
Feb-18	3.300	3.420	3.300	3.3577	252.3	
Feb-19	3.290	3.500	3.275	3.3899	269.8	
Feb-20	3.185	3.300	3.150	3.2341	323.1	
Feb-21	3.220	3.263	3.100	3.1734	282.8	
Feb-22	3.220	3.280	3.120	3.1997	419.0	
Feb-23	3.418	3.460	3.330	3.4156	370.6	
Feb-24	3.490	3.503	3.450	3.4820	304.3	
Feb-25	3.390	3.500	3.380	3.4347	353.7	
Feb-26	3.428	3.430	3.300	3.3516	118.5	
Feb-27	3.205	3.310	3.160	3.1931	246.0	
Feb-28	3.450	3.450	3.338	3.4086	298.4	
Feb-11	3.399	N/A	N/A	3.4333	7,638.7	

Table 3 – Sample “NGX AB-NIT Yesterday Index” Table

## 4.2 Proxy

There is no proxy used in the calculation of these indices, as NGX Trading System is available for trading 365 days a year.

## 4.3 Methodologies

These Price Indices follow the methodology as outlined below, using the NGX AB-NIT Yesterday Index as an example

The NGX AB-NIT Yesterday Index table illustrated above provides a summary of the Transactions that occurred for yesterday's gas day that comprise the NGX AB-NIT Yesterday Index. The table contains one row representing trades in the yesterday's day Product for each day from Monday to Sunday, a volume-weighted average is calculated for each row. The NGX AB-NIT Yesterday Index is determined by calculating the volume-weighted average of the rows representing Yesterday Product Transactions contained in the "NGX AB-NIT Yesterday Index Table". The *NGX AB-NIT Same Day Index* is determined by calculating the arithmetic average of the weighted average rows.

## 4.4 Statutory and Other Holidays

Prior to any Canadian statutory holiday, or prior to any U.S. holiday that significantly impacts trading in Canada, NGX publishes a methodology regarding how the holiday will be treated with respect to the generation of the Indices.

## 5 Crude Oil Indices

NGX generates Price Indices from the trading activity in certain Crude Oil Product(s) in the month prior to the Delivery Period for those Products. These Indices are calculated in two ways:

- A. Monthly Volume Weighted Average Price (1a)- The crude oil indices that have "1a" in their name are calculated as the volume-weighted average of all transactions in the relevant product from 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. The official NOS dates are published by Enbridge Pipeline prior to the start of each calendar year.
- B. Daily Weighted Average Price (1b) – The crude oil indices that have "1b" in their name are calculated as the simple average of the volume-weighted averages for each trading day during the same period.[Index Data Source](#)

For the following Price Indices all of the onscreen NGX transaction data (other than Trades in Error), and all qualifying Shorcan trades in the index-generating Products during the relevant Index Period will qualify to be used in the calculation of the relevant Index.

The index-generating Products are the grades referred to in the name of the relevant Index.

- TMX C5 WTI1a, TMX LSB C5 1b

- Includes differential to WTI on Federated, Fort Sask, Peace, Pembina, Rimbey, and Enbridge (**In-Line-EIL**)\* pipelines at Edmonton
- TMX LSB WTI1a, TMX LSB WTI 1b
  - Includes differential to WTI on Enbridge (**Transfer at Source-ENB**), Westspur and Enbridge (**In-Line-EIL**)\* pipelines at Cromer
- TMX M WTI1a, TMX M WTI 1b
  - Includes differential to WTI on Westspur and Enbridge (**In-Line-EIL**)\* pipelines at Cromer
- TMX SW WTI 1a, TMX SW WTI 1b
  - Includes differential to WTI on Bonnie Glen, Enbridge (**Transfer at Source-ENB**), Federated, Peace, Pembina Rainbow, and Enbridge (**In-Line-EIL**)\* pipelines at Edmonton
- TMX SYN WTI 1a, TMX SYN WTI 1b
  - Includes differential to WTI on Alberta Oilsands, Enbridge (**In-Line-EIL**)\*, and Enbridge (**Transfer at Source-ENB**)\* pipelines at Edmonton
- TMX WCS WTI 1a, TMX WCS WTI 1b
  - Includes differential to WTI on Husky pipeline at Hardisty and in-line on Enbridge pipeline (EIL)

\* **Currently available on Shorcan only**

## 6 NGX Alberta Electricity RRO Indices

The NGX Alberta Electricity RRO Index generates three near month indices from “On Screen” market activity that occurs during the NGX regular trading day.

- NGX Alberta Flat Electricity RRO Index
- NGX Alberta Extended Peak Electricity RRO Index
- NGX Alberta Super Peak Electricity RRO Index

The NGX Alberta Electricity RRO Index is unique in that it incorporates transactional activity as well as bid/offer spreads to determine the index. It was created to ensure a fair representative index price is available, even on a market day when there are no transactions. All implied spread transactions and implied spread bids or offers in the underlying Product will be included in the calculation of the NGX Alberta Electricity RRO Indices however all spread legs generated by the NGX Trading System as a result of time spread Transactions in the underlying Product will not be included in the calculation of the NGX Alberta Electricity RRO Indices.

As of June 17th 2011, two changes will be made to the Baseload and Extended Peak RRO Indices applied to August 2011 index generation and forward. The first change will be the removal of the 100 MW limit to the traded volume, all traded volume will now be included in the index. Secondly, all transactions occurring in the Epcor Power Auctions will be included as well.

### 6.1 Combined Index Generation

The Daily Combined Index Price is made up of a time weighted average of qualifying spreads and a weighted average of on screen trades, which occur on a specific trading day. Each trading day, a daily post price and daily post volume are calculated to a time weighted average

and then combined with the weighted average of NGX Transactions for that day. This result is a weighted average Daily Combined Index Price for that day.

## 6.2 Qualifying Spreads

Only spreads made up of the best bid and best offer and that meet the predetermined criteria will be included when calculating the daily post price and daily post volume. These qualifying spreads must meet the requirements set out in Table 1.0.

Qualifying Spread Requirements

Spread Requirement	Baseload (FLAT)	Extended Peak	Super Peak
Minimum bid/offer Volume	5 MWh	5 MWh	5 MWh
Max Spread Post Volume per Day	25 MWh	25 MWh	25 MWh
Max Spread	\$2.00/MWh	\$5.00/MWh	\$10.00/MWh
Min Minutes per Day	60 Minutes	60 Minutes	60 Minutes
Weighted Average Time	Fraction of hours	Fraction of hours	Fraction of hours
Weighted Average Volume	Lesser of bid/offer	Lesser of bid/offer	Lesser of bid/offer
No Qualifying Spreads	Use Volume of 0 for the day	Use Volume of 0 for the day	Use Volume of 0 for the day

To determine the daily post price, only bid/offer spreads with a minimum volume of 5 MWh will be used. The bid/offer spread must be equal to or less than \$2.00/MWh, \$5.00/MWh or \$10.00/MWh in the Baseload, Extended Peak and Super Peak products respectively, for the spread to qualify. Finally, all the qualifying spreads in the day must have a total duration of 60 minutes for the time weighted average post price to be eligible for inclusion into the index; otherwise a volume of 0 will be used. If there are qualifying spreads in the day in excess of 25 MWh, a maximum of 25 MWh will be used when calculating the weighted average index price.

## 6.3 Qualifying Trades

All on screen trades that occur during a NGX regular trading day are used in the calculation of the Trade Data Weighted average

## 6.4 Calculating the Daily Post Price Using Spreads:

The daily post price is calculated using a time weighted average as follows:

- a) Spread duration in Hours =  $\frac{\text{End Time} - \text{Start Time (sec)}}{60 \text{ min/hr} * 60 \text{ sec/min}}$
- b) Post volume = Spread duration in Hours (see above) \* Min (bid volume, offer volume)
- c) Post price = Midpoint of the bid/offer spread
- d) Time weighted average daily index =  $\frac{\text{SUM (Post volume * Post price)}}{\text{SUM (Post volume)}}$

SUM (Post Volume)

**Examples of Calculating a Spread Daily Post Price (Baseload power market):**

Date	Month	Start Time	End Time	Sprd Dur	Bid Vol	Offer Vol	Best Bid Price	Best Offer Price	Spread	Post Vol	Post Price	Daily Index
Day 1	June 06	8:45:00	10:50:00	2.08 *	25	25	67.50	69.00	1.50	52.08 **	68.25 ***	25 MWh @ \$68.25 ****
Day 2	June 06	10:44:00	11:44:00	1.00	5	10	67.00	68.50	1.50	5.00*	67.75	10.83 MWh @ \$67.08 ***
Day 2	June 06	14:50:00	16:00:00	1.17	5	5	65.50	67.50	2.00	5.83*	66.50	
Day 3	June 06	11:35:30	11:45:45	0.17	5 *	15	66.00	67.00	1.00	0.85	66.50	12.65 MWh @ \$66.50 **
Day 3	June 06	11:45:45	12:56:45	1.18	10 *	15	66.00	67.00	1.00	11.80	66.50	
Day 4	June 06	9:06:30	9:10:30	0.067*	10	15	66.10	66.45	0.35	0.67	66.275	0 Volume used to calculate the daily index
Day 4	June 06	10:15:45	10:37:00	0.35*	15	10	66.25	66.50	0.25	3.54	66.375	
Day 4	June 06	11:02:10	11:21:20	0.32*	15	5	66.35	66.65	0.30	1.60	66.50	
Day 4	June 06	11:34:10	11:56:40	0.38	5	10	65.00	67.15	2.15 **			

Day 1:

\* Spread Duration = 2 hrs and 5 minutes duration = 125 minutes/60 minutes/hour = 2.08333

\*\* Post Volume = Min (bid volume, offer volume) \* Spread Duration = 25 MW \* 2.08333 = 52.08

\*\*\* Post Price = Midpoint (bid price, offer price) = \$68.25

\*\*\*\* The post volume for the day is 52.08, which is greater than the maximum allowed, 25 MWh. Therefore, use the maximum of 25 MWh for post volume.

Day 2:

The Day 2 post price volume is the sum of the volumes of the qualifying spreads as follows:

Spread Duration = 1.00 hr + 1.17 hr = 2.17 hr

\* Post Volume = 5.00 MWh + 5.83 MWh = 10.83 MWh

\*\* Daily Index post price is the weighted average of the Post Volume and Post Price

$$= [(5.00 \text{ MWh} * \$67.75) + (5.83 \text{ MWh} * \$66.50)] / 10.83 \text{ MWh} = \$67.08$$

\*\*\* Since the post volume is less than 25 MWh, the index will use the actual value, 10.83 MWh.

Day 3:

\* The spread volume has changed, however the price has not changed. Each volume is counted as a separate spread.

\*\* Daily Index is the weighted average of the Post Volume and Post Price

$$= [(0.85 \text{ MWh} * \$66.50) + (11.80 \text{ MWh} * \$66.50)] / (0.85 \text{ MWh} + 11.80 \text{ MWh}) = \$66.50$$

Day 4:

\* Spread Duration = 0.067 hr + 0.35 hr + 0.30 hr = 0.717 hr, which is less than the required 1 hour, so the Daily post volume will be 0.00 MWh.

\*\* This spread is greater than \$2.00 and thus does not qualify. Only spreads less than or equal to \$2.00/MWh for Baseload, less than or equal to \$5.00/MWh for Extended Peak and less than or equal to \$10.00/MWh for Super Peak contracts will be included as a qualifying spread.

### 6.5 Calculating the Daily Traded Price Using Trades:

The daily traded price is a weighted average of trades, calculated as follows:

$$\text{Weighted average} = \frac{\text{SUM (Traded volume * Traded price)}}{\text{SUM (Traded Volume)}}$$

### 6.6 Calculating the Daily Combined Index Price Using Spreads and Trades:

If both trades and qualifying spreads occur on a given day, the daily combined index price becomes a weighted average of the traded price weighted average and the spread time weighted average as follows:

$$\text{Daily Price} = \frac{(\text{Spread Post Price} * \text{Spread Post Volume}) + (\text{Traded Volume} * \text{Traded Price})}{\text{Spread Post Volume} + \text{Trade Volume}}$$

### 6.7 Example of Calculating a Daily Combined Index Price:

Given the following spread and trade data, the daily index is calculated as a weighed average.

Spread Post Price: \$68.25  
Spread Post Volume: 13.83 MWh

Trade Post Price: \$67.75  
Trade Volume: 100 MWh

$$\text{Daily Price: } \frac{(\$68.25 * 13.83 \text{ MWh}) + (\$67.75 * 100 \text{ MWh})}{100 \text{ MWh} + 13.83 \text{ MWh}} = \$67.81$$

$$\text{Daily Volume: } 100 \text{ MWh} + 13.83 \text{ MWh} = 113.83 \text{ MWh}$$

### 6.8 Monthly Index

A weighted average of all Daily Combined Index prices in the interval is then used to calculate the monthly index. Therefore the monthly index can be made up of a combination of qualifying bid/offer spreads and on screen trades.

### 6.9 Monthly Index Interval

The monthly index will be established using market activity (trades and spreads) starting on the 45<sup>th</sup> calendar day prior to each month, and ending on the 6<sup>th</sup> trading day prior to each month for which the index is being set.

For example, the Aug 2006 monthly index will be set based on the weighed average of the posted spreads and traded prices starting on June 17<sup>th</sup>, 2006 and ending on July 21<sup>st</sup>, 2006, inclusively.

### 6.10 Monthly index calculation

The monthly index is calculated using a weighted average as follows:

$$\text{Weighted average monthly index} = \frac{\text{SUM (Daily Index Volume} * \text{Daily Index Price)}}{\text{SUM (Daily Index Volume)}}$$

## SUM (Daily Index Volume)

### 6.11 *Monthly Index Generation Days*

The monthly index will not be generated on Saturday, Sunday, NERC Holidays or statutory holidays in the Province of Alberta. It will be generated every business day, Monday to Friday unless a NERC Holiday or statutory holiday in the Province of Alberta falls on an index generation day.

### 6.12 *DEFINITIONS*

"Alberta Flat" means the periods on each calendar day as follows:

In the case of a Sunday on and from which time is to be one hour in advance of mountain standard time (first Sunday in March), the twenty-three (23) hour period starting at 0000 MPT and ending at 2400 MPT (HE0100 to HE2300 inclusive);

In the case of a Sunday on and from which time is no longer to be one hour in advance of mountain standard time (last Sunday in November), the twenty-five (25) hour period starting at 0000 MPT and ending at 2400 MPT (HE0100 to HE2500 inclusive); and

For all other calendar days, the twenty-four (24) hour period starting at 0000 MPT and ending at 2400 MPT (HE0100 to HE2400 inclusive);

"Alberta Extended Peak" means the sixteen (16) hour periods for each day starting at 0700 MPT and ending at 2300 MPT (HE 0800 to HE 2300 inclusive);

"Alberta Super Peak" means the six (6) hour periods for each day starting at 1700 MPT and ending at 2300 MPT (HE1700 to HE2200 inclusive);

"Bank of Canada Noon Day Rate" means the currency exchange rate between Canadian and US currency as published by the Bank of Canada;

"NERC Holidays" means additional Off-Peak Days (aka "Holidays") as determined by the North American Electric Reliability Council.

## APPENDIX B: PUBLISHED INDICES DEFINITIONS

The following indices (“Published Indices”) are not owned or generated by NGX. NGX has the right to use these Published Indices for the purpose of settlement of Products traded on the Exchange.

- a. Available U.S. posting options for individual company 40 degree reference price for WTI crude oil with a differential to \$U.S. per barrel:

“Argus Average” is the arithmetic average of the daily mid point quote by Argus for the prompt delivery month trading for that specific grade and location

In the event the mid point of the daily quote is shown as \$U.S.0.005 then the value will be rounded up to the nearest cent.

The abbreviations for the posters as follows:

ConPhil or CP - ConocoPhillips

ARG - Petroleum Argus Americas Crude Report

- b. Available U.S. WTI Index options are:

CMA settlement prices for the applicable delivery months in \$U.S. per barrel, plus/minus a differential in \$U.S. per barrel as specified when entering the Physical Oil Transaction; and

DNS settlement price is the closing daily settlement price for the U.S. Provider as at the date of the Physical Oil Transaction, plus/minus a differential in \$U.S. per barrel as specified when entering the Physical Oil Transaction provided that: (a) when Physical Oil Transactions are for the next most immediate delivery month, the DNS will be the closing daily settlement price for the U.S. Provider prompt contract as at the date of the Physical Oil Transaction; and (b) for Physical Oil Transactions entered into for delivery during any other future month excluding the next most immediate delivery month, the DNS will be the U.S. Provider settlement price for the U.S. Provider contract month that matches the applicable Delivery Period.

Such WTI Index Options are indicated in Table I of the CPA by “CMA” or “DNS” in the “System Price Abbr.” column of such table.

All Physical Oil Transactions entered into on a DNS price basis during a Trading Day when the U.S. provider is closed (for any reason) will be settled using the corresponding U.S. Provider values on the most immediate prior trading day of the U.S. Provider.

- c. Available CAD posting options are customized for the applicable Crude Type and include both monthly averages of individual postings and averages of groups of postings in Canadian Dollars per cubic metre, plus/minus a differential in \$U.S. per barrel. The abbreviations for the posters as follows:

BP or B - BP Canada Energy Trading Company Ltd.

Encana or E	-	Encana Crude Oil Marketing
Cenovus or C	-	Cenovus Energy Inc.
Flint or F	-	Flint Hills Resources Limited
Husky or H	-	Husky Oil Limited
IOL or I	-	Imperial Oil Limited
PCI or I	-	Petro-Canada Products
Shell or Sh	-	Shell Canada Limited
Sun or Su	-	Suncor Inc.

- d. Available Canadian WTI Index options refer to CMA settlement prices for the applicable delivery months in \$U.S. per barrel, plus/minus a differential in \$U.S. per barrel. Such WTI Index options are indicated in Table I in the CPA by "WTI" in the "Systems Price Abbr." column of such table.
- e. "Chicago Bid week Index Price" means for any Calculation Period:
- i. the index price in U.S. dollars per MMBtu for the applicable Month as published in NGI in the table "(Applicable Month) Bid week" corresponding to "Midwest-Chicago Citygate - Bid Week Avg"; or
  - ii. in the event that NGI does not report the required information to determine the Chicago Bid week Month Index Price, or such price is otherwise not available, the price will be determined by Exchange with reference to the most comparable reported prices in respect of gas bought and sold for the entire delivery Month at the Chicago Citygate;
- f. "Chicago Daily Index Price" means for any Calculation Period:
- i. the arithmetic average price in US dollars per MMBtu for the applicable flow day(s) as published in Gas Daily in the table "Daily Price Survey (\$/MMBtu)" corresponding to "Citygates - Chicago Citygates - Midpoint"; or
  - ii. in the event that Gas Daily does not report the required information to determine the Henry Daily Index Price, or such price is otherwise not determinable, the price will be determined by Exchange with reference to the most comparable reported prices in respect of gas bought and sold at the Chicago Citygate Market Center;
- g. "CIG Rockies Daily Index Price" for any Calculation Period means:
- i. the arithmetic average price in U.S. dollars per MMBtu for the applicable flow day(s) as published in Gas Daily in the table "Daily Price Survey (\$/MMBtu)" corresponding to "Rockies, CIG, Rocky Mountains - Mid-point"; or

- ii. in the event that Gas Daily does not report the required information to determine the CIG Rockies Daily Index price, or if the CIG Rockies Daily Index Price is otherwise not determinable, the price will be determined by Exchange with reference to the most comparable reported price in respect of gas bought and sold at the CIG, Rocky Mountains market center;
- h. "CIG Rockies Spot Month Index Price" for any Calculation Period means:
- i. the index price in U.S. dollars per MMBtu for the applicable Month as published in "Inside FERC's Gas Market Report" in the table "Prices of Spot Gas Delivered to Pipelines (per MMBtu)" corresponding to "Colorado Interstate Gas Co., Rocky Mountains - Index"; or
  - ii. in the event that Inside FERC does not report the required information to determine CIG Rockies Spot Month Index Price hereunder, or the CIG Rockies Spot Month Index Price is otherwise not determinable, the price will be the price determined by Exchange with reference to the most comparable reported prices in respect of gas bought and sold at the CIG, Rocky Mountains market center;
- i. "EP Permian Daily Index Price" for any Calculation Period means:
- i. the arithmetic average price in U.S. dollars per MMBtu for the applicable flow day(s) as published in Gas Daily in the table "Daily Price Survey (\$/MMBtu)" corresponding to "Permian Basin Area - El Paso, Permian Basin- Mid-point"; or
  - ii. in the event that Gas Daily does not report the required information to determine the EP Permian Daily Index price, or if the EP Perm Daily Index Price is otherwise not determinable, the price will be determined by Exchange with reference to the most comparable reported price in respect of gas bought and sold at the El Paso, Permian Basin market center;
- j. "EP Permian Spot Month Index Price" for any Calculation Period means:
- i. the index price in U.S. dollars per MMBtu for the applicable Month as published in "Inside FERC's Gas Market Report" in the table "Prices of Spot Gas Delivered to Pipelines (per MMBtu)" corresponding to "El Paso Natural Gas Co., Permian Basis - Index"; or
  - ii. in the event that Inside FERC does not report the required information to determine the EP Permian Spot Month Index Price hereunder, or the EP Permian Spot Month Index Price is otherwise not determinable, the price will be the price determined by Exchange with reference to the most comparable reported prices in respect of gas bought and sold at the El Paso, Permian Basin market center;
- k. "EP SJ Daily Index Price" for any Calculation Period means:
- i. the arithmetic average price in U.S. dollars per MMBtu for the applicable flow day(s) as published in Gas Daily in the table "Daily Price Survey (\$/MMBtu)" corresponding to "New Mexico - San Juan Basin, El Paso, San Juan Basin - Mid-point"; or

- ii. in the event that Gas Daily does not report the required information to determine the EP SJ Daily Index price, of if the EP SJ Daily Index Price is otherwise not determinable, the price will be determined by Exchange with reference to the most comparable reported price in respect of gas bought and sold at the El Paso, San Juan Basin market center;
- I. "EP SJ Spot Month Index Price" for any Calculation Period means:
- i. the index price in U.S. dollars per MMBtu for the applicable Month as published in "Inside FERC's Gas Market Report" in the table "Prices of Spot Gas Delivered to Pipelines (per MMBtu)" corresponding to "El Paso Natural Gas Co., San Juan Basin - Index"; or
  - ii. in the event that Inside FERC does not report the required information to determine the EP SJ Spot Month Index Price hereunder, or the EP SJ Spot Month Index Price is otherwise not determinable, the price will be the price determined by Exchange with reference to the most comparable reported prices in respect of gas bought and sold at the El Paso, San Juan Basin market center;
- i. "Henry Daily Index Price" means for any Calculation Period:
- i. the arithmetic average price in US dollars per MMBtu for the applicable flow day(s) as published in Gas Daily in the table "Daily Price Survey" corresponding to "Louisiana Onshore South - Henry Hub: Midpoint"; or
  - ii. in the event that Gas Daily does not report the required information to determine the Henry Daily Index Price, or such price is otherwise not determinable, the price will be determined by Exchange with reference to the most comparable reported prices in respect of gas bought and sold at the Henry Hub;
- j. "Henry Futures Settlement Price" means:
- i. the settlement price on the last trading day of a monthly Henry futures contract which corresponds to the applicable Month under a Swap Transaction or applicable delivery Month under a Physical Transaction expressed in US\$ per MMBTU (to four decimal points) as reported in Gas Daily in the table entitled "Futures NYMEX at Henry Hub" under the column called "Settlement", or
  - ii. in the event that Gas Daily does not report a Futures NYMEX at Henry Hub settlement price, Exchange will determine the Henry Futures Settlement Price based on the most comparable reported prices for the applicable Month under a Swap Transaction or applicable delivery Month under a Physical Transaction;
- k. "Houston Ship Channel Daily Index Price" for any Calculation Period means:
- i. the arithmetic average price in US dollars per MMBtu for the applicable flow days as published in Gas Daily in the table "Daily Price Survey" corresponding to "East – Houston – Katy, Houston Ship Channel"; or
  - ii. in the event that Gas Daily does not report the required information to determine the Houston Ship Channel Daily Index Price hereunder, or the Houston Ship Channel Daily Index Price is otherwise not determinable by Exchange with

reference to the most comparable reported prices in respect or gas bought and sold at the Houston Ship Channel Hub;

- I. "Houston Ship Channel Spot Month Index Price" for any Calculation Period means:
  - i. the arithmetic average price in US dollars per MMBtu for the applicable flow days as published in INSIDE FERC Houston Ship Channel; or
  - ii. in the event that INSIDE FERC Houston Ship Channel does not report the required information to determine the Houston Ship Channel Spot Month Index Price hereunder, or the Houston Ship Channel Spot Month Index Price is otherwise not determinable by Exchange with reference to the most comparable reported prices in respect or gas bought and sold at the Houston Ship Channel Hub;
  
- m. "Katy Daily Index Price" for any Calculation Period means:
  - i. the arithmetic average price in US dollars per MMBtu for the applicable flow days as published in Gas Daily in the table "Daily Price Survey" corresponding to "East – Houston – Katy, Katy"; or
  - ii. in the event that Gas Daily does not report the required information to determine the Katy Daily Index Price hereunder, or the Katy Daily Index Price is otherwise not determinable by Exchange with reference to the most comparable reported prices in respect or gas bought and sold at the Katy Hub;
  
- n. "Katy Spot Month Index Price" for any Calculation Period means:
  - i. the arithmetic average price in US dollars per MMBtu for the applicable flow days as published in INSIDE FERC Katy; or
  - ii. in the event that INSIDE FERC Katy does not report the required information to determine the Katy Spot Month Index Price hereunder, or the Katy Spot Month Index Price is otherwise not determinable by Exchange with reference to the most comparable reported prices in respect or gas bought and sold at the Katy Hub;
  
- o. "Malin Daily Index Price" for any Calculation Period means:
  - i. the arithmetic average price in US dollars per MMBtu for the applicable flow days as published in Gas Daily in the table "Daily Price Survey" corresponding to "Others - PG&E, Malin - Midpoint"; or
  - ii. in the event that Gas Daily does not report the required information to determine the Malin Daily Index Price hereunder, or the Malin Daily Index Price is otherwise not determinable by Exchange with reference to the most comparable reported prices in respect or gas bought and sold at the Malin Hub.
  
- p. "Malin Bid week Index Price" for any Calculation Period means:

- i. the index price in U.S. dollars per MMBtu for the applicable Month as published in NGI in the table entitled "(Applicable Month) Bid week" corresponding to "California - Malin - avg."; or
  - ii. in the event that NGI does not report the required information to determine the Malin Bid week Index Price hereunder, or the Malin Bid week Index Price is otherwise not determinable, the price will be the price determined by Exchange with reference to the most comparable reported prices in respect of gas bought and sold at the Malin, Oregon Market Center;
- q. "MichCon Daily Index Price" means for any Calculation Period:
  - i. the arithmetic average price in US dollars per MMBTU for the applicable flow day(s) as published in Gas Daily in the table "Daily Price Survey (\$MMBtu)" corresponding to "Others - MichCon Citygate Midpoint"; or
  - ii. in the event that Gas Daily does not report the required information to determine the MichCon Daily Index Price, or such price is otherwise not determinable, the price will be determined by Exchange with reference to the most comparable reported prices in respect of gas bought and sold at the MichCon Citygate Market Center;
- r. "MichCon Spot Month Index Price" for any Calculation Period means:
  - i. the index price in U.S. dollars per MMBtu for the applicable Month as published in "Inside FERC's Gas Market Report" in the table "Market Center Spot-Gas Prices (per MMBtu)" corresponding to "Upper Midwest - Southern Michigan Citygate Index"; or
  - ii. in the event that Inside FERC does not report the required information to determine the MichCon Spot Month Index Price hereunder, or the MichCon Spot Month Index Price is otherwise not determinable, the price will be the price determined by Exchange with reference to the most comparable reported prices in respect of gas bought and sold at the MichCon Market Center;
- s. "PG&E Citygate Bid week Index Price" means for any Calculation Period:
  - i. the index price in U.S. dollars per MMBtu for the applicable Month as published in NGI in the table "(Applicable Month) Bid week" corresponding to "California - PG&E Citygate - Avg"; or
  - ii. in the event that NGI does not report the required information to determine the PG&E Citygate Bid week Index Price, or such price is otherwise not available, the price will be determined by Exchange with reference to the most comparable reported prices in respect of gas bought and sold for the entire delivery Month at the PG&E Citygate Market Center;
- t. "PG&E Citygate Daily Index Price" means for any Calculation Period:
  - i. the arithmetic average price in US dollars per MMBtu for the applicable flow day(s) as published in Gas Daily in the table "Daily Price Survey (\$MMBtu)" corresponding to " PG&E Citygate - PG&E Citygate Midpoint"; or

- ii. in the event that Gas Daily does not report the required information to determine the Daily Index Price, or such price is otherwise not determinable, the price will be determined by Exchange with reference to the most comparable reported prices in respect of gas bought and sold at the PG&E Citygate Market Center;
- u. "Rocky Mountains Daily Index Price" for any calculation period means:
  - i. the arithmetic average price in U.S. dollars per MMBtu for the applicable flow day(s) as published in Gas Daily in the table "Daily Price Survey (\$/MMBtu)" corresponding to "Rockies - Kern River, Opal Plant - Mid-point"; or
  - ii. in the event that Gas Daily does not report the required information to determine the Rockies Daily Index price, or if the Rockies Daily Index Price is otherwise not determinable, the price will be determined by Exchange with reference to the most comparable reported price in respect of gas bought and sold at the Rockies market center;
- v. "Rocky Mountains Spot Month Index Price" for any Calculation Period means:
  - i. the index price in U.S. dollars per MMBtu for the applicable Month as published in "Inside FERC's Gas Market Report" in the table "Prices of Spot Gas Delivered to Pipelines (per MMBtu)" corresponding to "Northwest Pipeline Corp., Rocky Mountains - Index"; or
  - ii. in the event that Inside FERC does not report the required information to determine the Rockies Spot Month Index Price hereunder, or the Rockies Spot Month Index Price is otherwise not determinable, the price will be the price determined by Exchange with reference to the most comparable reported prices in respect of gas bought and sold at the Rockies market center;
- w. "Socal Bid week Index Price" for any Calculation Period means:
  - i. index price in U.S. dollars per MMBtu for the applicable Month as published in NGI in the table "(applicable Month) Bid week" corresponding to "California - Southern Border, Socal"; or
  - ii. in the event that Inside FERC does not report the required information to determine the Socal Bid week Index Price, or the Socal Bid week Index Price is otherwise not determinable, the price will be the price determined by Exchange with reference to the most comparable reported prices in respect of gas bought and sold at the Socal Market Center;
- x. "Socal Daily Index Price" for any Calculation Period means:
  - i. the arithmetic average price in U.S. dollars per MMBtu for the applicable flow day or flow days as published in Gas Daily in the table "Daily Price Survey (\$/MMBtu)" corresponding to "Others - Socal Gas Midpoint"; or
  - ii. in the event that Gas Daily does not report the required information to determine the Socal Daily Index Price, or such price is otherwise not determinable, the price

will be determined by Exchange with reference to the most comparable reported prices in respect of gas bought and sold at the Social Market Center;

- y. "Sumas Daily Index Price" for any Calculation Period means:
  - i. the arithmetic average price in U.S. dollars per MMBtu for the applicable flow day or flow days as published in Gas Daily in the table "Daily Price Survey (\$/MMBtu)" corresponding to "Canadian Gas - Northwest Can. bdr (Sumas) Midpoint"; or
  - ii. in the event that Gas Daily does not report the required information to determine the Sumas Daily Index Price, or such price is otherwise not determinable, the price will be determined by Exchange with reference to the most comparable reported prices in respect of gas bought and sold at the Sumas Market Center;
- z. "Sumas Spot Month Index Price" for any Calculation Period means:
  - i. the index price in U.S. dollars per MMBtu for the applicable Month as published in "Inside FERC's Gas Market Report" in the table "Prices of Spot Gas Delivered to Pipelines (per MMBtu)" corresponding to "Northwest Pipeline Corp., Canadian Border"; or
  - ii. in the event that Inside FERC does not report the required information to determine the Sumas Spot Month Index Price hereunder, or the Sumas Spot Month Index Price is otherwise not determinable, the price will be the price determined by Exchange with reference to the most comparable reported prices in respect of gas bought and sold at the Sumas market center;
- aa. "Waha Daily Index Price" for any Calculation Period means:
  - i. the arithmetic average price in US dollars per MMBtu for the applicable flow days as published in Gas Daily in the table "Daily Price Survey" corresponding to Permian Basin Area, Waha"; or
  - ii. in the event that Gas Daily does not report the required information to determine the Waha Daily Index Price hereunder, or the Waha Daily Index Price is otherwise not determinable by Exchange with reference to the most comparable reported prices in respect or gas bought and sold at the Waha Hub;
- bb. "Waha Spot Month Index Price" for any Calculation Period means:
  - i. the arithmetic average price in US dollars per MMBtu for the applicable flow days as published in INSIDE FERC Katy; or
  - ii. in the event that INSIDE FERC Katy does not report the required information to determine the Waha Spot Month Index Price hereunder, or the Waha Spot Month Index Price is otherwise not determinable by Exchange with reference to the most comparable reported prices in respect or gas bought and sold at the Waha Hub;