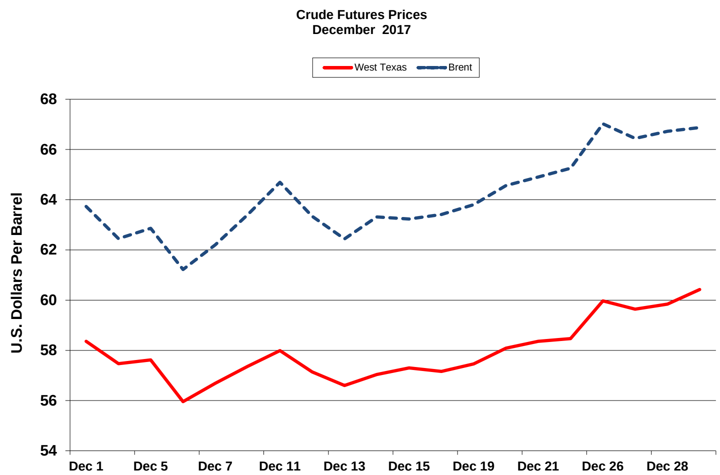
Overview



Oil prices in December rose for the sixth straight month on expectations that OPEC and non-OPEC producers will maintain promised output cuts through much, if not all, of 2018, OECD crude oil inventories continued to decline, with U.S. inventories dropping to a two-year low, a major oil pipeline in the North Sea was shut down to correct a crack, a Libyan oil pipeline blew up, and U.S. crude oil production fell for the first time since mid-October. West Texas Intermediate crude oil futures closing prices averaged US$57.95 a barrel during the month, up $1.29 and the highest since June 2015. North Sea Brent averaged $64.09 a barrel, up $1.24 and the highest since May 2015. WTI's discount to Brent, after widening for five straight months, narrowed slightly from a 30-month high to $6.14.

Oil Prices

Oil prices rose in early December after Saudi Arabia's energy minister said that OPEC and its partners will maintain their production cuts until world oil production meets demand. The minister said there is still a glut of about 150 million barrels of crude oil in the OECD and it is unlikely this number will change very much over the next four months because of seasonal inventory building and rising U.S. oil production. Three independent U.S. oil producers, including Pioneer Natural Resources, said they would not increase drilling just because of the rise in prices following the decision by OPEC and non-OPEC producers to extend their production cuts. Instead, they intend to keep spending under control and generate profits for investors. Nevertheless, Pioneer plans to boost output from about 300,000 barrels a day to more than 1 million b/d by 2026. Prices fell after an industry survey showed that North American explorers probably will increase spending by 20% in 2018 and the U.S. dollar rose. Prices rose after OPEC oil production fell to a six-month low in November, representing 118% compliance with promised output cuts, and on expectations for lower U.S. crude oil inventories

Oil prices rose in mid-December on expectations for lower U.S. crude oil inventories, then fell as concerns about the shutdown of the Forties crude oil pipeline in the North Sea eased and the U.S. Energy Information Administration (EIA) said that U.S. oil production would rise to a record of more than 10 million b/d in 2018. The 450,000-b/d Forties pipeline was shut down to repair a small hairline crack, a process expected to take two to four weeks, and its operator declared *force majeure*, the first time this has happened in the North Sea in nearly 30 years. North Sea Brent crude rose above $65 a barrel for the first time since mid-2015 (Forties crude is one of the crudes that make up the Brent blend). Canadian heavy crude's discount to West Texas Intermediate widened to a three-year high after ongoing congestion on the TransCanada Keystone and Enbridge Mainline pipelines restricted Canadian crude exports. Enbridge expects its 2.85-million-b/d Mainline to remain full as it receives 850,000 b/d of new supply through 2022.

OPEC's secretary-general said that the OECD crude and product inventory surplus has fallen to 130 million barrels above its five-year average, down from 380 million barrels before cuts began at the beginning of 2017. If OPEC maintained output at current rates through to the end of 2018, inventories would drop by another 274 million barrels. Bloomberg estimates that the Forties pipeline disruption will reduce that surplus by 5.5-13 million barrels.

Oil prices fell in mid-December after the International Energy Agency (IEA) said that efforts by OPEC and allied non-OPEC producers to reduce OECD crude inventories may fail as growth in U.S. and other non-OPEC oil production exceeds growth in fuel demand in 2018. Prices were also depressed by a fifth consecutive weekly increase in U.S. gasoline inventories. Qatar's energy minister said that the crude market will be balanced in the third quarter of 2018, and Kuwait's oil minister said that world oil demand in 2018 will grow by a healthy 1.5 million b/d. The 10 non-OPEC producers who have committed to cutting output achieved 92% compliance with promised output cuts in November, down from 105% in October. Prices rose as the number of U.S. oil drilling rigs declined for the first time in four weeks, then fell after Nigerian oil workers suspended their strike. Prices rose on expectations that U.S. crude oil inventories fell to their lowest level in two years, at a time when North Sea crude production has been hampered by the Forties pipeline outage. The EIA expects U.S. crude oil exports to rise from 945,000 b/d so far this year to 1.7 million b/d.

Oil prices rose in late December on a greater than expected decline in U.S. crude oil inventories, to the lowest since October 2015, offsetting higher gasoline and distillate inventories. U.S. crude oil exports surged by 772,000 b/d, a record amount, and U.S. crude oil production rose to a record 9.79 million b/d. Prices rose after a Libyan oil pipeline exploded, causing oil production to drop by 90,000 b/d, then fell on expectations that the pipeline will be back in service in about a week. Analysts surveyed by Bloomberg expected a 3.75-million-barrel decline in U.S. crude inventories. Prices rose after U.S. crude oil production declined for the first time since mid-October.

Price Outlook

The U.S. **Energy Information Administration** (EIA) has increased its West Texas Intermediate crude oil price forecasts to $50.56 a barrel for 2017 and $52.77 for 2018, representing increases of 17% and 4.4% for the respective prior year. The North Sea Brent forecasts have been increased to $53.88 and $57.26, respectively, 23% and 6.3% higher than the prior year. EIA also has a more optimistic outlook for world liquid fuels demand and world economic growth. Fuels demand will be 130,000 barrels a day higher than expected in 2017 and 90,000 b/d higher in 2018, with annual growth of 1.4% and 1.6%, respectively. The world economy, weighted for oil consumption, will grow by 3.0% in 2017 and 3.2% in 2018, up from 2.7% growth in 2016. However, world liquids supply will grow more quickly than demand and this will cause world liquids inventories to rise moderately. U.S. crude oil production will grow from 9.2 million b/d in 2017 to 10-million b/d in 2018, exceeding the 1970 record of 9.6 million b/d.

GMP FirstEnergy, a Calgary investment firm, expects West Texas Intermediate crude oil to average $56 a barrel in the first quarter of 2018 and rise to $59 by the end of the year. The increase, however, will not be enough to stir producers to improve productivity. U.S. oil production grew by more than 1 million b/d annually from 2012-14, but growth slowed after prices collapsed and now the firm expects output to grow by 500,000 b/d this year and 825,000 b/d next. Growth in output is being restrained by rising field costs (sand and crews), insufficient drilling and completion crews, and a lack of recent productivity increases in many of the key shale oil plays, says the firm (JWN).

Goldman Sachs, a U.S. bank, has increased its 2018 West Texas Intermediate crude oil price forecast from $55 to $57.50 a barrel and the North Sea Brent crude forecast from $58 to $62. The bank has maintained its 12-month overweight recommendation on commodities, saying that strong growth in demand for raw materials will result in better returns (about 15%) than those on other assets. Goldman Sachs does not expect the oil market to revert to contango (where near-term crude futures prices are lower than longer-term prices) in 2018 (Bloomberg).

Citigroup, a U.S. bank, says OPEC and non-OPEC production cuts will last until the second or third quarter of 2018 but not the end of 2018, as currently planned. Almost all of the growth in world oil demand to the end of 2018 will come from non-OPEC producers, leaving little space for OPEC and its partners. Oil prices may fall in the second half of next year and into 2019. North Sea Brent crude may average $49 a barrel in 2019 as production by OPEC, Brazil and Russia grows, says the bank (Bloomberg).

New York investment bank **Jefferies** has increased its 2018 West Texas Intermediate crude oil price forecast from $54 to $59 a barrel and the North Sea Brent forecast from $57 to $63. The world oil market will remain undersupplied through 2018 and OECD crude oil inventories will fall to their five-year average in the third quarter, thereby achieving OPEC's target. This forecast assumes that OPEC will continue its production cuts through the end of 2018, says the bank (Bloomberg).

Goldman Sachs, a U.S. bank, says that OPEC's goal of rebalancing the market by removing the crude inventory surplus in the OECD will be achieved sooner than expected. Crude inventories will remain below seasonal levels and continue to decline through the second quarter of 2018, at which time the market will have rebalanced. OPEC will be able to end its production cuts before their scheduled expiry date of the end of next year, says the bank (Bloomberg).

Barclays, a British bank, says that North Sea Brent crude oil will average $55 a barrel in 2018. The bank is less optimistic than some other forecasters because it believes that most of the recent strength in prices is due to temporary factors that will be reversed next year. Strong oil prices will stimulate more U.S. and other non-OPEC oil production and cause crude inventories to rise again, says the bank (Bloomberg).

UBS, a Swiss bank, has increased its 2018 North Sea Brent crude oil price forecast from $55 to $60 a barrel. OECD crude oil inventories will fall to their five-year average, the goal of OPEC and its non-OPEC partners, in the third quarter next year. The bank increased its fourth-quarter 2017 West Texas Intermediate crude oil price forecast from $51 to $54 and the Brent forecast from $54 to $60 (Bloomberg).

Credit Suisse, a Swiss bank, has increased its 2018 West Texas Intermediate crude oil price forecast from $50.50 to $56 a barrel and the North Sea Brent crude forecast from $53 to $60, saying that strong commitments by OPEC and non-OPEC producers to extend output cuts will cause OECD crude inventories to “normalize” by about the third quarter of 2018 (Bloomberg).

Commerzbank of Germany has increased its 2018 West Texas Intermediate crude oil price forecast from $51 to $53 a barrel and the North Sea Brent forecast from $53 to $57. The U.S. shale industry will “strike back” in 2018 by increasing its share of the world oil market, which will depress oil prices from current levels in the first half of 2018, says the bank (Bloomberg).

New York investment banking advisory firm **Evercore** has increased its North Sea Brent crude oil price forecasts by $5 a barrel to $65 for 2018 and $70 for 2019, noting that oil demand is growing healthily and could accelerate further and OPEC is delivering on its output cuts (Bloomberg).

JP Morgan Chase, a U.S. bank, says that an oil price of $60 a barrel looks to be the tipping point for U.S. shale producers to consider increasing output, but this price would have to be sustained for one or two quarters before producers actually revise their spending plans for 2018 (Bloomberg).

Macquarie, an Australian bank, has increased its 2018 West Texas Intermediate crude oil price forecast from $46.08 to $50.46 a barrel and the North Sea Brent forecast from $49.33 to $55.71, based on tighter market balances. However, surpluses will return in 2019, says the bank (Bloomberg).

Investment research firm **Bernstein** says that world refining margins will average $5.00-5.50 a barrel in 2018, exceeding most expectations, and this reflects strong growth in refined product demand of 1.3 million b/d next year (Bloomberg).

RBC, a Canadian bank, has increased its 2018 West Texas Intermediate crude oil price forecast from $53 to $58 a barrel and the North Sea Brent forecast from $55.50 to $62.30 (Bloomberg).

Bank of America Merrill Lynch says that North Sea Brent crude oil will rise to $70 a barrel by mid-2018 based on strong growth in demand and a tight supply/demand balance (Bloomberg).

UBS Wealth Management expects oil prices to decline to $57 a barrel in 2018 as U.S. oil production rises, although the world crude market will likely be more balanced (Bloomberg).

FGE, an energy consulting firm, says that when OECD crude inventories fall to their five-year average, as is OPEC’s target, oil prices will rise to $65-70 a barrel (Bloomberg).

The **Abu Dhabi Investment Authority** expects oil prices in 2018 to be higher than the current range of $55-60 a barrel and also to be more volatile than in 2017 (Bloomberg).

The CEO of Russian oil company **Lukoil** says there is danger in letting oil prices rise too high and that a price of $65 a barrel suits both producers and buyers (Bloomberg).

Daniel Yergin, vice-chairman of research company **IHS Markit**, says North Sea Brent crude oil will trade from the high $50s to the high $60s in 2018 (Bloomberg).

Vanilla Is Good, Vanadium Is Bad

Human emissions of vanadium, a trace metal found in many earth minerals such as petroleum and coal, have risen sharply since 2000 and potentially pose a growing risk to human health, according to Duke University. The main reason for rising vanadium emissions is industry's growing use of heavy petroleum fuels like heavy oils, tar sands, bitumen and petroleum coke for energy. Vanadium is also emitted by mining, extraction and processing and by natural processes such as volcanic eruptions and rock weathering. Human emissions of vanadium to the atmosphere now exceed natural sources by 70%. Human emissions to the water have increased vanadium flux in rivers by 15%, while the budget of dissolved vanadium in the oceans is "remarkably" well-balanced. Excessive vanadium in the air and the water has potential, but poorly documented, consequences for human health. There is growing evidence that breathing vanadium-rich aerosols can impair respiratory functions and worsen conditions such as asthma and chronic obstructive pulmonary disease. Greater emissions of vanadium to the atmosphere in the near future are likely as interest in petroleum derived from unconventional deposits increases, says the study (http://www.pnas.org/content/early/2017/12/05/1715500114, *Proceedings of the National Academy of Sciences*, Green Car Congress).

A Dearth That Could Abolish Mirth on Earth

New discoveries of oil and natural gas worldwide in 2017 are expected to total only 7 billion barrels of oil-equivalent, the lowest since the 1940s, according to Rystad Energy, a Norwegian consulting firm. World oil discoveries began declining in 2010. As recently as 2012, world oil and gas discoveries totalled 30 billion barrels. They then dropped to 15 billion barrels in 2014 and 8 billion in 2016 as oil prices fell and U.S. shale oil production grew strongly. The current discoveries are expected to replace only 11% of the oil produced in 2017, and Rystad says this low replacement rate poses a serious threat to oil production 10 years in the future. World exploration budgets have fallen by more than 60% over the past three years and oil companies are diverting spending on offshore and conventional exploration to U.S. shale, although, as IHS Markit notes, U.S. shale accounts for only 7% of world oil production. Rystad says that exploration budgets may increase soon as U.S. crude oil inventories continue to decline and oil prices approach $60 a barrel (*Houston Chronicle, MCT Regional News*).

Canada Advised to Have One National Carbon Pricing System

The differences in Canadian provincial carbon pricing systems may eventually create pressure to create one national carbon regime, according to the Organization for Economic Cooperation and Development (OECD). The federal government will implement a minimum $10-per-tonne tax on carbon emissions in 2018, rising to $50 a tonne in 2022, on provinces that do not implement equivalent carbon pricing. Six provinces have implemented or will implement carbon pricing in 2018. Canada is the second-most carbon and energy-intensive economy in the OECD, and uses 62% more energy and emits 44% more carbon per unit of GDP than the OECD average. The OECD acknowledges that this largely reflects the large role that natural resources play in the

Canadian economy, but notes that Canada's energy use and carbon emissions are high compared even to other resource-heavy economies. Canadian environmental taxes are third-lowest in the OECD, after only the United States and Mexico. This is because fuel taxes are low, heating fuels are largely not taxed at all, and excise taxes on gas guzzlers do not apply to pickup trucks, even though these are the sales leaders in Canada. Two recommendations that the OECD makes is that the Canadian government announce plans soon for increasing the $50-per-tonne carbon tax beyond 2022 so as to reduce investor uncertainty, and to establish an accountability mechanism to better compare and track provincial carbon regimes (Canadian Press, JWN, http://www.oecd.org/environment/country-reviews/Highlights_OECD_Environmental_Performance_Review_Canada2017.pdf).

Canada's Refining Industry Is an Important Economic and Environmental Performer

Canada's 15 refineries produced 109 billion litres of road, jet, rail and marine fuels, heating oil, lubricants and petrochemicals in 2016, according to a Canadian Fuels Association (CFA) analysis of Statistics Canada data. Canadian refined product demand in 2016 averaged 1.815 million barrels a day, while refining capacity was 1.884 million b/d. Canada, especially Quebec and Atlantic Canada, is a net product exporter with product exports of 25.1 billion litres exceeding product imports of 14.1 billion litres. The refining industry contributed $5.4 billion to Canadian gross domestic product in 2016 and made investment of $1.7 billion. It employed more than 117,000 people in retail (>82,000), distribution (>15,000) and refining (>19,000). The refining industry has reduced its CO_2 emissions by 15% since 1990 and its energy consumption by 22% since 2008, at a time when fuel quality standards have become increasingly stringent. CFA members have invested over $11 billion since 2000 to improve the environmental performance of their refineries and fuels, with $5 billion alone going to sharply reduce the sulphur content of gasoline and diesel (http://www.canadianfuels.ca/website/media/PDF/Industry%20Reports%20and%20Presentations/Sector-Performance-Report-2017EN_Final.pdf, Canada's Refining Industry 2017 Sector Performance Report).

Just Add Energy and Fill the Dominion with EVs from Sea to Shining Sea

Quebec-based AddÉnergie plans to increase its electric vehicle (EV) charging network, Canada's largest, from 4,000 stations including 150 fast chargers, to 6,300 public and semi-public stations including 300 fast chargers by early 2019. The increase is necessary to support the growth in sales of longer-range EVs. New cars will have double the autonomy they have now, the firm will be doubling and tripling its fast-charging network, and there will be more inter-city travel by long-range EVs. AddÉnergie installed 3,000 home chargers this year and plans to have 12,000 units in place by early 2019. The firm says that about 11,000 EVs were sold in Canada in 2016 and this will increase to about 20,000 in 2017. According to Navigant Research, annual sales of EV chargers in Canada will grow from about 10,000 this year to 80,000 in 2026. Canadian EV sales will grow by 29% annually to about 140,000 in 2026 (Canadian Press, JWN).

Canadian Hearts Warming to Electric Vehicles

18% of Canadians want an electric vehicle for Christmas, the second-most popular vehicle choice, according to DesRosiers Automotive Consultants of Richmond Hill, Ontario. This was an improvement over the 11.3% who favoured this choice a year ago. For the fourth straight year, the most popular vehicle choice was an SUV, favoured by 23.8% of Canadians. The least popular vehicle choice was the minivan, favoured by only 5.6% of Canadians. The pickup truck was the choice of 13.3% and the exotic or sports car was the choice of 12.6%. The EV was the most popular vehicle choice in Quebec (25.1%) and British Columbia (21.3%). University-educated consumers were the most inclined towards the EV, cited by 21.7%, and high school graduates were the least inclined, cited by 14.5%.

A Nova Idea

Nova Chemicals plans to spend more than C$2 billion to build a new, 450,000-ton polyethylene plant in the Sarnia-Lambton region in southwestern Ontario and expand its existing ethylene cracker in Corunna by about 50%. The Ontario government is providing a $100 million grant toward the project. The new polyethylene plant will be Nova’s second facility to employ the company’s SCLAIRTECH technology. It will employ about 150 staff and begin production in late 2021. The Corunna cracker uses 100% natural gas liquids feedstock supplied from the giant Marcellus natural gas shale field. Nova is wholly owned by Mubadala Investment Co. of Abu Dhabi (Nova, *Sarnia Observer*).

Ontario Offers EV Incentives to Businesses

The Ontario government is now offering to businesses rebates of up to $75,000 on 50% of the price difference between an electric vehicle and an equivalent gasoline or diesel vehicle. Rebates of up to $30,000 on 30% of the price difference between new natural gas vehicles and an equivalent gasoline or diesel vehicle are also available. These rebates apply to any vehicle, including trucks (Global News).

Canadian Refineries Boost Crude Processing in Third Quarter to Highest in 4½ Years

Canadian refineries processed 1.805 million barrels a day of crude oil and equivalent in the third quarter of 2017, an increase of 7.7% from the same period in 2016 and the highest since the first quarter of 2013. Runs of conventional light crude grew by 1.7% and accounted for 52.8% of total runs, while those of conventional heavy crude declined by 3.3% and accounted for 11.8% of total runs. On the unconventional side, runs of synthetic light crude jumped by 26% and accounted for 28.6% of total runs, and runs of bitumen rose by 12.5% and accounted for 6.8% of total runs. Deliveries of domestic crude oil to Canadian refineries increased by 17%, while those of foreign crude oil fell by 7.1%, in the third quarter. As a result, the foreign import share of Canadian refinery crude receipts fell from 36.9% in the third quarter of 2016 to 31.8% in the third quarter of 2017, the lowest in just under two years. Ontario refineries took delivery of 340,000 b/d of crude oil and equivalent in the third quarter, unchanged from the same period a year earlier. Deliveries of domestic crude grew by 9.4%, while those of foreign crude dropped by 38%, pushing down the foreign import share of total crude deliveries from 19.8% in the third quarter of 2016 to 12.3% in the third quarter of 2017. All foreign crude imports were from the United States (Statistics Canada, Ministry of Energy).

Ontario Petroleum Product Sales Fall 1.3% in Third Quarter

Ontario petroleum product sales in the third quarter of 2017 totalled 9.315 billion litres, a decline of 1.3% from the same period in 2016. Sales of motor gasoline fell by 2.8% from a year earlier to 4.23 billion litres, but diesel sales grew by 7.8% to 1.97 billion litres and ultra-low-sulphur diesel sales zoomed by 12.5% to 1.11 billion litres. Sales of regular grade declined by 2.6% while those of the higher-octane grades dropped by 5.7%; regular's share of the gasoline market inched up to 91.7%. Ontario retail gasoline sales declined by 2.8% to 3.89 billion litres, or 91.8% of total gasoline sales including non-retail. In the first nine months of 2017, Ontario product sales declined by 1.1% to 26.2 billion litres, with gasoline sales edging down by 0.8% but diesel sales growing by 7.1%. In the third quarter, Canadian product sales grew by 3.8% to 28.1 billion litres, with gasoline sales edging up by 0.5% and diesel sales rising by 9.7%. Nine-month Canadian product sales rose by 2.0% to 79.2 billion litres (Statistics Canada, Ministry of Energy).

Gasoline Marketing Margins Hit Record Highs in 5 Ontario Cities in 2017

Regular unleaded gasoline marketing margins rose to record highs in Ottawa, Toronto, Hamilton, London and Timmins in 2017. Margins increased for the fifth straight year in Ottawa (to 8.0 cents per litre), Toronto (to 9.5 cents) and Hamilton (to 9.0 cents) and for the fourth straight year in London (to 8.9 cents). Timmins' margin increased from a three-year low to 13.4 cents. Windsor had the lowest margin, 4.0 cents, and North Bay had the next-lowest, 5.0 cents. Sault Ste. Marie's margin fell to a six-year low of 7.3 cents, Thunder Bay's declined slightly to a three-year low of 11.1 cents, and Sudbury's edged up to 7.4 cents. Windsor experienced seven weeks of negative margins during the year, including a streak of five such weeks culminating on April 10th when the pump price was 4.7 cents below the wholesale cost. Ottawa experienced two weeks of negative margins and Sault Ste. Marie and North Bay experienced three (the latter ending the year with a margin of -2.3 cents). Thunder Bay experienced the widest range of margins, from a low of 2.7 cents on April 3rd to a high of 22.3 cents on September 11th. Margins (pump price minus wholesale or rack price) are the amount available to the dealer to cover operating costs and provide a return on investment (Ministry of Energy).

Ontario Gasoline and Diesel Prices Rose to Three-Year Highs in 2017

The Ontario retail price of regular unleaded gasoline in 2017 increased by 13 cents from a seven-year low to 112.6 cents a litre, a three-year high. The average price gap between northern and southern Ontario narrowed for the second straight year, to 3.7 cents, the lowest since 2000. Windsor had the lowest average regular gasoline price for the fifth straight year. The Ontario diesel price increased by 26.4 cents from a seven-year low to 120.4 cents, a three-year high. North Bay had the lowest average diesel price in 2017, supplanting Ottawa. In December, the Ontario regular gasoline price fell from a 38-month high to 120.5 cents, but the diesel price rose for the fifth straight month, to 120.4 cents, the highest since November 2014.