

# Argus Canadian NGL Forum

Calgary

22 June 2010



London, Houston, Washington, Jersey City, Portland, Calgary, Santiago, Bogotá, Johannesburg, Dubai, Singapore, Tokyo, Beijing, Sydney, Moscow, Astana, Kiev and Berlin

# Why Calgary? Why now?

Changes in NGL market are part of opportunity in Canada:

- Lower regional natural gas output, lower spot NGL liquidity in Alberta – more difficult to discern price signals
- Southern Lights impacts on CRW pool, specifications
- Increased sources of Canadian NGLs change the price relationships with crude and natural gas
- Some posted prices withdrawn

Calgary is key to Argus global strategy to be a comprehensive, independent, global source of energy commodity information.

# Argus Media offices



# Argus NGL Americas



Daily Americas NGL prices and market commentary

Issue 10Q-119

Prices effective: Thursday 17 June 2010

## Spot Market Trade Ranges

Mont Belvieu		\$/USG			
		Low	High	Average	MTD Avg
E/P Mix	Wet	46.250	46.750	46.500	48.635
	Jun	46.125	46.625	46.375	48.438
	Jul	46.250	46.750	46.500	48.308
Ethane Non-LDH	Wet	52.500	53.000	52.750	55.957
	Jun	51.500	53.750	52.625	55.760
	Jul	52.500	53.000	52.750	55.582
Propane LDH	Wet	101.625	102.125	101.875	106.913
	Jun	101.500	101.750	101.625	106.659
	Jul	101.625	102.125	101.875	106.938
Propane Non-LDH	Wet	102.000	102.500	102.250	106.971
	Jun	101.000	103.000	102.000	106.721
	Jul	102.000	102.500	102.250	106.971
Normal Butane LDH	Wet	136.250	136.750	136.500	137.163
	Jun	135.750	136.250	136.000	136.663
	Jul	135.750	136.250	136.000	135.356
Normal Butane Non-LDH	Wet	143.250	143.750	143.500	145.125
	Jun	142.000	144.000	143.000	144.620
	Jul	142.750	143.250	143.000	143.303
Isobutane Non-LDH	Wet	157.625	158.125	157.875	157.904
	Jun	156.750	158.000	157.375	157.418
	Jul	157.125	157.625	157.375	156.096
Natural Gasoline Non-LDH	Wet	175.500	176.000	175.750	170.702
	Jun	175.000	175.500	175.250	170.240
	Jul	173.500	174.000	173.750	169.096

Conway		\$/USG			
		Low	High	Average	MTD Avg
E/P Mix	Wet	28.750	29.250	29.000	30.202
	Jun	28.000	29.500	28.750	29.885
	Jul	28.500	29.000	28.750	29.885
Propane	Wet	93.500	94.000	93.750	99.582
	Jun	93.250	94.000	93.625	99.692
	Jul	93.500	94.000	93.750	100.240
Normal Butane	Wet	128.000	128.500	128.250	128.038
	Jun	127.750	128.250	128.000	127.769
	Jul	127.750	128.250	128.000	127.769
Isobutane	Wet	149.750	150.250	150.000	144.702
	Jun	149.500	150.000	149.750	144.452
	Jul	149.500	150.000	149.750	144.442
Natural Gasoline	Wet	168.750	169.250	169.000	163.817
	Jun	167.500	170.000	168.750	163.471
	Jul	168.250	168.750	168.500	163.317
Rail Natural Gasoline	Jun	168.500	169.000	168.750	163.471

Spot Market prices reflect the low and high of deals done throughout the trading day.

## Overview

US NGLs fell in a quiet session. Propane fell sharply with crude amid lackluster buying interest. "It fell off a cliff," a trader said. Brokers observed a slight flattening of propane's curve in the outer months stemming largely from June declines. Ethane sank in brisk trading.

Butane fell with crude in a thin market. Natural gasoline rose in illiquid trade, with little outer-month interest reported.

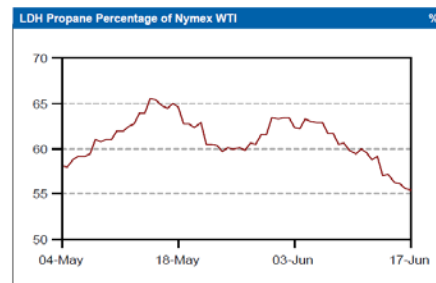
The July contract for light, sweet crude fell 88¢/bl to \$76.79/bl in trading on the Nymex. Natural gas futures rose 18.4¢ to \$5.162/mmbtu. RboB gasoline contracts rose 1.88¢ to \$2.164/USG.

## Mont Belvieu Light NGLs

Light NGLs fell steeply. Propane declined with crude. Ethane fell in light trading. E/P mix saw scant activity.

E/P mix opened lower, and by mid-morning was offered at 46.75¢/USG. A 20,000 bl wet volume closed at 46.25¢/USG. E/P mix for June delivery was last discussed at 45/45.5¢/USG.

Ethane opened lower, with a 10,000 bl volume and a 15,000 bl volume traded at 53.75¢/USG, and fell. A 10,000 bl volume and a 15,000 bl volume later sold for 53.25¢/USG. A 15,000 bl volume closed at 52.75¢/USG, and a 10,000 bl and a 15,000 bl volume both closed at 52.25¢/USG. Before midday a 10,000 bl volume sold for 52.125¢/USG. By noon prompt-month product was discussed at 50.5/52.5¢/USG. Two 10,000 bl volumes closed at 51.5¢/USG and 51.75¢/USG, and a 15,000 bl deal traded at 51.625¢/USG. A June/July spread traded, pricing July at a 0.125¢ premium. Ethane for June delivery was last discussed at 51.25/51.75¢/USG.



# Agenda

## Pat Whalen – North American NGL trends

- Impacts of declining Canadian natural gas production
- Infrastructure plans for getting NGLs from US shale gas to fractionation centres
- Canadian infrastructure projects underway
- Latin American/Caribbean supply/demand and exports to Kitimat

## Maggie King – Pricing options for Canadian NGL markets

- Multiple sources of NGLs mean multiple cost/price signals
- Many ways currently used to price NGLs in Canada
- How Argus attempts to capture all of the liquidity in the market
- Reflecting the market as it actually trades

# NGL market update

Pat Whalen

Editor, Argus NGL Americas



London, Houston, Washington, Jersey City, Portland, Calgary, Santiago, Bogotá, Johannesburg, Dubai, Singapore, Tokyo, Beijing, Sydney, Moscow, Astana, Kiev and Berlin

# Presentation highlights

- US price environment
- Western Canada's declining natural gas/NGLs production and exports.
- Marcellus proposals that will supply Sarnia's NGL requirements
- Southern Lights pipeline USG diluent options
- New or recent NGL projects in Canada and the US
- Latin American and Caribbean overview

# Prices

- NGL prices appear weaker for 1H 2010
- Propane's percentage of WTI is 54.8%
- Normal Butane's percentage of WTI is 78.0%



# Price pressure

- Increased natural gas production in shales and the Rockies contributing to a potential “gas glut”
- Natural gas and WTI disconnect
- “Lightening” of the NGL barrel

# Ethane impact

- Ethane demand from US petchems approximately 820,000-850,000 b/d
- Ethylene exports are 10% - 20% of US ethylene production
- If ethylene exports interrupted ethane demand falls by 20,000 - 40,000 b/d

# Alberta conventional gas 2009

- Conventional natural gas production 113.9bn m<sup>3</sup> down 9% vs 2008
- New drilling that began in 2009 replaced only 54% of conventional production
- Conventional natural gas reserves declined 3.9% in 2009

# Alberta unconventional natural gas supply - shale

## Production

2000 – 0.005bn m<sup>3</sup>

2009 – 0.081bn m<sup>3</sup>

## Connections

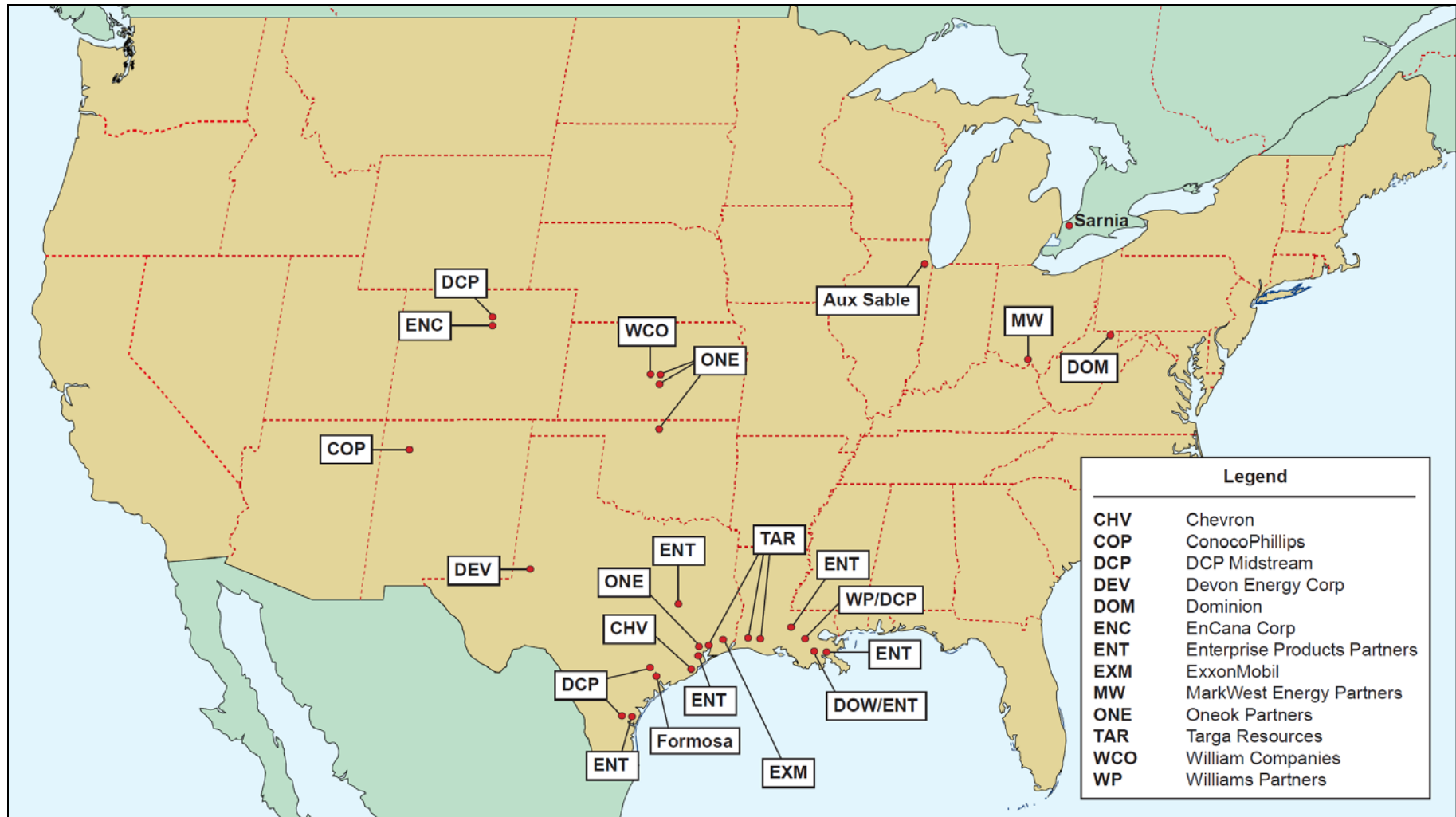
2000 – 7

2009 – 250

# Alberta 2009 NGLs

- NGL production 33.4mn m<sup>3</sup> down 4.6% versus 2008
- NGL extractable reserves decreased 3.9% versus 2008 standing at ethane - 117mn m<sup>3</sup>, propane – 66.1mn m<sup>3</sup>, butane – 36.7mn m<sup>3</sup>, pentane plus – 51.6mn m<sup>3</sup>

# Major US fractionators



# Liquids-rich shale regions

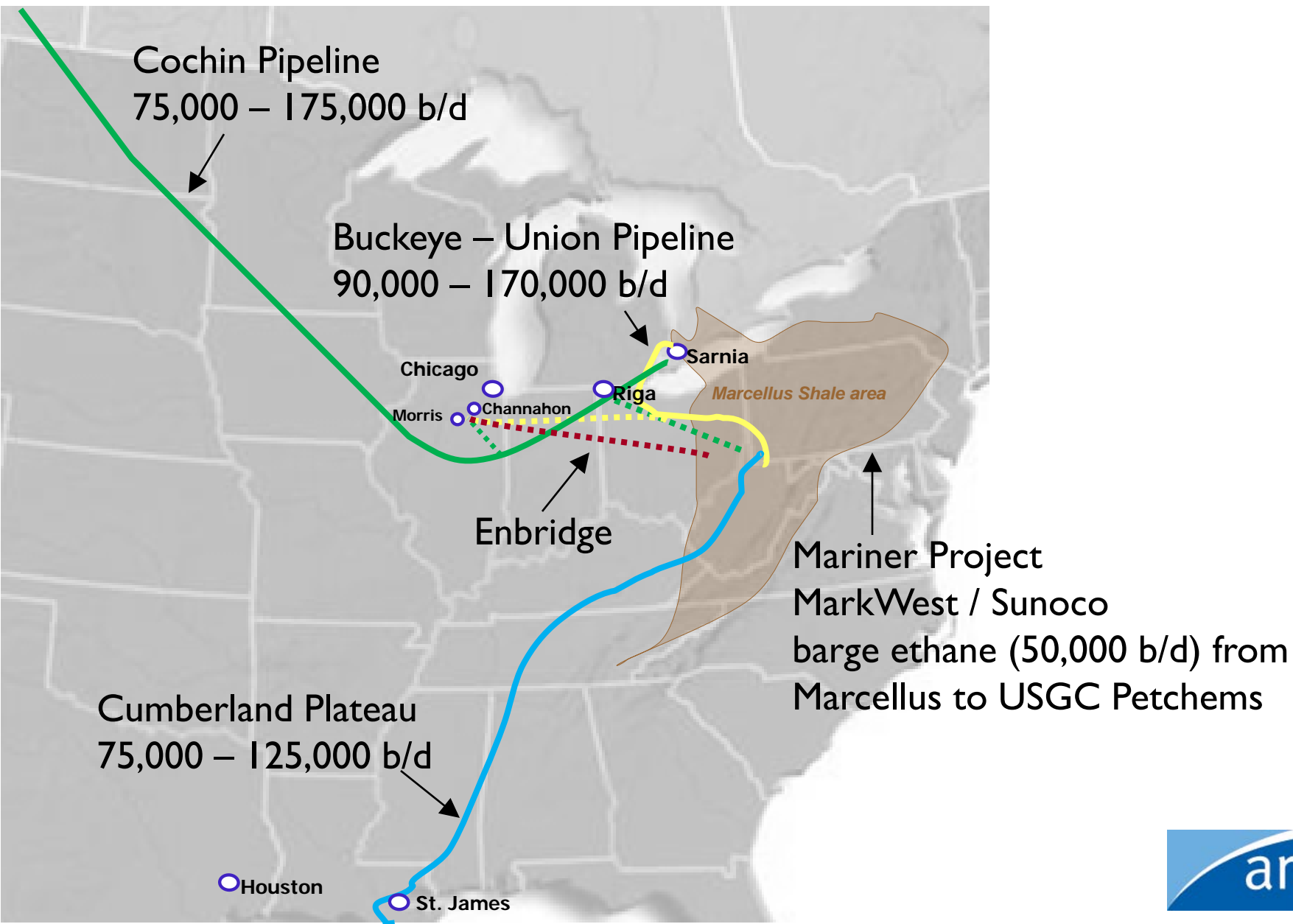


# Marcellus Shale Proposals

- New pipelines and barge proposals
- Potential destinations for NGLs
- Aux Sable



# Marcellus shale proposed transportation projects

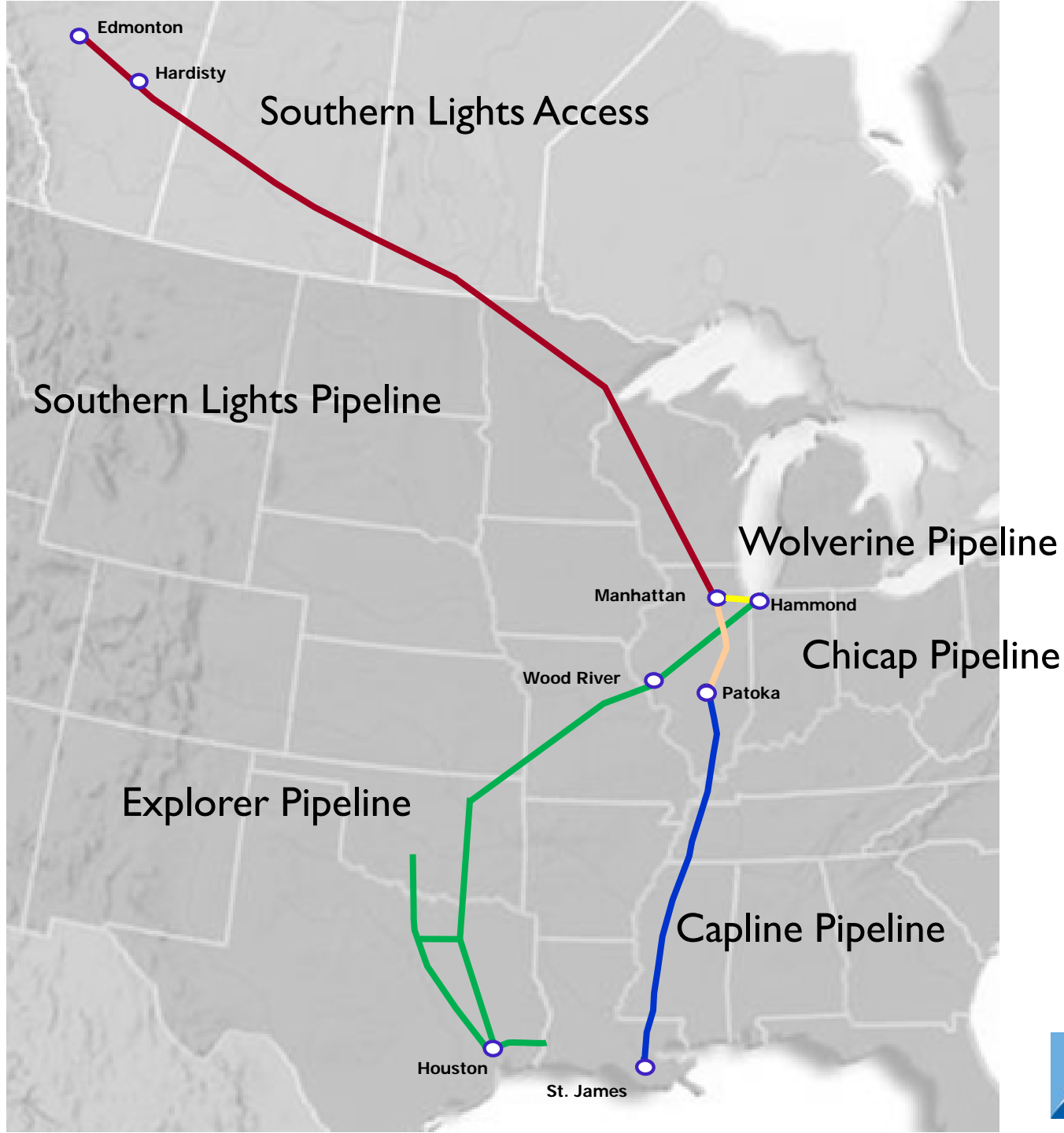


# Aux Sable

- Right to all NGLs from Alliance Pipeline
- Fractionation capacity – 87,000 b/d (with “minor” modifications could go over 100,000 b/d)
- Currently, unspecified excess capacity
- BP purchases 100% of Alliance NGL production from existing fractionator
- Marcellus production would go to BP
- Building another fractionator being considered.

# Southern Lights USG connections

- LDH Origin – Domestic Supply
- St. James Origin – Foreign/Domestic Supply



# New or recent NGL projects

- Canada
- Midwest
- Mt Belvieu
- Other US Areas

# New or recent NGL projects

## Canada

- Williams – Pipeline Ft. McMurray to Redwater, AB fractionator and storage (45,000 – 125,000 b/d) – 2012
- Williams – Redwater, AB – 500,000 bl feed cavern - Q2 2010
- Williams – Redwater, AB – Butane/Butylene Splitter – Q3 2010
- Keyera – Ft. Saskatchewan four storage caverns Total storage after completion approx. 12mn bl – Q4 2010

# New or recent NGL projects

## Canada Continued

- Provident – Purchased Dow storage at Corunna, ON - 5.0mn bl Hydrocarbons, 7.1mn bl Brine – March 2010
- Enbridge – Northern Gateway - 193,000 b/d condensate, 525,000 b/d crude - NEB ruling Q3 2012

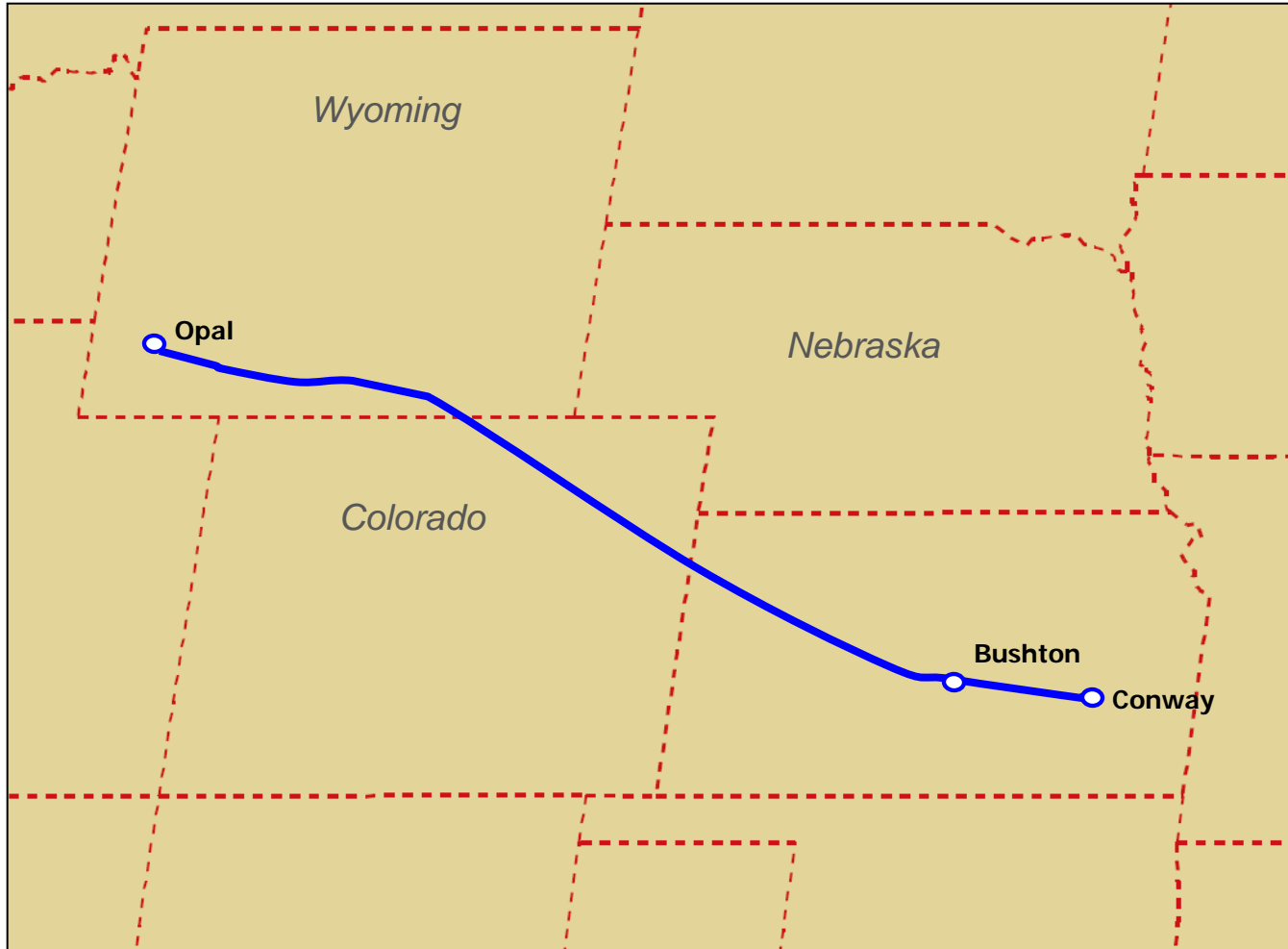
# New or recent NGL projects

## Midwest

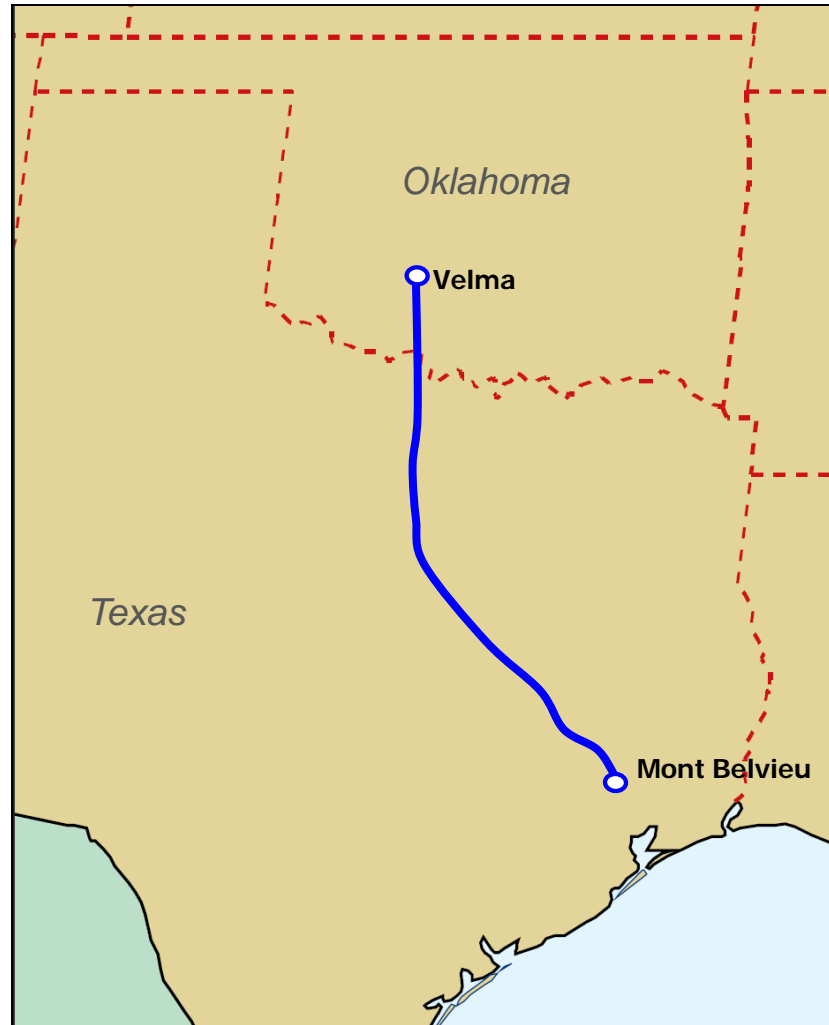
- Overland Pass Pipeline – Opal, Wyoming to Bushton/Conway, Kansas (110,000 – 225,000 b/d)
- Arbuckle Pipeline – Velma, Oklahoma to Mt. Belvieu, Texas (160,000 – 210,000 b/d)



# Overland Pass pipeline (110,000 – 225,000 b/d)



# Arbuckle pipeline (160,000 – 210,000 b/d)



# New or recent NGL projects

## Mont Belvieu

- Enterprise – New 75,000 b/d fractionator Mt Belvieu – Jan 2011. Also investigating market interest in another fractionator.
- Targa – 78,000 b/d Cedar Bayou expansion – Q2 2011

# New or recent NGL projects

## Marcellus Areas

- MarkWest – Increase fractionation capacity at Houston, Pennsylvania to 60,000 b/d – Q4 2011
- Dominion – 32,000 b/d fractionator in north-central West Virginia
- Inergy – Finger Lakes, NY – 5mn bl salt cavern conversion for propane – 2011

# New or recent NGL projects

## Eagle Ford Area

- Enterprise – Shoup facility in Nueces County Texas increase fractionator to 77,000 b/d – Q2 2010
- Enterprise – Armstrong facility in DeWitt County Texas increase fractionator to 22,000 b/d – Q4 2010
- Copano Energy – Restart of 22,000 b/d fractionator near Houston – April 2010

# Latin American LPG importers and exporters

- Exporters - Argentina, Trinidad, Venezuela, Peru, Colombia, Chile, Bolivia
- Importers – Brazil, Chile, Ecuador, Mexico, Paraguay, Central American nations, Caribbean countries except Trinidad, U.S. Virgin Islands, Netherland Antilles

# Latin American / Caribbean LPG supply, demand and net import / export (2008)

(000 Tonnes)	Supply	Demand	Net imp / exp
Mexico	6,365	9,055	-2,690
South America	16,200	16,282	-82
Central America	36	941	-905
Caribbean	1,263	1,695	-432

# Latin American / Caribbean natural gasoline exports

- Peru's Camisea - Exports 3-4 cargoes (300,000 bl each) of high quality natural gasoline per month.
- Argentina's natural gasoline goes mainly to Brazil via MEGA, but 10,555 tonnes/mo Trader owned
- Trinidad - 12,000 b/d Trader controlled
- Venezuela – tends to go to the US but infrastructure/political issues have made volumes difficult to track.



# Conclusions

- Western Canada's exports to the US are declining as Midwest NGL production rises
- Marcellus will provide a large portion of Sarnia's LPG requirements
- Canadian markets will be well supplied with diluent from several sources, mainly in the US
- Increased wet natural gas production will give the petchems reasonable priced feedstock

Thank you!



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# Argus Canadian NGL Methodology

Maggie King

Reporter, Argus NGL Americas



London, Houston, Washington, Jersey City, Portland, Calgary, Santiago, Bogotá, Johannesburg, Dubai, Singapore, Tokyo, Beijing, Sydney, Moscow, Astana, Kiev and Berlin

# What we assess

## Edmonton

- Propane
- Butane
- Condensate

## Sarnia

- Propane
- Butane

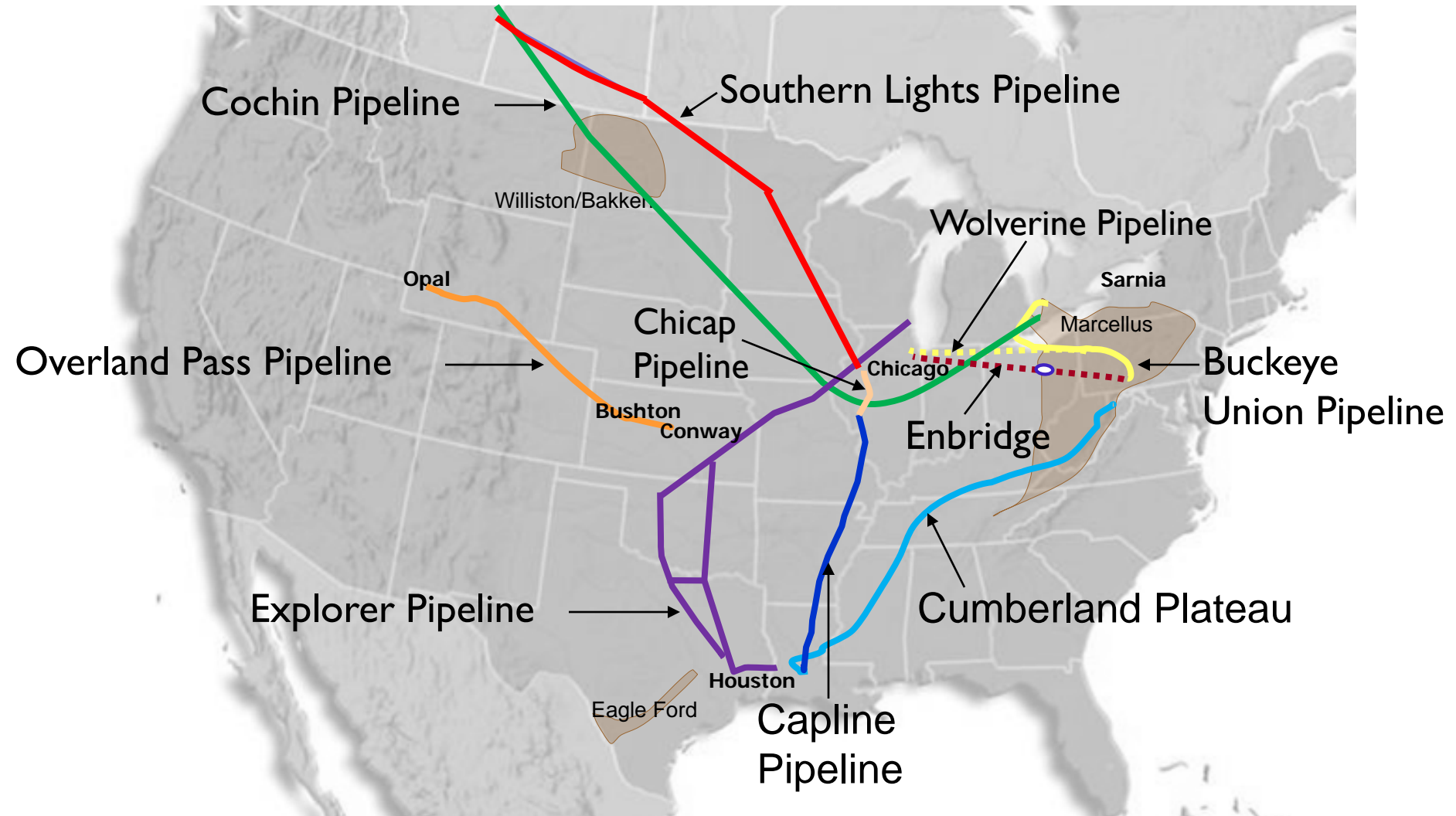
## Conway Rail

- Natural gasoline

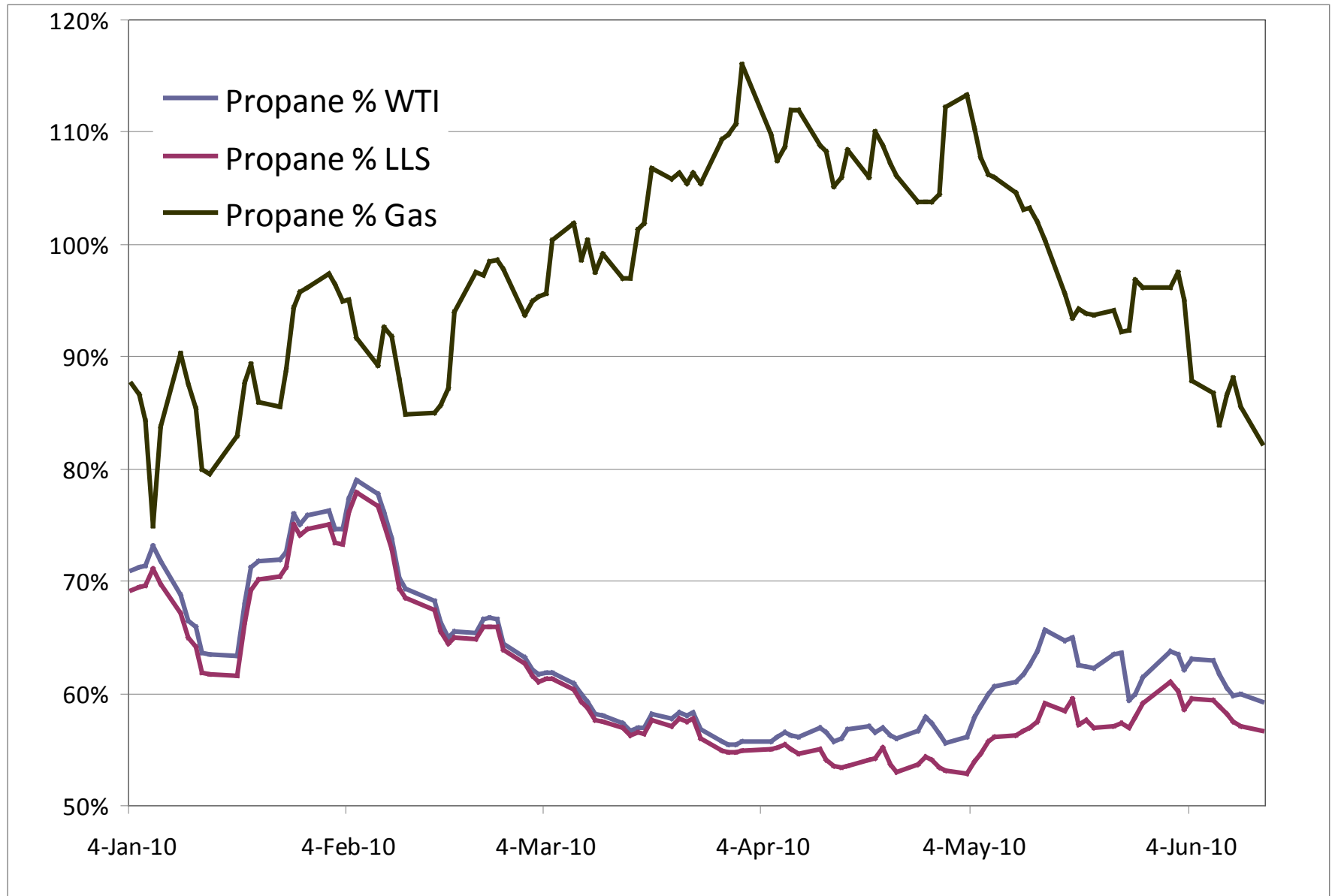
# Outline

- Price environment
- Methodology
- Basis for Methodology
- Argus price history

# Pricing the market



# NGL price moving independently



# How to value the NGLs?

Theoretical NGL value factors:

equivalent value of gas extracted

cost of the extraction process

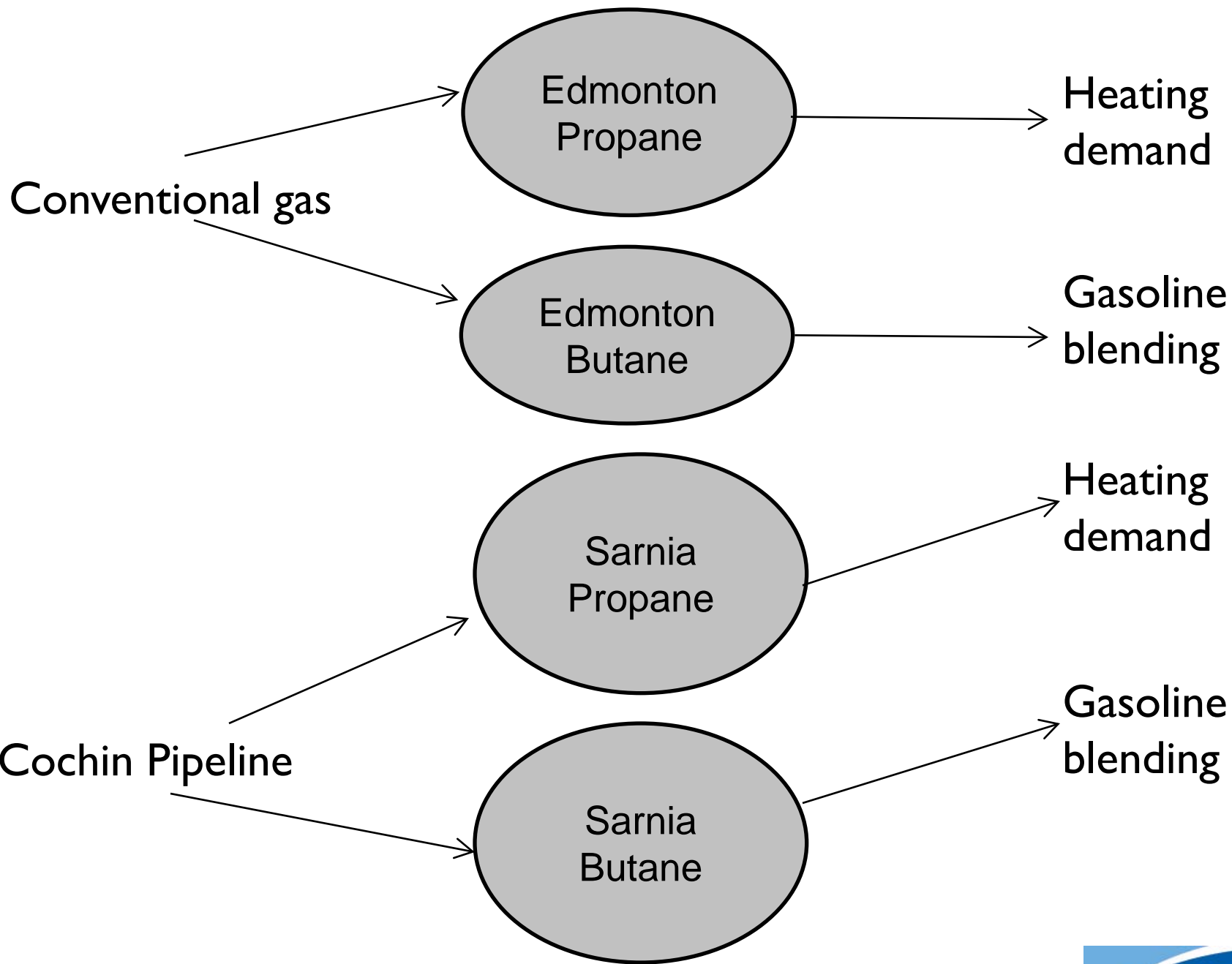
NGL transport cost

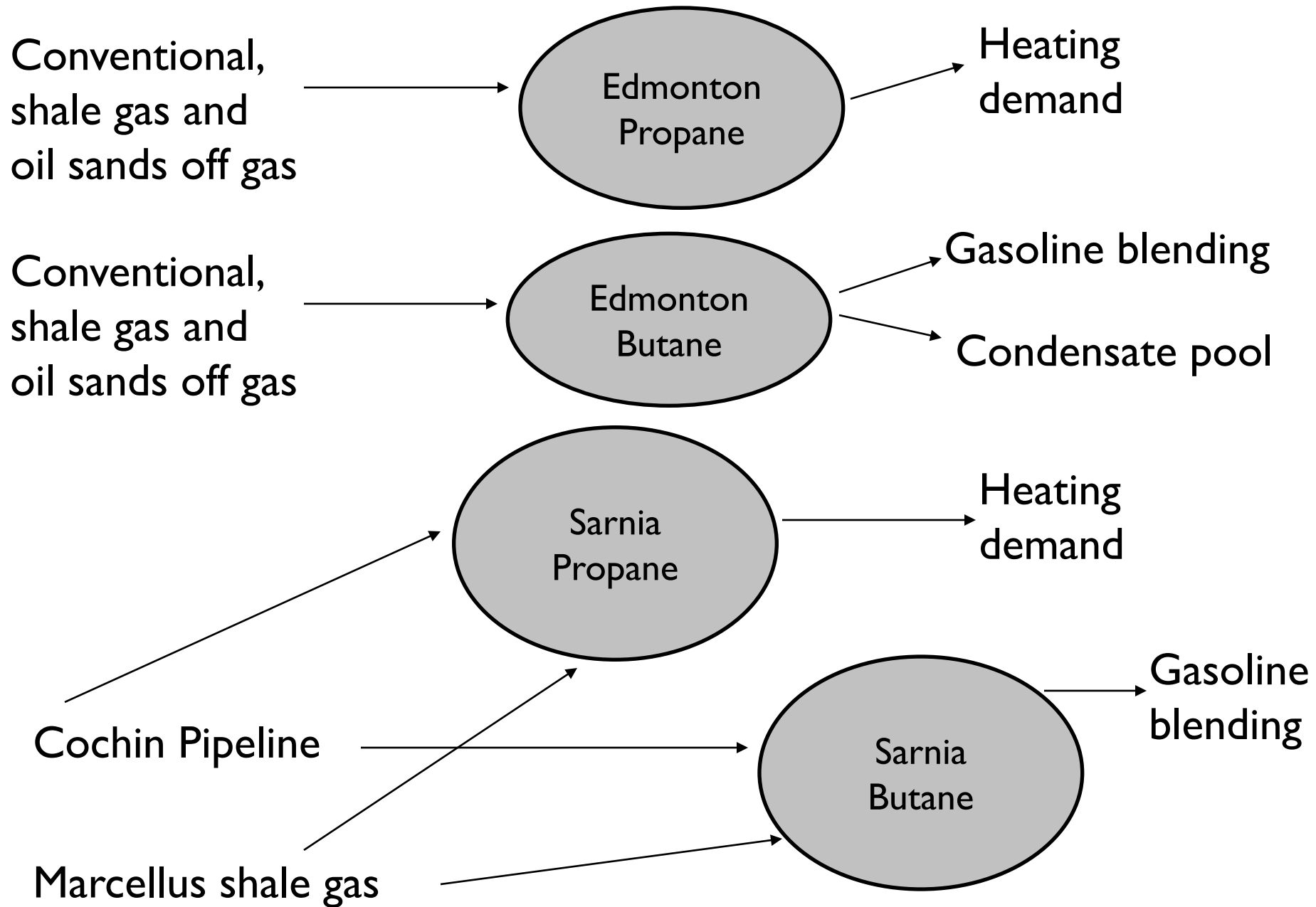
+ fractionation cost

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= intrinsic value



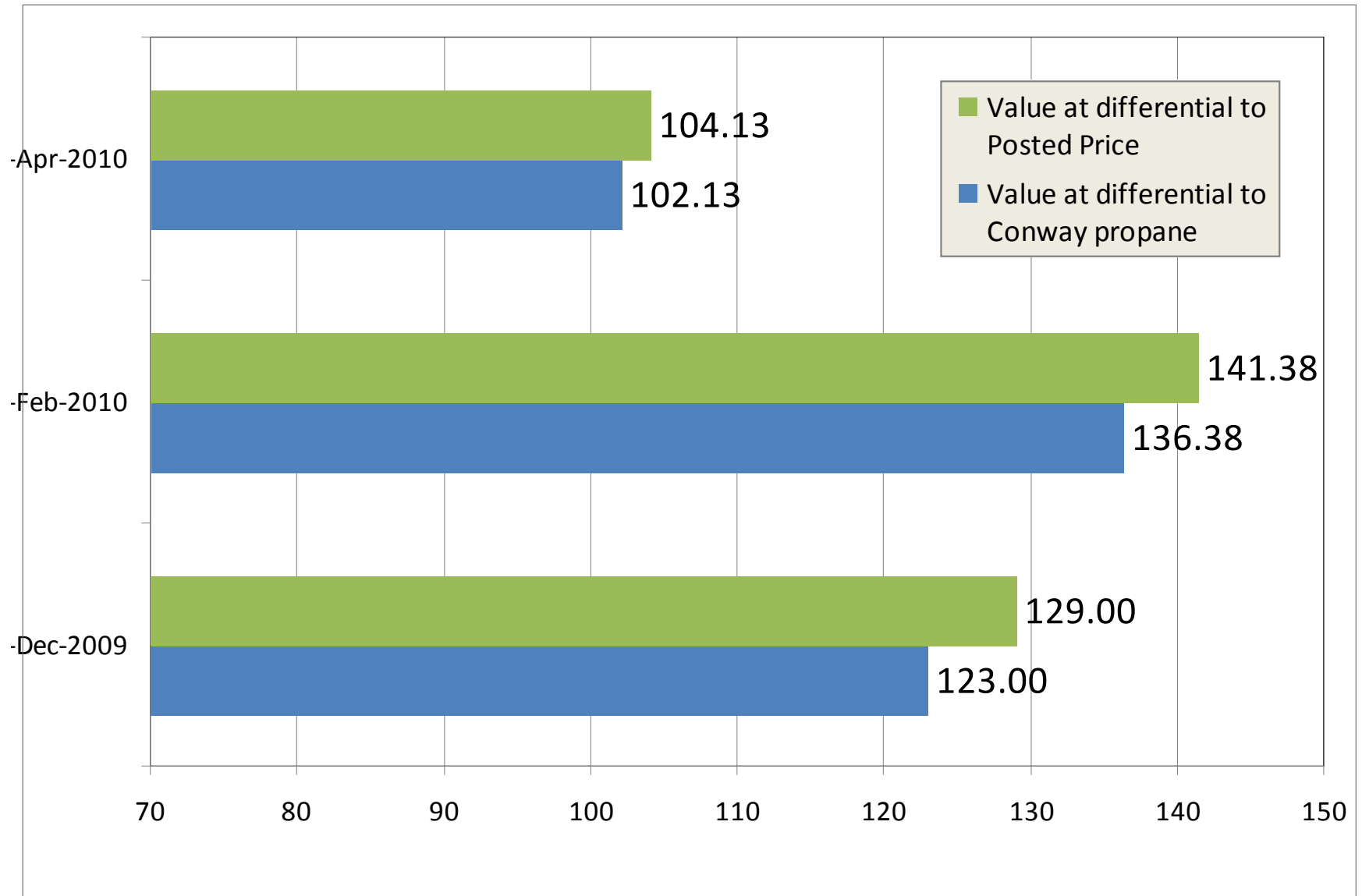




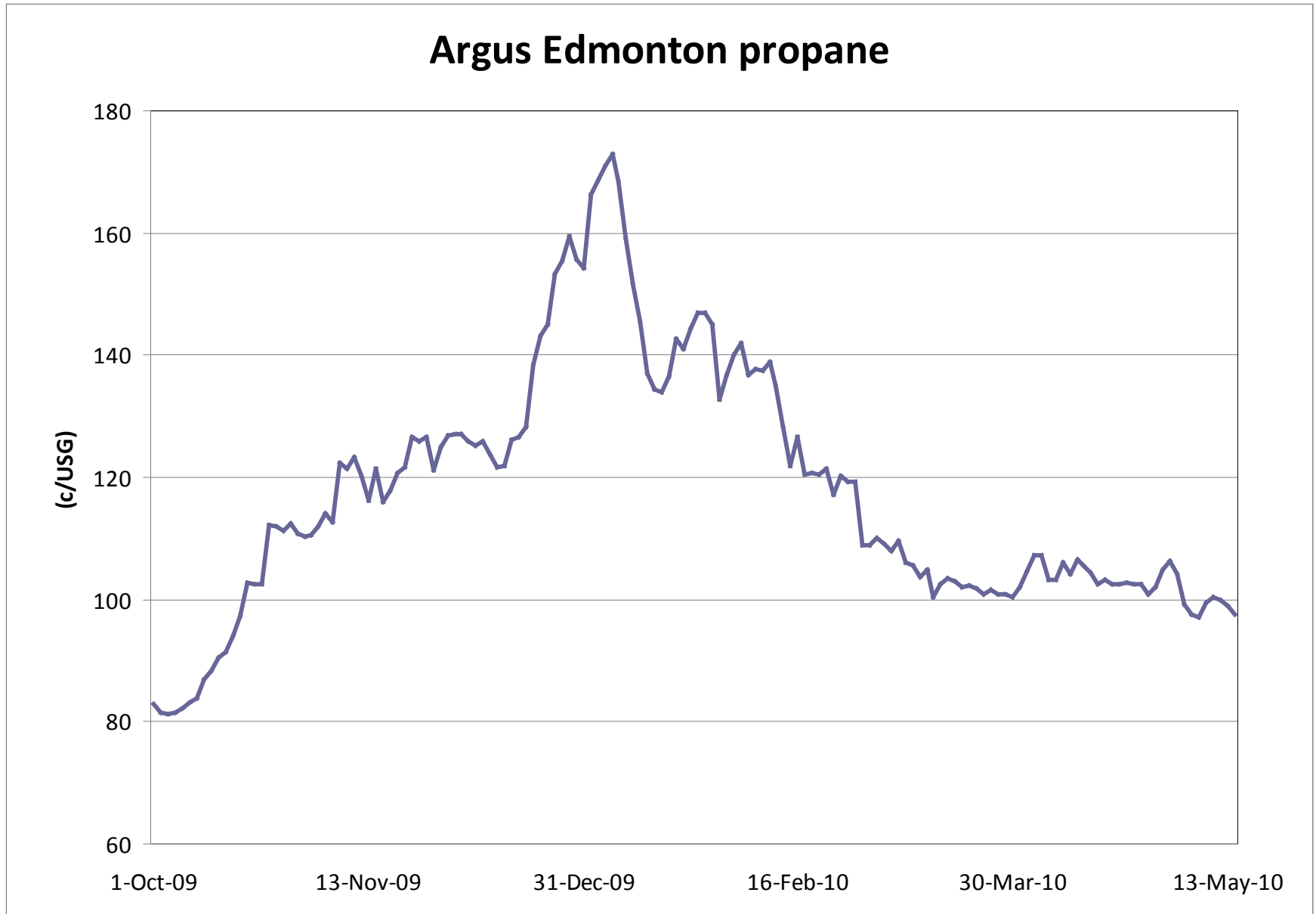
# Pricing options, Edmonton propane

- Posted price
- Posted price + premium
- Differential to Conway
- Percentage of WTI crude price
- Percentage of natural gas price
- Negotiated outright price

# Deals done, Edmonton propane, select dates



# Argus price, Edmonton propane



# What's included in Argus Edmonton propane price?

Deals, bid / offer

- Posted price + premium
- Differential to Conway propane
- Negotiation at an outright price
- Straddle plant negotiation – transportation cost

# Argus Edmonton propane price

Posted price + premium

$$= \text{Pp. avg}(120\text{¢/USG}) + 19\text{¢/USG}$$

Differential to Conway

$$= \text{Conway } (150\text{¢/USG}) - 10\text{¢/USG}$$

Argus Edmonton propane price

$$= 139/140\text{¢/USG}$$

# A structured approach

- Verify bona fide bids and offers
- Compare to similar grades of product
- Compare to the same product in other markets
- Analyze the channel of trade throughout the day

The same valuation parameters a trader would use to assess a market before placing a bid or offer.



# Edmonton propane and butane specifications

- Assessments reflect trade completed in a forward month contract for delivery anytime during the current month.
- Refers to terminals, storage facilities, and company postings at or near Edmonton or Fort Saskatchewan.
- Trade volume: 500 bl minimum

# Edmonton propane and butane specifications continued

- Propane
  - 90pc propane minimum
  - 5pc propylene maximum
  - 2.5pc butanes maximum.
- Field Grade Butane
  - 65pc normal butane
  - 35pc isobutane

# Sarnia propane and butane specifications

- Assessments reflect trade completed in a forward month contract for delivery anytime during the current month.
- Refers to terminals, storage facilities, and company postings at or near Sarnia, Ontario.
- Trade volume: 500 bl minimum

# Sarnia propane and butane specifications continued

- Propane
  - 90pc propane minimum
  - 5pc propylene maximum
  - 2.5pc butanes maximum
- Butane
  - 93pc normal butane minimum
  - 7pc isobutane and lighter minimum
  - 2pc pentanes and heavier maximum

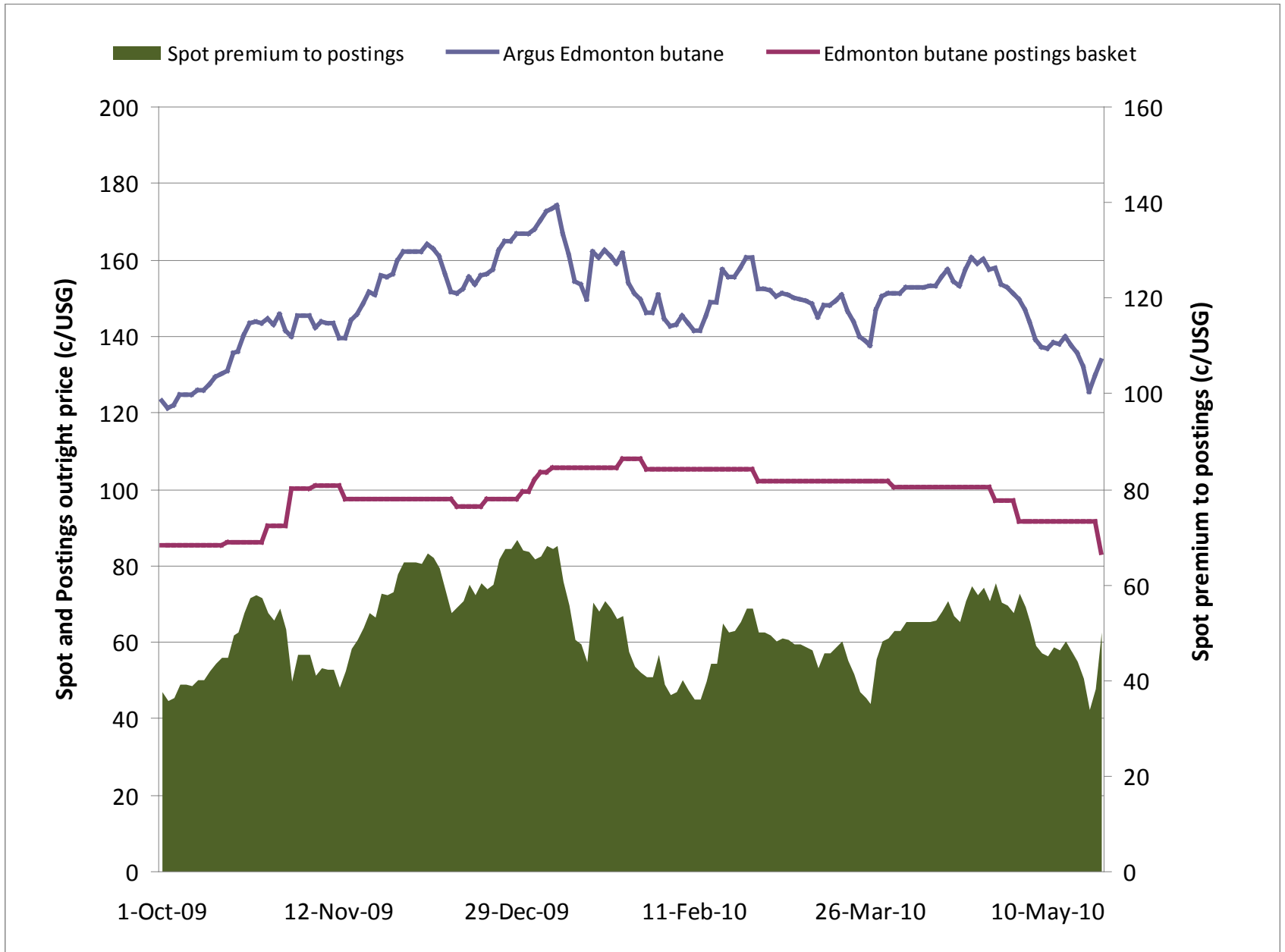
# Edmonton condensate specifications

- Assessments reflect trade completed in a contract for delivery one month forward.
- FOB Edmonton
- Trade volume: 1,000 b/d per injection minimum
- Condensate: 54 API, 0.5pc sulphur

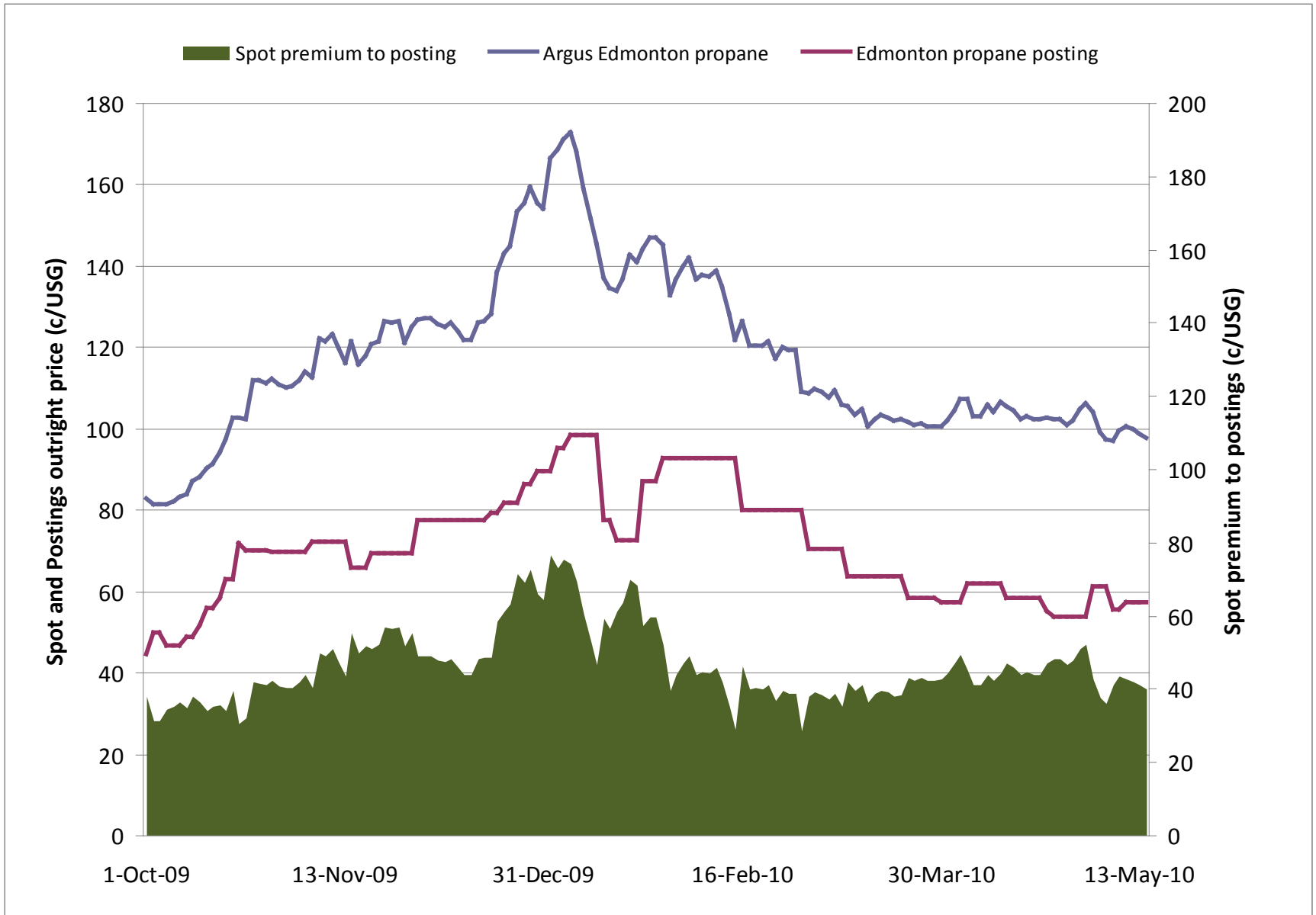
# Benefits of Argus prices

- Argus success pricing illiquid markets.
- Company wide internal compliance program ensures prices are confirmed and accurate.
- Daily market prices widens scope of Argus' knowledge of market fundamentals
- Argus price is independent assessment
- Index decreases risk on term and spot deals

# Argus Edmonton butane vs. butane posted price basket

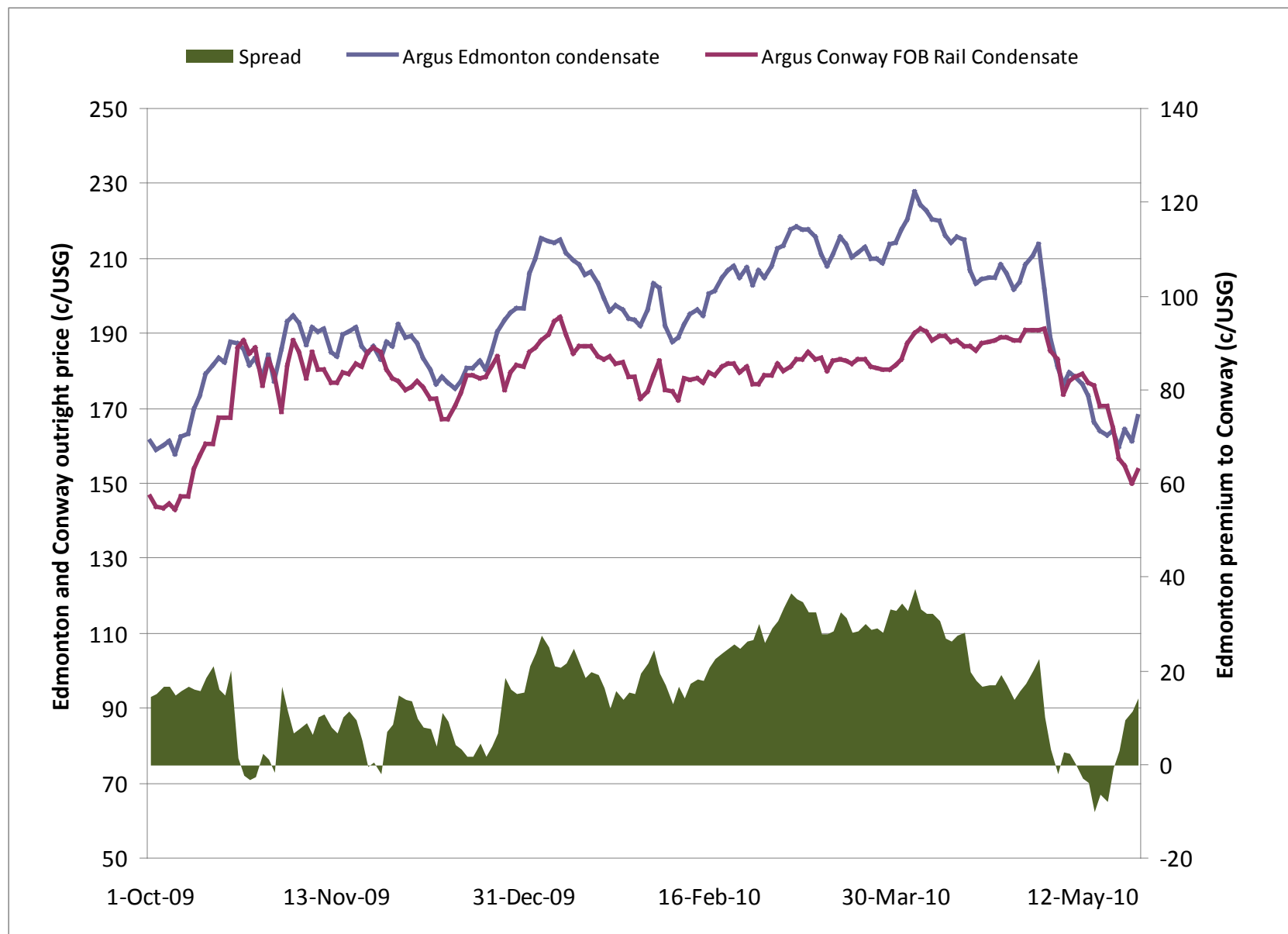


# Argus Edmonton propane vs. Edmonton posted price





# Natural gasoline: Edmonton vs. Conway rail



# Conclusions

- Argus prices offer an option that is more representative of the spot market than posted prices or basket averages.
- The methodology removes unknown factors in the market- including negotiated premiums- decreasing risk.
- Designed to capture all of the liquidity in the fractured Canadian NGL spot markets.

# Conclusions Continued

- We are in the market everyday, which ensures accuracy and provides consistency to the price information in addition to taking away unknowns.
- Daily index creates new price option for term deals that is not based on forecasts.
- Within the Argus framework you are able to continue with your own method of trading.

# Thank you!

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