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Petroleum Product Market Outlook Fall 2006

Oil Division
Natural Resources Canada

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Overview

Heading into the 2006-2007 winter, consumers finally have a reason for optimism. Over the course of the past three months, gasoline and heating oil prices have fallen by \$0.27 and \$0.17 per litre respectively. Although prices have leveled off in recent weeks, this marks the first time in several years that consumers are not facing substantially higher prices going into the winter heating season. Lower crude oil prices, above-average inventory levels in the United States, and predictions of normal to above-normal temperatures for most of Canada this winter should provide some stability in gasoline and distillate prices this winter.

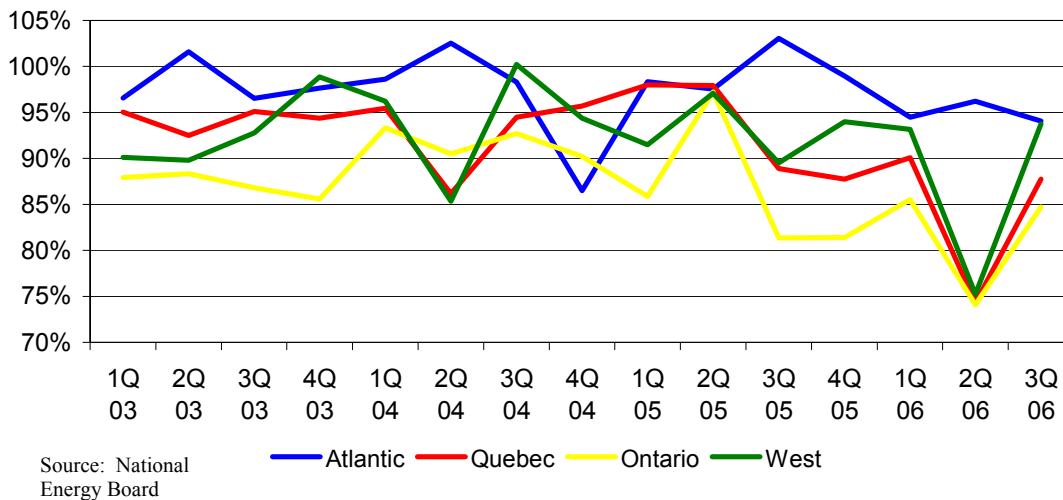
Highlights

- Canadian average gasoline prices have fallen from about \$1.14 per litre in early August to \$0.87 per litre by the end of October, a decrease of \$0.27 per litre.
- Distillate prices have also fallen significantly during this time frame. Diesel fuel and furnace fuel oil prices each fell by 17 cents per litre to \$0.90 and \$0.75 per litre respectively by the end of October.
- Lower crude oil prices, above-average inventory levels, reduced anxiety about weather related supply disruptions and a smoother-than-anticipated transition to ultra-low sulphur diesel fuel have all contributed to lower prices.
- Refinery maintenance turnarounds planned for this Fall are nearing completion and refinery production is expected to return to full capacity by mid-November.
- Refiners are currently focused on distillate production and inventories are expected to build as facilities return to full production capacity.
- Unforeseen delays could significantly change the current inventory situation, but industry has indicated that current gasoline and distillate inventories in Canada are near targeted levels for this time of year.
- Although developments in world oil markets or colder than expected winter weather could significantly alter forecasts, petroleum product prices are not expected to change significantly this winter.

Refinery Utilization Rates

On June 1, 2006 the first phase of new Ultra-Low Sulphur Diesel (ULSD) regulations went into effect. The regulation limits the sulphur content of on-road diesel fuel leaving the refinery gate to a maximum of 15 parts per million. This is a considerable reduction from the previous requirement of 500 parts per million and required the refining industry to make a substantial investment in new process equipment. As a result, a well above-normal number of refinery turnarounds took place this spring to tie-in new diesel hydrotreating technology. This explains the dramatic drop in refinery utilization seen in Figure 1.

Figure 1
Refinery Utilization Rates



The large number of refinery shutdowns needed to complete installation of sulphur extraction units delayed other more routine refinery maintenance turnarounds well into the summer months and pushed others into the fall. Construction delays and other unanticipated refinery shutdowns further reduced refinery utilization rates this summer. Reduced synthetic crude oil production due to upgrader maintenance and other production delays reduced the availability of synthetic crude oil to refiners, temporarily constraining refinery production. Summer storms also affected refinery production, interrupting electricity supplies and leading to several days of lost production.

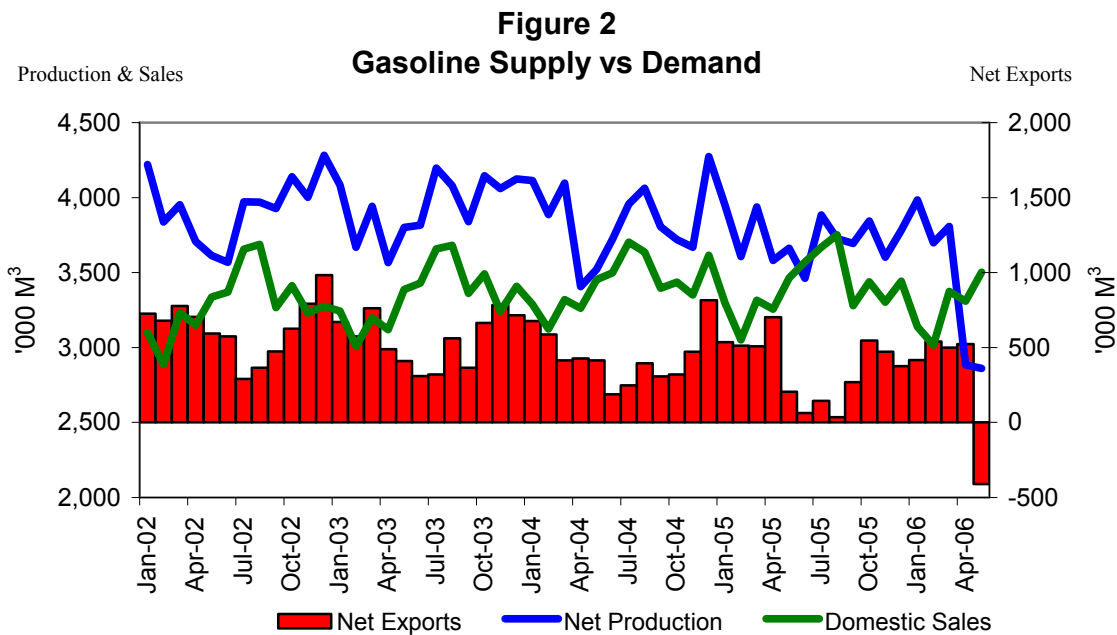
Maintenance turnarounds and other more extensive refinery upgrade projects are again ongoing this fall. These projects are nearing completion and refinery production is expected to return to full capacity by mid-November. Refiners are currently focused on distillate production for the heating season and inventories are expected to build as facilities return to full production.

As these regularly scheduled maintenance turnarounds are planned well in advance, refiners have already arranged alternative sources of supply to supplement their reduced rates of production during this time. Although no supply problems are anticipated as a

result of these shutdowns, markets are more vulnerable to short-term price spikes as flexibility in the system to respond to unplanned events is significantly reduced during these periods.

Canadian Petroleum Product Supply and Demand

Figure 2 depicts the relationship between Canadian production of gasoline and domestic sales. The graph clearly illustrates the seasonal nature of gasoline consumption and the fact that production is substantially higher than consumption. Canada also exports significant volumes of gasoline, primarily to the U.S. eastern seaboard from Atlantic Canadian refineries. The trend is similar for diesel fuel.



Source: Statistics Canada

In 2005, Canadians consumed more than 40 billion litres of gasoline and 26 billion litres of diesel fuel. Gasoline demand fell by 0.4% in 2005, while diesel fuel demand grew by 4.5% from the previous year. In the first three quarters of 2006, gasoline demand fell by 2.0% compared to the same period in 2005, while diesel fuel demand dropped by nearly the same amount (1.7%). High pump prices have taken some of the steam out of the demand for gasoline and diesel fuel, but the recent softening in crude and product prices should boost demand over the coming months.

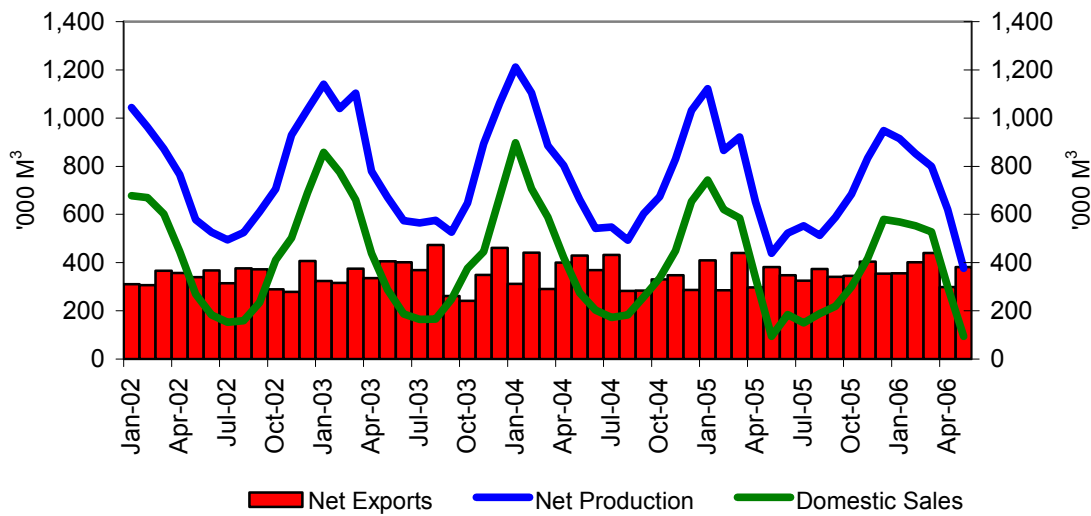
This spring, a large number of refinery shutdowns took place across the country to complete refinery modifications needed to meet new ULSD specifications. The large number of shutdowns significantly reduced refinery production ahead of the summer driving season. As a result, large volumes of imported product were needed to satisfy domestic demand. In fact, for the first time in recent history, Canada was in a large net-import position for gasoline in May and June. The reliance on imports stretched

distribution infrastructure and left Canadian markets extremely vulnerable to unplanned refinery outages. This led to much higher, more volatile prices throughout the summer than would have normally been expected.

In 2005, Canada's consumption of heating oil was just over 4.6 billion litres, down 500 million litres (11%) from the previous year. During the first nine months of this year, heating oil sales were down 13% compared to the same period a year earlier. The fall in demand can mainly be attributed to above normal temperatures this past winter, but also continues a longer-term trend of declining demand. With Environment Canada forecasting normal or above-normal temperatures for much of Eastern Canada this winter, heating oil sales will likely continue to trend lower, although colder than anticipated winter weather could significantly increase heating oil consumption.

Heating oil sales are concentrated in Eastern Canada, with Atlantic Canada accounting for 31% of domestic sales, Quebec at 36%, Ontario at 27% and the rest of Canada at 6%. In 2005, Canada exported half of its heating oil production, mostly to the U.S. east coast.

**Figure 3
Furnace Oil Supply vs Demand**



Source: Statistics Canada

Although Atlantic Canada accounts for only 31% of Canadian sales, it has the greatest dependence on oil for heating, with over half of all homes using fuel oil to meet at least a portion of their heating needs. Prince Edward Island is by far the most dependent with over 90% of all households heating with fuel oil at least partially. In Nova Scotia, Newfoundland & Labrador and New Brunswick, the percentage of households using fuel oil are 60%, 29% and 25% respectively, compared to only 17% in Quebec and 9% in Ontario. Despite the small percentage of households in Quebec and Ontario that use heating oil to meet their space heating needs, heating oil sales in these provinces represent two thirds of Canada's furnace oil consumption due to the size of these markets.

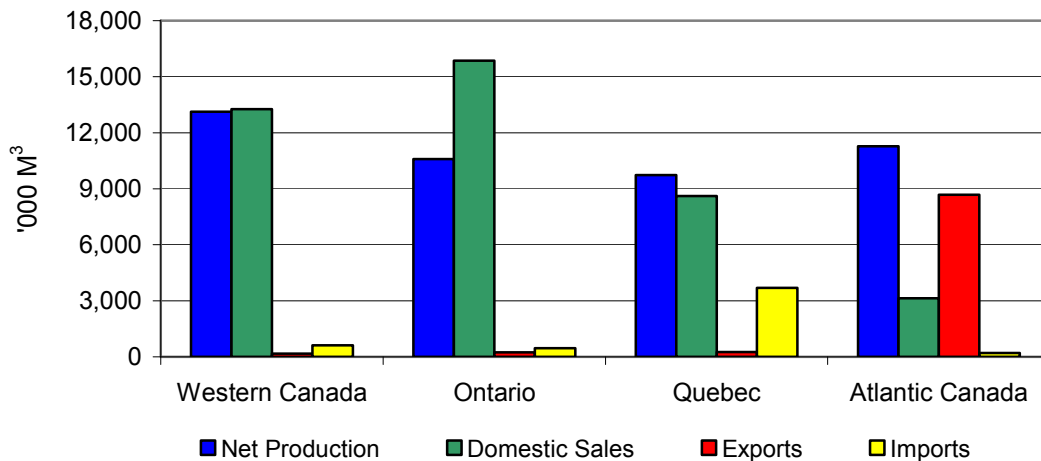
In Western Canada, natural gas is the fuel of choice for home heating. Only minimal volumes of furnace oil are consumed on the prairies and fuel oil accounts for only 6% of the home heating market in British Columbia.

Regional Market Situation

Canada has four distinct supply/demand regions for petroleum products: Western Canada, Ontario, Quebec and Atlantic Canada. At times, product imports and exports play a significant role in balancing supply and demand in each of these regions.

Refineries in Atlantic Canada produce a surplus of petroleum products. In fact, net exports from Atlantic Canada represent more than 52% of their production and over 73% of Canada’s exports of petroleum products. Atlantic Canadian refiners have been very successful in marketing their ultra low sulphur products into the United States, with some cargoes reaching destinations as far away as California. Despite being a large net exporter of petroleum products, companies in Atlantic Canada are looking to significantly expand the region’s production capacity to capitalize on growing product demand in the very large Northeast U.S. market.

**Figure 4
2005 Regional Gasoline Supply/Demand Balance**



Source: Statistics Canada

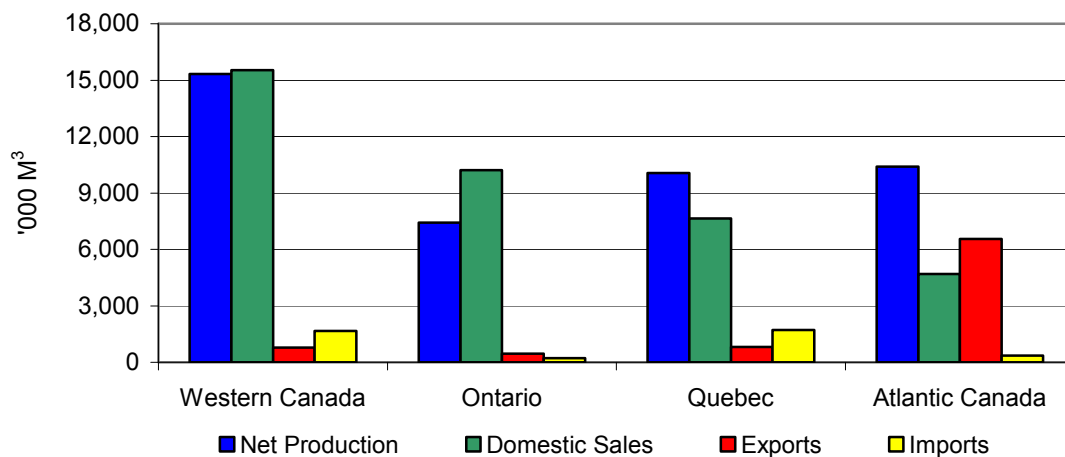
Although Figure 4 shows that Quebec is a significant net importer of gasoline, it is important to note that Quebec refineries produce more than enough product to meet the provinces needs. Most of the imports into Quebec either flow directly through to Ontario or replace domestic production that was sold into Ontario. Because Quebec is self-sufficient in petroleum product production and has well established infrastructure to import product, the Quebec market is very well supplied.

Following the closure of Petro-Canada’s Oakville refinery in March 2005, Ontario has become a large net importer of petroleum products. During normal times, Ontario is short both gasoline and diesel fuel. Last year, transfers from other provinces (mainly Quebec) together with imports, accounted for more than 35% of gasoline sales and 30% of distillate sales. Most of this product comes from Quebec via the Trans-Northern Pipeline.

This past summer, Ontario was plagued with several periods of extremely tight product supply. Inventories heading into the summer were low as a result of the large number of refinery shutdowns that occurred throughout the spring. Project delays, start-up difficulties and summer storms that temporarily interrupted electricity supply to refineries, further constrained supply. The lack of spare refining capacity, in conjunction with capacity constraints on the Trans-Northern Pipeline system, limited industry’s ability to respond to these unplanned events.

In summer months, industry has the ability to re-route additional supplies from the east coast of the United States up the St. Lawrence and into southern Ontario. However, this option is not available in the winter months when the Seaway is closed. If similar problems were to occur during the winter months, they could constrain product supply and lead to a short-term spike in petroleum product prices.

Figure 5
2005 Regional Middle Distillate Supply/Demand Balance



Source: Statistics Canada

In Western Canada, the supply and demand for petroleum products is also very tight. Refineries have been operating at, or near, full capacity for several years and, because much of Western Canada is landlocked, there is limited access to supplies from other regions. Often the industry imports diesel and jet fuel into the Vancouver market from refineries in Washington State. This permits the Edmonton refiners, who normally supply a substantial volume of product into the Vancouver market, to free up additional

volumes for the prairies. Although the volumes of petroleum product imports and exports are not very large, they play a significant role in balancing supply and demand in this region.

Like Ontario, Western Canada is vulnerable to unplanned refinery shutdowns. Refinery capacity additions have not kept pace with the growth in fuel demand that has accompanied the rapid economic growth in the region. Typically, Western Canadian refineries operate at full capacity to meet normal product demand. Unplanned refinery production problems pose a significant challenge to industry to maintain customer supply commitments.

In recent years, the Trans-Mountain Pipeline system, which transports crude oil and petroleum products from Edmonton into British Columbia, has been operating at near capacity. Increased crude oil exports by Canadian oil producers have reduced the line space available for Canadian downstream companies. Line apportionment could restrict the ability of Edmonton area refiners to move product into the Vancouver market. Likewise, line apportionment could reduce the volume of crude oil available to British Columbia refineries. A small expansion of the pipeline is expected to be completed early in 2007. In the mean time, capacity constraints could necessitate increased product imports from Washington State refineries. These imports typically come at a higher cost, as domestic companies must compete with industry in California for available supplies.

Inventory Levels

Over the last decade refiners have been rationalizing their operations in order to reduce costs and improve rates of return. A key element of this process has been the reduction of inventory levels to the minimum required to maintain normal operations. Under this just-in-time inventory philosophy, inventory levels have declined substantially for most products.

Furnace oil inventories are difficult to manage because demand for the products is so weather dependant. Stocks are built up in the fall in anticipation of a normal winter. If the weather is warmer than expected, companies can be left with excess product, which they must carry throughout the summer. Similarly, with a colder than normal winter, inventory levels will be drawn down below desired levels.

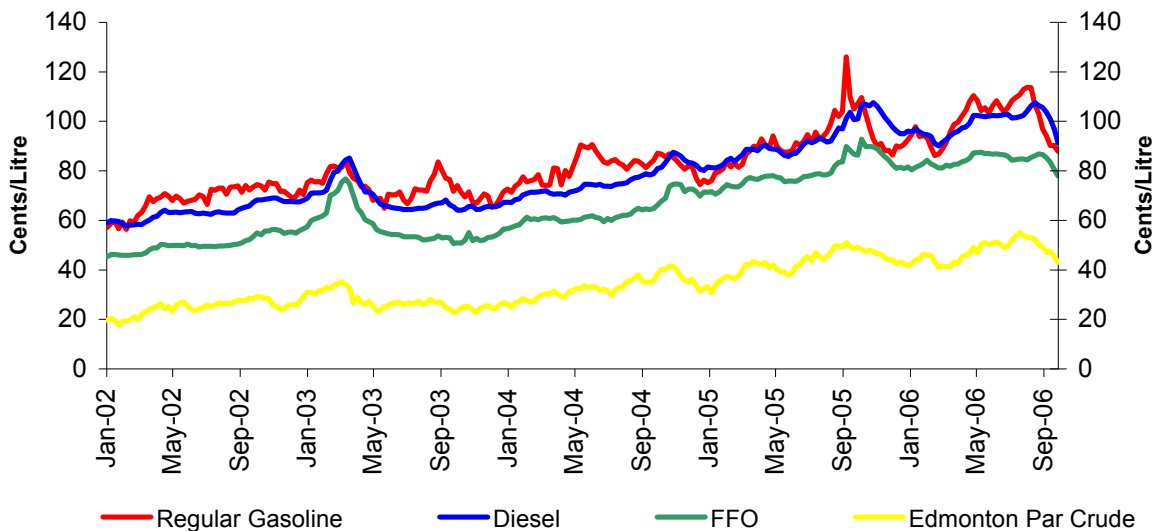
Fall maintenance turnarounds are well underway and indications are that work is progressing well. Prior to commencing maintenance work, companies build product inventories that are used to supplement reduced production rates while the maintenance is being performed. Unforeseen delays could significantly change the current inventory situation, but industry has indicated that current gasoline and distillate inventories in Canada are near targeted levels.

Petroleum Product Prices

Petroleum product prices have receded significantly over the past three months. Lower crude oil prices, above-average inventory levels in the U.S., reduced anxiety about weather related supply disruptions and a smoother-than-anticipated transition to Ultra-Low Sulphur Diesel Fuel have all contributed to push prices lower. Canadian average gasoline prices have fallen from about \$1.14 per litre in early August to \$0.87 per litre by the end of October, a decline of \$0.27 per litre. Distillate prices have also fallen significantly during this time frame. Diesel fuel and furnace fuel oil prices both fell by 17 cents per litre to \$0.90 and \$0.75 per litre respectively by the end of October.

Prices have leveled out in recent weeks. According to the U.S. Energy Information Administration's (EIA) *Short-term Energy and Winter Fuels Outlook* released November 2006, U.S. retail gasoline prices are expected to average \$2.32 US per gallon this winter, up slightly from current prices of \$2.20 U.S. per gallon, but below last winter's average price of \$2.42 per gallon. As petroleum product prices in Canada are heavily influenced by wholesale prices at New York Harbour, lower gasoline prices in the United States should keep Canadian prices near current levels.

Figure 6
Gasoline, Diesel, Furnace Oil and Crude Oil Price Comparison



Source: Natural Resources Canada

At the retail level, U.S. heating oil prices are expected to average \$2.33 per gallon for the 2006-2007 heating season, slightly below current prices of \$2.38 per gallon. If the EIA's predictions hold, Canadian heating oil prices should remain near \$0.75 per litre throughout the winter, down from \$0.82 per litre last winter. Consumers should be aware that furnace oil price forecasts could change significantly if temperatures this winter are colder than expected. Colder than normal winter weather could quickly deplete product inventories and lead to higher consumer prices.

Summary

The Canadian refining industry has taken the necessary steps to ensure that markets are well supplied this winter. Fall maintenance plans are progressing well and inventory levels appear to be on target for this time of year. After a summer of high and volatile prices, consumers should see some relief from prices this winter. Although developments in world oil markets or colder than expected winter weather could significantly alter price forecasts for gasoline and heating oil, lower crude oil prices and high inventory levels in the U.S. are expected to contribute to stable prices throughout the winter.