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Fuel Focus

*Understanding Gasoline Markets in Canada
and Economic Drivers Influencing Prices*

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National Overview

Canadian Retail Gasoline Prices Decreased 1 Cent per Litre from Last Week

For the week ending October 4, 2011, average Canadian retail gasoline prices decreased by almost 1 cent, to \$1.23 per litre. This was the fourth straight week of declining prices. Prices are now at the lowest levels since March 22, 2011. However, current prices are still 17 cents per litre higher compared to a year ago at this date.

Diesel fuel prices declined by 1 cent, to \$1.23 per litre, up 20 cents from the same period last year. Furnace oil prices remained almost unchanged from last week, ending at \$1.11 per litre, an increase of almost 20 cents from a year ago.

The decline in retail average national pump prices reflects lower world crude oil prices.

Recent Developments

- **Increase in 2011 Capital Spending Budget:** So far this year, 53 producers have reported plans to increase their capital spending budgets from initial plans, as oil prices remain strong despite some recent volatility on world crude markets. In outlining their spending plans in late 2010 or earlier this year, producers initially set a budget of \$51 billion for 2011 spending. As of the end of September, that spending figure had increased by \$4 billion to a total of \$55 billion expected for the year. (Source: Daily Oil Bulletin, September 29, 2011)
- **Decline in New Motor Vehicle Sales:** The number of new motor vehicles sold fell 6.2% in July to 132,386 units, partially offsetting the gains in June. Truck and passenger car sales both declined. Lower sales in Ontario accounted for half of the national decrease. Preliminary industry data indicate that the number of new motor vehicles sold in August decreased 1%. (Source: Statistics Canada, The Daily, <http://www.statcan.gc.ca/daily-quotidien/110915/dq110915b-eng.htm>)

Figure 1: Crude Oil and Regular Gasoline Price Comparison (National Average)

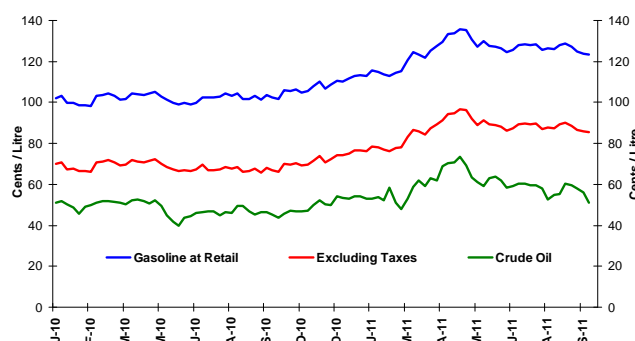
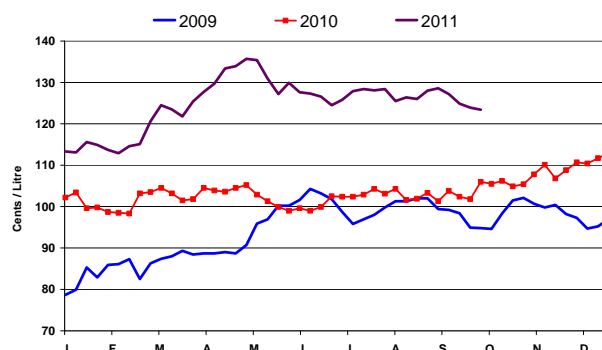


Figure 2: Weekly Regular Gasoline Prices



Changes in Fuel Prices

¢/L	Week of:	Change from:	
	2011-10-04	Previous Week	Last Year
Gasoline	123.4	-0.5	+17.4
Diesel	122.7	-1.4	+19.7
Furnace Oil	111.4	-0.1	+19.6

Source: NRCan

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Retail Gasoline Overview

For the period ending October 4, 2011, the **four-week average** regular gasoline pump price in selected cities across Canada was \$1.25 per litre, a decrease of 2 cents per litre compared to the price in the previous report of September 23, 2011. Compared to the same period in 2010, the average Canadian pump price is 21 cents per litre higher.

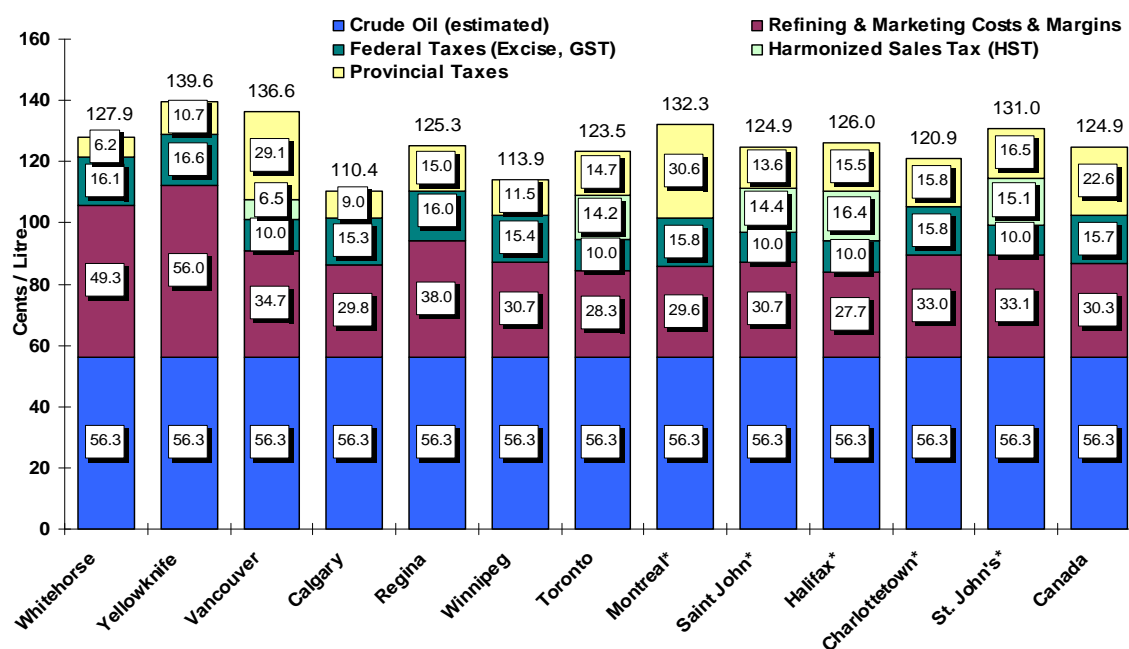
The **four-week average** crude component (based on the Edmonton Par crude) was 56 cents per litre, a dip of 2 cents compared to two weeks ago.

The federal and provincial tax components averaged 38 cents per litre, making up about 31% of the pump price. Compared to last year at this time, this represents an increase of 2.6 cents per litre.

At the national level, refining and marketing costs and margins remained almost unchanged at 30 cents per litre, an increase of 8 cents per litre compared to a year ago.

For further details on refining margins, see our supplement on page 6 of this issue.

**Figure 3: Regular Gasoline Pump Prices in Selected Cities
Four-Week Average (September 13 to October 4, 2011)**



Source: NRCan

* Regulated Markets

Inflation Rose 3% in August 2011

Statistics Canada's Consumer Price Index (CPI) report released September 21, 2011 indicates that consumer prices rose 3.1% in the 12 months to August, mainly as a result of higher prices for gasoline and food purchased from stores. This follows increases of 2.7% in July and 3.1% in June. On a seasonally adjusted monthly basis, consumer prices rose 0.3% in August. Energy prices rose 13.4% during the 12 months to August, following a 12.9% increase in July. Gasoline prices went up 22.8%, compared with the 23.5% increase in July. Prices for fuel oil and electricity also rose, while natural gas prices fell.

On a year-over-year basis, prices increased in all eight major components of the CPI in August. Except for health and personal care, clothing and footwear, as well as recreation, education and reading, prices rose at a faster rate in August than in July. The cost of transportation increased 7.0% in the 12 months to August, following a 6.5% gain in July. Consumers paid more for gasoline, passenger vehicle insurance premiums and air transportation.

Source: The Daily, <http://www.statcan.gc.ca/daily-quotidien/110921/dq110921a-eng.htm>





Wholesale Gasoline Prices

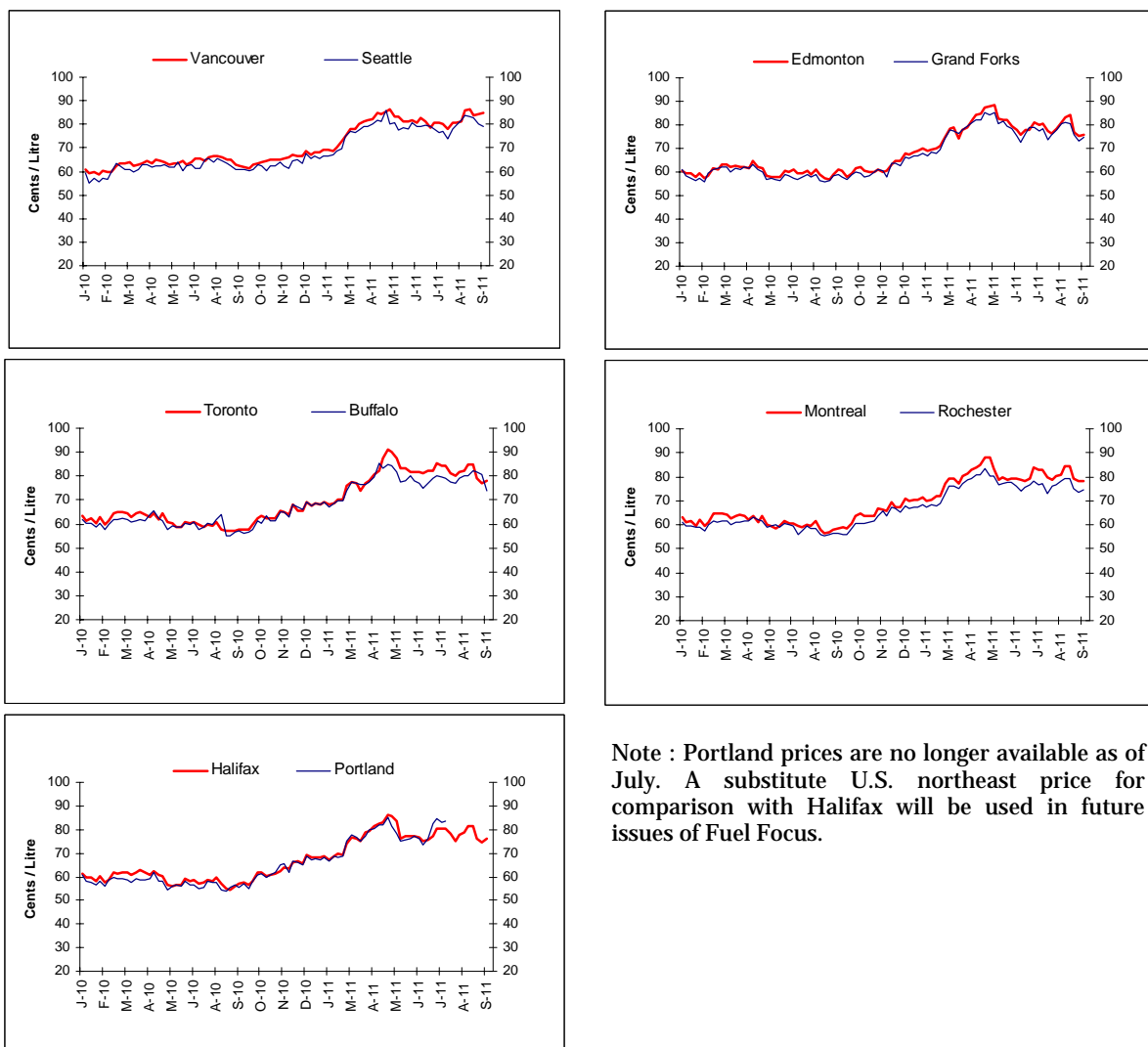
For the week **ending September 29, 2011**, wholesale gasoline prices increased in most of the selected Canadian and American centres compared to the previous week.

Overall, wholesale prices fluctuated between an increase of less than 2 cents per litre to a decrease of nearly 7 cents per litre. Prices ended the period in the 74 to 85 cent-per-litre range.

Wholesale gasoline prices in the Eastern centres, for both Canada and the U.S. ranged between an increase of less than 1 cent per litre and a decrease of almost 7 cents per litre, ending the period in the 74 to 78 cent-per-litre range. In the Western centres, price changes ranged from a decrease of 1 cent per litre to an increase of more than 1 cent per litre, closing at 75 to 85 cents per litre.

Figure 4: Wholesale Gasoline Prices

Rack Terminal Prices for Selected Canadian and American Cities Ending September 29, 2011
(Can ¢/L)



Sources: NRCan, Bloomberg Oil Buyers Guide





Gasoline Refining and Marketing Margins

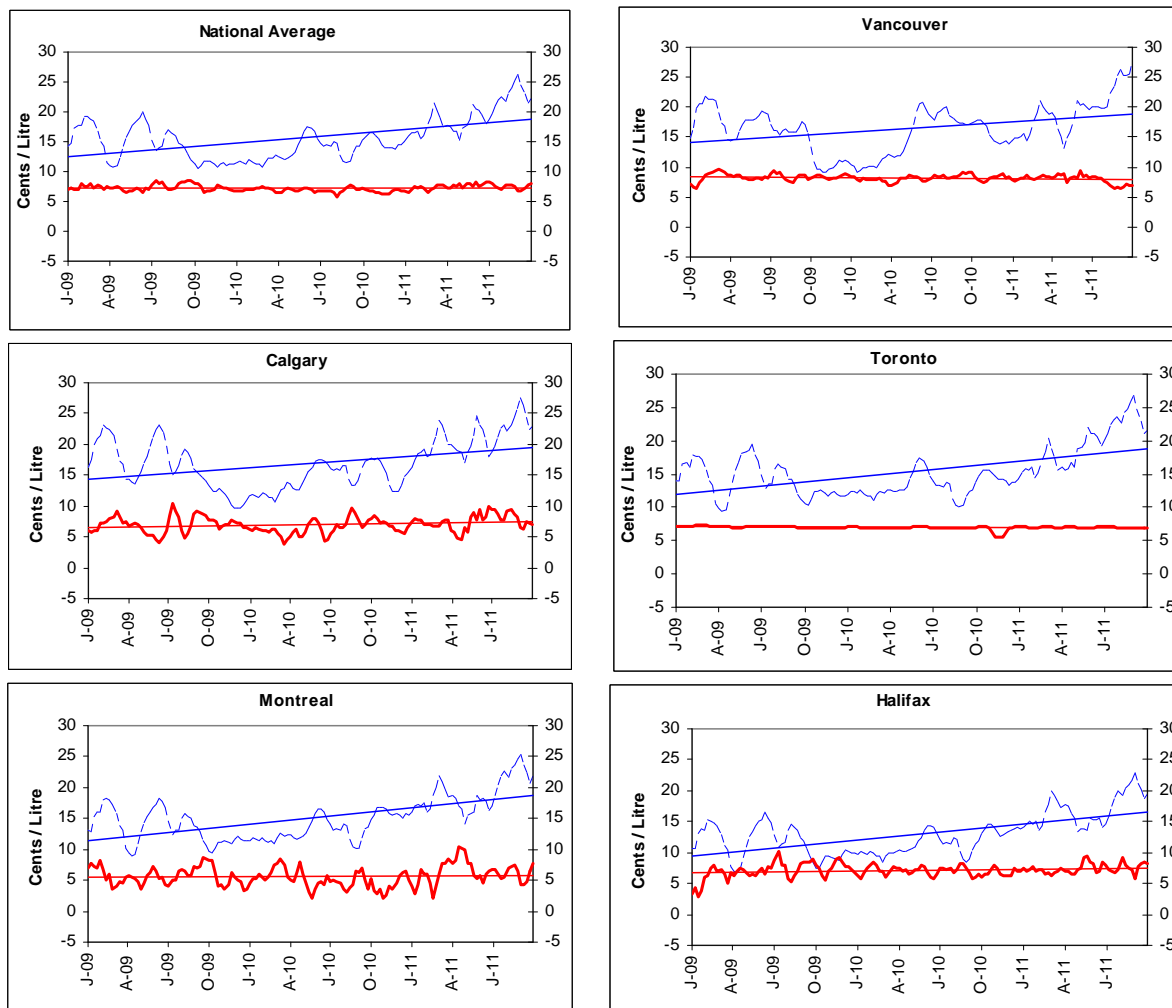
Four-week rolling averages are used for gasoline refining and marketing margins.

Refining margins continue to move downward in all selected centres. This downward trend reflects the decrease in demand for gasoline with adequate supply in the distribution system. For the four-week period ending October 4, 2011, refiner margins were 22 cents per litre, above last year's level by 11 cents per litre.

The downward pressure on wholesale gasoline prices were more significant than the decline in crude oil prices and contributed to the decline in refining margins.

Overall, marketing margins hovered at around 8 cents per litre. Marketing margins for the five centres ranged from a low of less than 7 cents per litre and to a high of more than 8 cents per litre.

Figure 5: Gasoline Refining and Marketing Margins
Four-Week Rolling Average Ending October 4, 2011
----- Refining Margin — Marketing Margin



Source: NRCan





Crude Oil Overview

World Crude Oil Prices Decline for a Third Straight Week

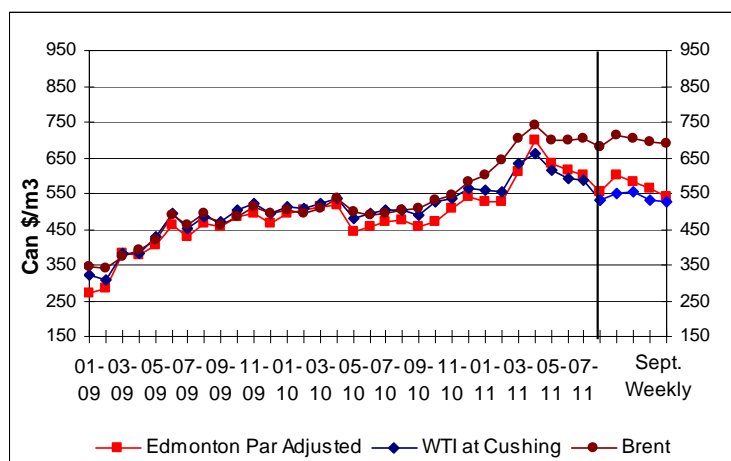
For the week ending September 30, 2011, prices for the three marker crudes averaged between \$527/m³ and \$689/m³, (US\$81 to US\$106 per barrel). For Brent and Edmonton Par, this is a decrease of \$4 to \$24/m³ (US\$3 to US\$6 per barrel), respectively, from the previous week. On a monthly average, the three benchmark crude prices are at a two month low.

World crude oil prices remained volatile for the week ending September 30, 2011, fluctuating on pressures from the Eurozone debt crisis and the weakened global economy. In turn, growing economic uncertainties and

the potential reduction in demand from oil products continue to put downward pressure on oil prices.

The price gap remains between the WTI and Brent as crude oil production from Alberta's oil sands and from the U.S. states such as North Dakota has flooded the U.S. mid-west trading point, which lacks pipeline capacity to move it efficiently to oil refineries on the Gulf Coast. The relatively high price for Brent is relevant to Canadian refiners and gasoline consumers, since some of the oil purchased by eastern Canadian refiners may be priced closer to Brent than WTI or Edmonton Par.

Figure 6: Crude Oil Price Comparisons



BP Statistical Review

BP's *Statistical Review of World Energy June 2011* indicates a strong rebound of global energy consumption in 2010, following the global recession. Consumption growth reached 5.6%, the highest rate since 1973. It increased strongly for all forms of energy and in all regions. Total consumption of energy in 2010 easily surpassed the pre-recession peak reached in 2008. While consumption in emerging economies continued to rise rapidly, OECD countries also saw growth well above average.

Globally, energy consumption grew more rapidly than the economy, meaning that the energy intensity of economic activity increased for a second consecutive year. The data implies that global CO₂ emissions from fossil fuel consumption will also have grown strongly last year.

Source: BP Statistical Review of World Energy June 2011, <http://www.bp.com/sectionbodycopy.do?categoryId=7500&contentId=7068481>

Changes in Crude Oil Prices

Crude Oil Types	Week Ending: 2011-09-30		Change From:			
			Previous Week		Last Year	
	\$Can/ m ³	\$US/ bbl	\$Can/ m ³	\$US/ bbl	\$Can/ m ³	\$US/ bbl
Edmonton Par	541.27	83.61	-24.40	-5.62	+88.94	+13.62
WTI	527.43	81.45	-3.09	-2.25	+20.57	+3.03
Brent	688.63	106.33	-3.96	-2.91	+170.42	+26.16

Source: NRCan





Effect of Crude Oil Price Differentials on Gasoline Refining Margin Estimates

On page 4 of the Fuel Focus bi-weekly report, we show estimates of gasoline refining margins and gasoline marketing margins. This article will focus on refining margins.

The gasoline refining margin is calculated as follows: $\text{Margin} = \text{Wholesale gasoline price (e.g., the price at which wholesalers buy gasoline from refiners)} - \text{an estimate of refinery crude oil feedstock cost (e.g. the crude oil price paid by the refinery)}$

This calculated margin is intended to provide a rough estimate of the margin associated with refining crude oil into gasoline. Refinery profits are part of this margin, but profits are much less than the margin, as all refinery costs - except for crude costs - (e.g., construction and maintenance of the refinery, worker wages, taxes, etc) must also be paid for, out of the refining margin.

In addition, it must be remembered that gasoline generates a disproportionate share of refiner revenues. Gasoline margins are offset by much lower margins on other products such as lubricating oil, diesel, heavy fuel oil and asphalt, some of which often sell for less than the cost of the crude oil used to make them. Thus, while our refining margin calculation is useful for tracking the trends in gasoline margins and estimating how much of the pump price is going to the refiner, it does not represent overall refining margins.

For the above formula, obtaining the wholesale gasoline price is straightforward. Wholesale gasoline prices are collected by a weekly consultant survey, with 47 separate price data points collected from 23 centres across Canada. The national average is an average wholesale gasoline price from this data. We also show wholesale prices in Calgary, Vancouver, Montreal, Toronto, and Halifax, for illustrative purposes.

For several years, Fuel Focus reports have assumed the crude oil input cost – for all centres and for the national average - to be equal to the Edmonton Par crude price. This is the price of a certain quality of crude oil (Edmonton Par) sold at Edmonton, Alberta – the city with the largest collection of refineries in Canada. Edmonton Par prices closely track the price of West Texas Intermediate (WTI), sold at Cushing, Oklahoma. These crudes are of similar quality, and both are transported mainly by pipeline and sold in western Canada and the U.S. Midwest.

For refineries in Western Canada and some Ontario refineries, more than 60% of the crude oil processed is either conventional light, sweet crude oil or high quality synthetic crude oil. Prices for these crudes are closely linked to Edmonton Par prices, so using Edmonton Par as a proxy for refinery crude oil costs is a valid assumption.

However, other refineries in Ontario, and all refineries in Quebec and the Atlantic Provinces, purchase mainly imported or Newfoundland offshore crudes. These refineries purchase crudes from the North Sea, Newfoundland offshore, Middle East, the U.S., and other sources. Currently, roughly 60% of the crude oil processed by Canadian refineries is domestic crude, while 40% is imported crude.

For many years, the use of Edmonton Par as the crude oil input cost assumption for all Canadian refineries was appropriate, as Edmonton Par and Brent crudes traded at similar prices. For example, in 2008, both the average Edmonton Par and Brent price were US\$98/bbl.

However, in recent months the prices of imported, waterborne crudes such as Brent (called waterborne because they are moved by tanker ship) have been much higher than Edmonton Par prices. As our crude price analysis shows (Figure 6 of Fuel Focus), Brent crude is trading at US\$19 per barrel higher than the Edmonton Par crude and US\$24 per barrel higher than WTI.

This means that for at least 40% of the crude oil processed in Canadian refineries, the use of Edmonton Par to calculate gasoline refining margins, rather than Brent, will lead to an underestimation of crude oil input costs, and a calculated refining margin that is higher than the true margin.

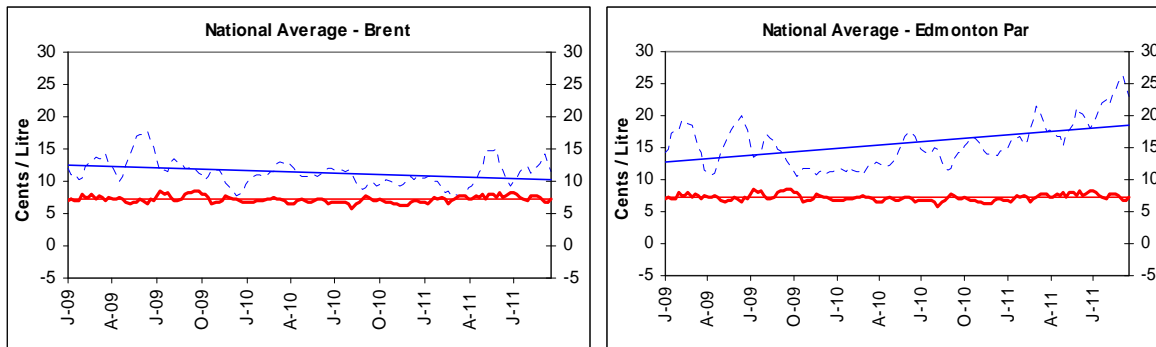
From January to September 2011, gasoline refining margin estimates calculated in our Fuel Focus reports have been rising, and have gone from the 15 - 26 cent-per-litre range, compared to the 11 - 17 cent-per-litre range during the same period last year. This recent upward trend is thought to be due in part to our use of Edmonton Par as a proxy for refinery crude costs.

To illustrate, the graph on the left on page 7 calculated refining margins using Brent prices, while the graph on the right used Edmonton Par prices, as we usually do. Obviously, the choice of crude oil used makes a material difference in this calculation.





Comparison Refining Costs and Margins Using Brent and Edmonton Par Crude



In short, the refining margins calculated in the Fuel Focus reports in recent months could be overestimated, as roughly 40% of crude oil refined in Canada is imported, and the price of this crude is thought to be significantly higher than Edmonton Par prices. This is expected to be particularly true for the refineries in Montreal and points east. For similar reasons, Figure 3 of the Fuel Focus, which shows refining margins and crude oil input costs, may not provide a comparable accurate picture of certain markets. For example, the use of Edmonton Par as the input crude oil cost for Montreal and points east may underestimate the true cost of crude, which may be closer to the price of Brent.