



Price Forecast

September 30, 2016

Resource Evaluation & Advisory

Forecast commentary

Oil prices continue to limp along, as optimism about the market achieving supply-and-demand balance in the near future has been overshadowed by concerns about weakening demand growth and increased OPEC production. In addition, crude oil stockpiles in the United States have not been depleting at the same rate as last year, with volumes in this stockpile

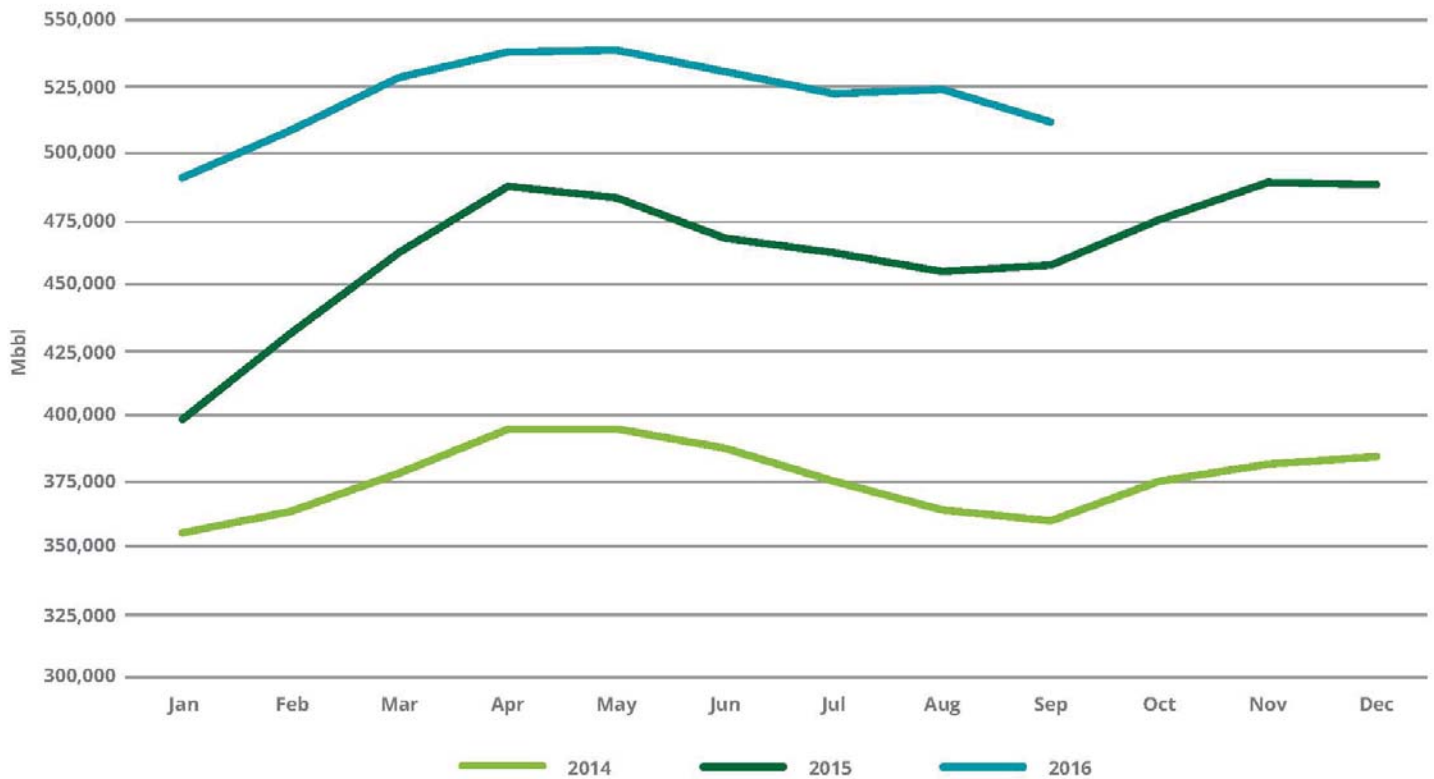
- currently more than 500 million barrels - enough to offset any under-supply in the North American market in the near-term.

Another factor applying downward pressure on crude prices is the recent increase in drilling activity in the U.S. After years of depressed prices that forced producers to find ways to reduce operating costs, these

lower expenditures, combined with a recent stabilization in price, have allowed some producers to resume drilling. Much of the increase in recent months have been seen in the oil-rich Permian Basin.

Historically high volumes from U.S. stockpiles and increased drilling in spite of low prices may act as a damper on price

Figure 1: U.S. commercial crude stockpiles



Source: US Energy Information Administration (EIA)

growth once the market balances out, which the EIA expects in Q3 2017. This balance could be achieved sooner, with the recent announcement that OPEC plans to limit production to 32.5-33 million barrels per day. With member production currently estimated at 33.2 million barrels per day, this cut would not be large enough to balance the current oversupply, estimated at 0.8 million barrels per day. There are also concerns about whether certain member countries will commit to this cut when details are finalized in November. These factors, along with the downward pressures outlined above, will likely cause oil prices to see only moderate growth in the short term. Our forecast anticipates a WTI price of \$47/bbl for the remainder of the year, with slight growth to \$51/bbl in 2017.

AECO gas prices have been very volatile this year, with highs reaching more than \$2.80/mmbtu and lows below \$0.50/mmbtu, with two major events contributing to this volatility. The first were the forest fires in Fort McMurray in May, which led to the shutdown of more than one million barrels per day of oil production. As natural gas is used to generate steam, the plant shutdowns caused a significant drop in demand, which led to a temporary oversupply causing prices to rapidly, but temporarily, drop by \$0.50/Mcf. The second source of volatility has been pipeline interruptions, which have prevented significant volumes from being moved out of Alberta. The resulting buildup of production has led to temporary oversupply in the Alberta market, seen most clearly in mid-August, when prices dropped to near record lows.

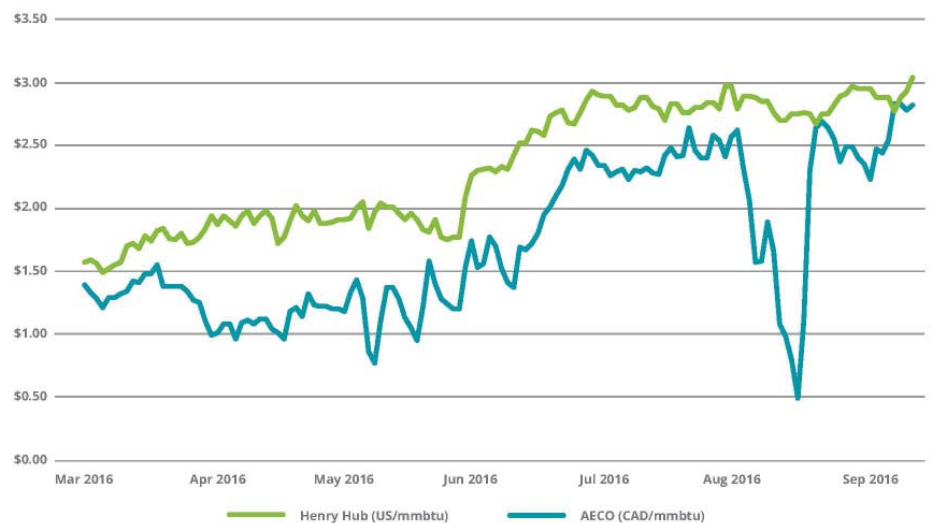
Natural gas prices in Western Canada are also impacted by volumes coming from the northeast United States. The Marcellus has been a prolific play that has managed to maintain production during prolonged low gas prices. Over the last three years, production in the Marcellus has increased from 12 Bcf/d to 18 Bcf/d. The large volume of gas has the potential to be preferentially imported into Eastern Canada over production from Alberta and British Columbia. This has been seen over the last

several years as the rise in production in the Marcellus has corresponded with a rising price differential between Dawn in Ontario and AECO. Some midstream companies are discussing the possibility of reducing tolls to ensure that Western Canadian gas is not backed out of the eastern Canadian market.

Natural gas prices in the rest of North America have begun to show some signs of optimism as demand has strengthened,

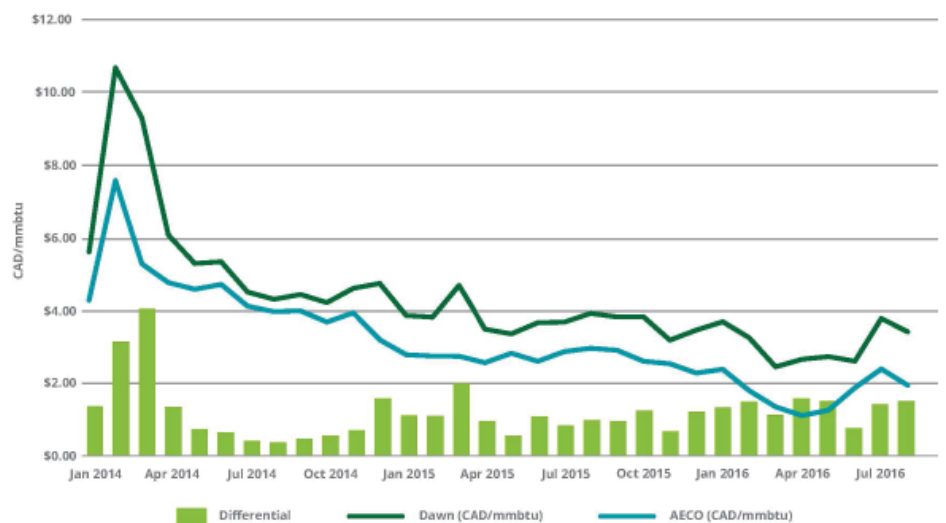
particularly for use in power generation, which is up around six per cent over last year in the U.S. Natural gas exports to Mexico have also continued to rise throughout 2016. However, high storage and strong production in spite of lower rig counts threaten to slow any price gains in the future. We have forecast a Henry Hub price of 2.90 \$US/Mcf for the remainder of 2016 and 3.00 \$US/Mcf for 2017.

Figure 2: Daily spot prices



Source: FirstEnergy Capital Corporation

Figure 3: Monthly natural gas prices



Source: FirstEnergy Capital Corporation



M&A and LMR

The mergers and acquisitions market has started to pick up over the last two quarters, with larger transactions occurring in both the oil and gas space. Gas transactions have mostly been centred on the liquids-rich deep basin and Montney assets, while the oil transactions have been varied, with Viking being one of the major targets. A recent change in regulations has been added by the Alberta government which requires a company to have a Liability Management Ratio (LMR) of greater than 2.0 immediately following the transfer of licences in a M&A transaction. This ratio

is a measure of the company's deemed liabilities versus their deemed asset value. This regulation may prove to be prohibitive to some transactions, as the government estimates that more than 65 per cent of Alberta licensees have an LMR of less than 2.0.

Deloitte has been advocating for a different approach to the abandonment liability issues that Alberta will face in the long term. An alternative to the current system is a Qualified Environmental Trust (QET), which has been used in other sectors

such as pipelines and nuclear waste. This includes segregated funds that are set aside for future abandonment and reclamation liabilities, which is managed by a Trustee, but would reduce the uncertainty around the priority claims in bankruptcy. This approach is not without drawbacks, but the upstream oil and gas industry needs leadership in this area to overcome the current obstacles.

Canadian domestic price forecast

Crude oil price and market demand forecast

Edmonton Par (Real \$)



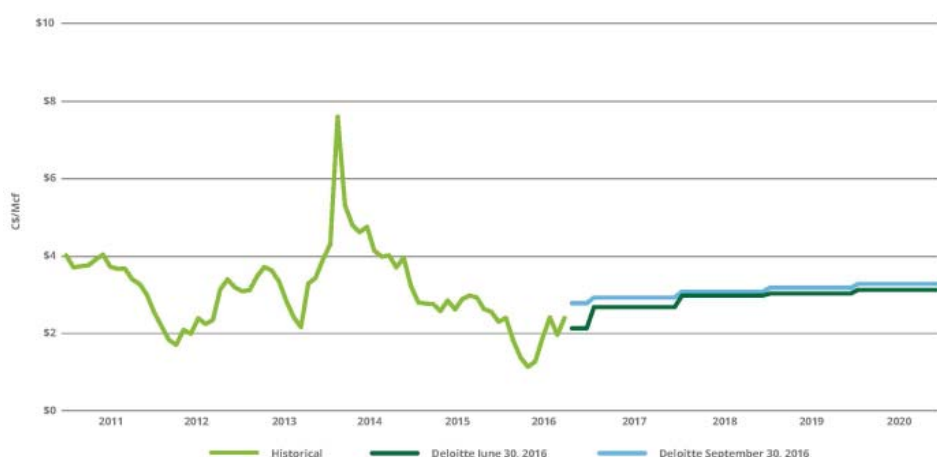
Forecast commentary

- Edmonton Par is forecast as a differential to WTI. This differential is based on Canadian Light Sweet Oil Index Futures which began trading in January 2014.
- The Edmonton crude oil price is used as the basis for the remaining Canadian crude reference points. Offsets are based on five-year historical averages with recent years weighted more heavily in the determination.

Year	WTI Cushing, OK (40° API) US\$/bbl Real	WTI Cushing, OK (40° API) US\$/bbl Current	Edmonton City Gate (40° API) C\$/bbl Real	Edmonton City Gate (40° API) C\$/bbl Current	WCS 20.5° API Hardisty C\$/bbl Current	Heavy Oil Hardisty (12° API) C\$/bbl Current	Cost Inflation Rate	CAD to USD exchange Rate
Historical								
2013	\$100.76	\$97.91	\$96.08	\$93.36	\$74.97	\$65.49	0.009	0.972
2014	\$96.15	\$93.26	\$96.91	\$94.00	\$81.06	\$73.70	0.019	0.906
2015	\$49.24	\$48.69	\$57.65	\$57.00	\$44.80	\$39.63	0.011	0.783
2016								
9 Months H	\$41.16	\$41.16	\$49.35	\$49.35	\$36.35	\$31.66	0.016	0.756
3 Months F	\$47.00	\$47.00	\$56.60	\$56.60	\$41.60	\$36.60	0.000	0.760
Avg.	\$42.62	\$42.62	\$51.16	\$51.16	\$37.66	\$32.90	-	0.757
Forecast								
2016	\$47.00	\$47.00	\$56.60	\$56.60	\$41.60	\$36.60	0.000	0.760
2017	\$51.00	\$52.00	\$59.50	\$60.70	\$45.40	\$40.30	0.020	0.790
2018	\$55.00	\$57.20	\$62.20	\$64.70	\$49.10	\$43.90	0.020	0.820
2019	\$60.00	\$63.65	\$66.65	\$70.75	\$54.80	\$49.50	0.020	0.840
2020	\$65.00	\$70.35	\$71.75	\$77.65	\$61.45	\$56.00	0.020	0.850
2021	\$70.00	\$77.30	\$77.65	\$85.75	\$69.15	\$63.65	0.020	0.850
2022	\$75.00	\$84.45	\$83.55	\$94.10	\$77.20	\$71.55	0.020	0.850
2023	\$75.00	\$86.15	\$83.55	\$95.95	\$78.75	\$73.00	0.020	0.850

Natural gas price and market demand forecast

AECO Natural Gas (Real \$)



Forecast commentary

- The AECO natural gas price is forecast based on historical differentials to Henry Hub and future contracts traded on the NGX based in Calgary.
- In contrast to other forecasts in the industry, Deloitte's long-term views consider two more years of growth in terms of real dollars.

Year	AB Ref. Avg. Price	AB AECO Avg. Price	AB AECO Avg. Price	B.C. Direct Station 2 Sales	NYMEX Henry Hub	NYMEX Henry Hub
	C\$/mcf Current	C\$/mcf Real	C\$/mcf Current	C\$/mcf Current	US\$/Mcf Real	US\$/Mcf Current
Historical						
2013	\$2.98	\$3.27	\$3.17	\$3.11	\$3.84	\$3.73
2014	\$4.22	\$4.64	\$4.50	\$4.16	\$4.53	\$4.39
2015	\$2.56	\$2.72	\$2.69	\$1.81	\$2.66	\$2.63
2016						
9 Months H	\$1.66	\$1.82	\$1.82	\$1.55	\$2.33	\$2.33
3 Months F	\$2.45	\$2.75	\$2.75	\$2.45	\$2.90	\$2.90
Avg.	\$1.86	\$2.05	\$2.05	\$1.77	\$2.48	\$2.48
Forecast						
2016	\$2.45	\$2.75	\$2.75	\$2.45	\$2.90	\$2.90
2017	\$2.75	\$2.90	\$2.95	\$2.55	\$3.00	\$3.05
2018	\$2.95	\$3.05	\$3.15	\$2.65	\$3.10	\$3.25
2019	\$3.15	\$3.15	\$3.35	\$2.80	\$3.25	\$3.45
2020	\$3.30	\$3.25	\$3.50	\$3.00	\$3.35	\$3.65
2021	\$3.50	\$3.35	\$3.70	\$3.15	\$3.45	\$3.80
2022	\$3.75	\$3.55	\$4.00	\$3.45	\$3.60	\$4.05
2023	\$4.00	\$3.70	\$4.25	\$3.70	\$3.75	\$4.30

International price forecast

Crude oil price and market demand forecast

Year	Avg. WTI Spot	Brent Spot (38.3° API with 0.37% sulphur content)	Gulf Coast ASC	Avg. OPEC Basket	Nigerian Bonny Light (33.4° API FOB)	Mexico Maya (21.8° API FOB)	Russia Urals (31.7° API FOB)
	US\$/bbl Real	US\$/bbl Real	US\$/bbl Real	US\$/bbl Real	US\$/bbl Real	US\$/bbl Real	US\$/bbl Rate
Forecast							
2016	\$47.00	\$48.00	\$43.00	\$45.00	\$48.40	\$40.00	\$46.50
2017	\$51.00	\$52.00	\$47.00	\$49.00	\$52.40	\$44.00	\$50.50
2018	\$55.00	\$56.00	\$51.00	\$53.00	\$56.40	\$48.00	\$54.50
2019	\$60.00	\$61.00	\$56.00	\$58.00	\$61.40	\$53.00	\$59.50
2020	\$65.00	\$66.00	\$61.00	\$63.00	\$66.40	\$58.00	\$64.50
2021	\$70.00	\$71.00	\$66.00	\$68.00	\$71.40	\$63.00	\$69.50
2022	\$75.00	\$76.00	\$71.00	\$73.00	\$76.40	\$68.00	\$74.50
2023	\$75.00	\$76.00	\$71.00	\$73.00	\$76.40	\$68.00	\$74.50

Forecast commentary

- International crude quality reference points for OPEC Basket, Venezuelan, Nigerian, UAE, Mexican, Chinese, Russian, and Indonesian crudes are now based on Brent in US dollars. For the purposes of this forecast Brent is receiving a premium to WTI on the world markets.
- Current forecasts for other Crude Oil
- reference points are based on historical trends to the WTI price.
- Brent, United Kingdom crude is based on 38.3°API with 0.37 per cent sulphur content. Brent blend is a light sweet North Sea crude oil that serves as an international benchmark grade.
- United States Gulf Coast Argus Sour Crude
- Index (ASCI) is a blend of offshore Gulf Coast oil from Mars, Poseidon, and Southern Green Canyon.
- OPEC Basket represents the current grouping of crude oil prices from the OPEC member countries.
- Russia Urals 31.7°API is the FOB delivered price to the Mediterranean destinations.

Natural gas price and market demand forecast

Year	USD to GBP Exchange	USD to GBP Exchange	NYMEX Henry Hub	Permian Waha	San Juan Ignacio	Gulf Coast (Onshore)	Louisiana East Texas	Rocky Mtn Opal	UK NBP
	Rate	Rate	US\$/Mcf Real	US\$/Mcf Real	US\$/Mcf Real	US\$/Mcf Real	US\$/Mcf Real	US\$/Mcf Real	US\$/Mcf Real
Forecast									
2016	1.300	1.100	\$2.90	\$2.75	\$2.75	\$2.80	\$2.80	\$2.70	\$4.80
2017	1.300	1.100	\$3.00	\$2.85	\$2.85	\$2.90	\$2.90	\$2.80	\$5.00
2018	1.300	1.100	\$3.10	\$2.95	\$2.95	\$3.00	\$3.00	\$2.90	\$5.10
2019	1.300	1.100	\$3.25	\$3.10	\$3.10	\$3.15	\$3.15	\$3.05	\$5.25
2020	1.300	1.100	\$3.35	\$3.20	\$3.20	\$3.25	\$3.25	\$3.15	\$5.35
2021	1.300	1.100	\$3.45	\$3.30	\$3.30	\$3.35	\$3.35	\$3.25	\$5.45
2022	1.300	1.100	\$3.60	\$3.45	\$3.45	\$3.50	\$3.50	\$3.40	\$5.60
2023	1.300	1.100	\$3.75	\$3.60	\$3.60	\$3.65	\$3.65	\$3.55	\$5.75

Forecast commentary

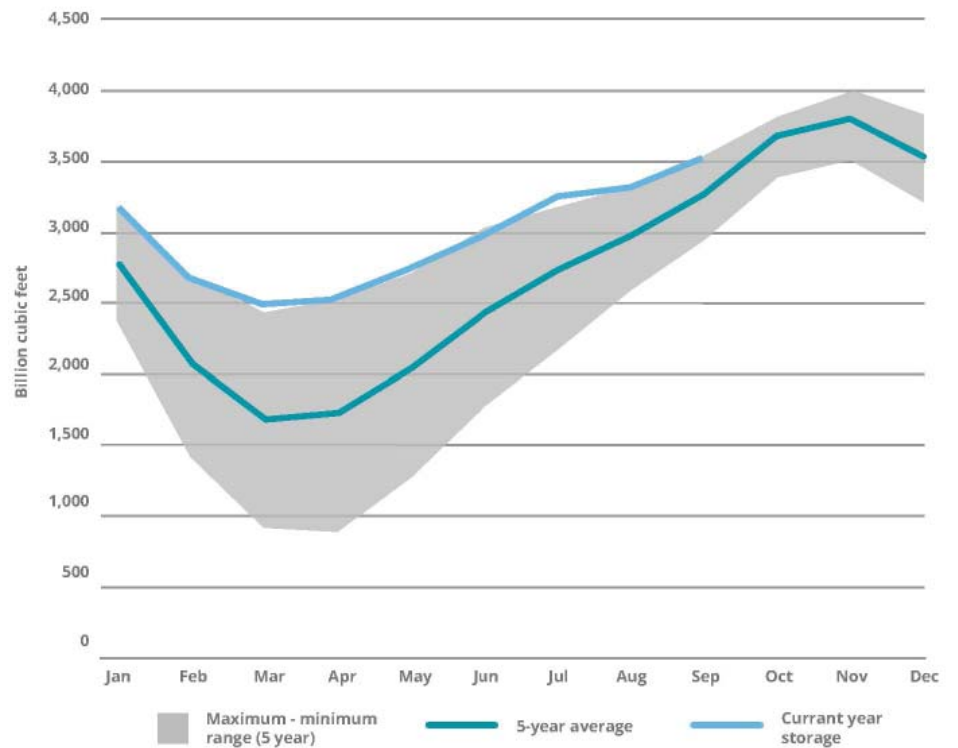
- The NYMEX price is based on delivery at the Henry Hub in Louisiana, the nexus of 16 intra- and interstate natural gas pipeline systems that draw supplies from the region's prolific gas deposits.

Global trends

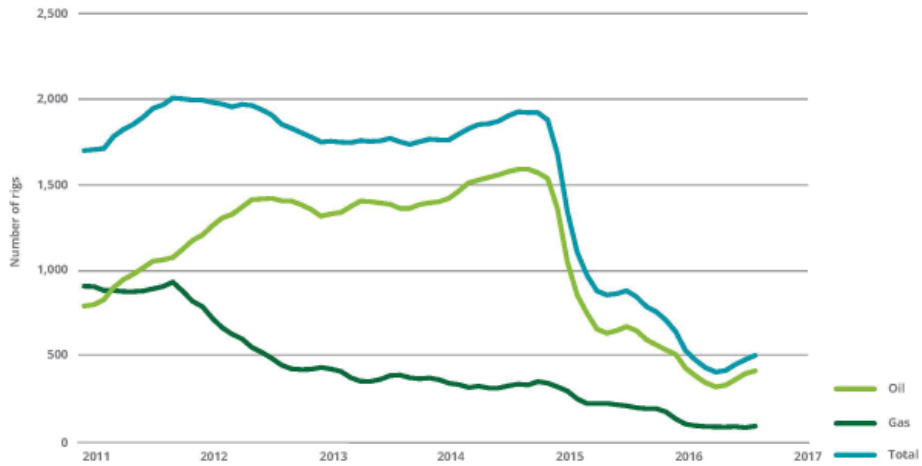
Storage

The United States natural gas storage levels remain at the five-year high. Storage levels are likely to remain high for some time, as forecasters are no longer expecting a strong La Niña this year which could have led to a colder winter.

Natural Gas



Source: Image adapted from US Energy Information Administration, Weekly Natural Gas Storage Report



Rigs

United States

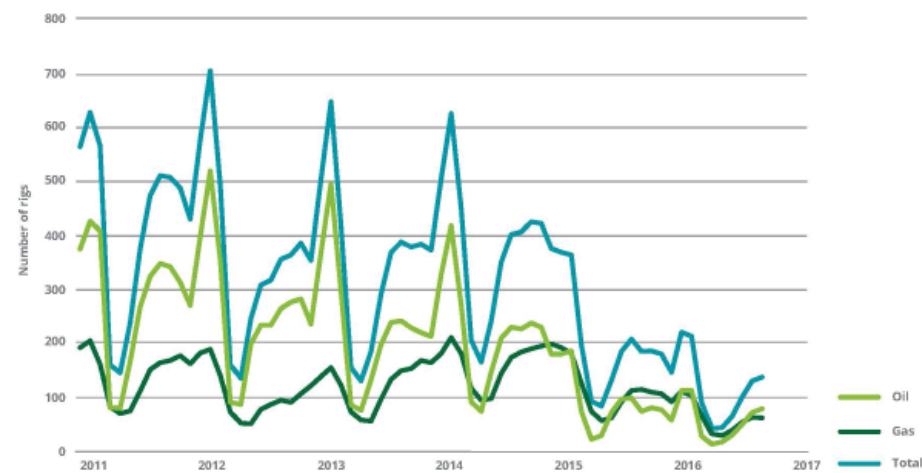
United States oil rig counts have begun to rise after hitting a low in May 2016. The increase over the last several months has been almost entirely due to increased drilling activity in the Permian Basin. Gas rig counts have remained relatively flat throughout 2016.

Canada

Canadian rig counts typically level off in August and stay relatively constant through to November. This year's rig count has levelled off at around 30 per cent less than in 2015, and 70 per cent less than in 2014.

International

Rig counts have levelled off in all regions of the world. The rapid drop in Latin America has finally stopped as rig counts have increased in each of the last two months. North American rig counts have begun to increase in the last several months while international rig counts have remained steady, leading to an increase in the percentage of the world's active rigs to nearly 40 per cent. This is still considerably less than the historic norm of 60-70 per cent seen over the last 40 years.



Sources: Data adapted from Baker Hughes Incorporated, International Rig Count

Canadian domestic price tables

Year				Crude Oil pricing						
	Price Inflation	Cost Inflation	CAD to USD Exchange	WTI Cushing, OK (40° API)	WTI Cushing, OK (40° API)	Edmonton City Gate (40° API)	Edmonton City Gate (40° API)	WCS (20.5° API) Hardisty	Bow River (25° API) Hardisty	Heavy Oil Hardisty (12° API)
	Rate	Rate	Rate	US\$/bbl Real	US\$/bbl Current	C\$/bbl Real	C\$/bbl Current	C\$/bbl Current	C\$/bbl Current	C\$/bbl Current
Historical										
2006	0.012	0.012	0.882	\$63.01	\$60.93	\$69.08	\$66.80	\$45.86	\$46.78	\$34.76
2007	0.021	0.021	0.935	\$75.70	\$72.32	\$80.65	\$77.05	\$52.90	\$53.87	\$39.76
2008	0.024	0.024	0.943	\$102.31	\$99.57	\$105.62	\$102.80	\$82.95	\$83.90	\$73.08
2009	0.003	0.003	0.880	\$62.95	\$61.65	\$67.49	\$66.10	\$58.66	\$59.80	\$54.40
2010	0.018	0.018	0.971	\$83.24	\$79.40	\$81.58	\$77.80	\$67.22	\$68.18	\$60.62
2011	0.029	0.029	1.012	\$99.24	\$94.88	\$99.92	\$95.54	\$77.12	\$78.42	\$69.60
2012	0.015	0.015	1.001	\$96.47	\$94.11	\$88.74	\$86.57	\$73.10	\$74.41	\$64.07
2013	0.009	0.009	0.972	\$100.76	\$97.91	\$96.08	\$93.36	\$74.97	\$76.29	\$65.49
2014	0.019	0.019	0.906	\$96.15	\$93.26	\$96.91	\$94.00	\$81.06	\$81.49	\$73.70
2015	0.011	0.011	0.783	\$49.24	\$48.69	\$57.65	\$57.00	\$44.80	\$45.23	\$39.63
2016										
3 Months H	0.016	0.016	0.756	\$41.16	\$41.16	\$49.35	\$49.35	\$36.35	\$36.87	\$31.66
9 Months F	0.000	0.000	0.760	\$47.00	\$47.00	\$56.60	\$56.60	\$41.60	\$43.60	\$36.60
Avg.	-	-	0.757	\$42.62	\$42.62	\$51.16	\$51.16	\$37.66	\$38.55	\$32.90
Forecast										
2016	0.000	0.000	0.760	\$47.00	\$47.00	\$56.60	\$56.60	\$41.60	\$43.60	\$36.60
2017	0.020	0.020	0.790	\$51.00	\$52.00	\$59.50	\$60.70	\$45.40	\$47.45	\$40.30
2018	0.020	0.020	0.820	\$55.00	\$57.20	\$62.20	\$64.70	\$49.10	\$51.20	\$43.90
2019	0.020	0.020	0.840	\$60.00	\$63.65	\$66.65	\$70.75	\$54.80	\$56.95	\$49.50
2020	0.020	0.020	0.850	\$65.00	\$70.35	\$71.75	\$77.65	\$61.45	\$63.60	\$56.00
2021	0.020	0.020	0.850	\$70.00	\$77.30	\$77.65	\$85.75	\$69.15	\$71.40	\$63.65
2022	0.020	0.020	0.850	\$75.00	\$84.45	\$83.55	\$94.10	\$77.20	\$79.45	\$71.55
2023	0.020	0.020	0.850	\$75.00	\$86.15	\$83.55	\$95.95	\$78.75	\$81.05	\$73.00
2024	0.020	0.020	0.850	\$75.00	\$87.85	\$83.55	\$97.90	\$80.30	\$82.65	\$74.45
2025	0.020	0.020	0.850	\$75.00	\$89.65	\$83.55	\$99.85	\$81.90	\$84.30	\$75.95
2026	0.020	0.020	0.850	\$75.00	\$91.40	\$83.55	\$101.85	\$83.55	\$86.00	\$77.45
2027	0.020	0.020	0.850	\$75.00	\$93.25	\$83.55	\$103.90	\$85.25	\$87.70	\$79.00
2028	0.020	0.020	0.850	\$75.00	\$95.10	\$83.55	\$105.95	\$86.95	\$89.45	\$80.60
2029	0.020	0.020	0.850	\$75.00	\$97.00	\$83.55	\$108.10	\$88.70	\$91.25	\$82.20
2030	0.020	0.020	0.850	\$75.00	\$98.95	\$83.55	\$110.25	\$90.45	\$93.10	\$83.85
2031	0.020	0.020	0.850	\$75.00	\$100.95	\$83.55	\$112.45	\$92.25	\$94.95	\$85.55
2032	0.020	0.020	0.850	\$75.00	\$102.95	\$83.55	\$114.70	\$94.10	\$96.85	\$87.25
2033	0.020	0.020	0.850	\$75.00	\$105.00	\$83.55	\$117.00	\$96.00	\$98.80	\$89.00
2034	0.020	0.020	0.850	\$75.00	\$107.10	\$83.55	\$119.35	\$97.90	\$100.75	\$90.75
2035	0.020	0.020	0.850	\$75.00	\$109.25	\$83.55	\$121.70	\$99.85	\$102.80	\$92.60
2035+	0.020	0.020	0.850	0.00%	2.00%	0.00%	2.00%	2.00%	2.00%	2.00%

Notes

- All prices are in Canadian dollars except WTI and NYMEX gas which are in U.S. dollars
- Edmonton city gate prices based on historical light oil par prices posted by the government of Alberta and Net Energy differential futures (40 Deg. API < 0.5% Sulphur)
- Real prices listed in 2016 dollars with no escalation considered

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Year	Natural Gas Liquids pricing Edmonton Par prices				Natural Gas pricing							Sulphur	
	Ethane	Propane	Butane	Pentanes + Condensate	AB Ref. Avg. Price	AB AECO Avg. Price	AB AECO Avg. Price	B.C. Direct Station 2 Sales	NYMEX Henry Hub	NYMEX Henry Hub	Alberta Plant	Gate	
	C\$/bbl Current	C\$/bbl Current	C\$/bbl Current	C\$/bbl Current	C\$/mcf Current	C\$/mcf Real	C\$/mcf Current	C\$/mcf Current	US\$/Mcf Real	US\$/Mcf Current	C\$/t	C\$/t Current	
Historical													
2006	\$18.00	\$42.37	\$52.31	\$69.64	\$6.09	\$6.63	\$6.41	\$6.22	\$6.43	\$6.22		\$12.83	
2007	\$18.42	\$49.75	\$59.35	\$81.60	\$6.20	\$6.75	\$6.45	\$6.40	\$7.30	\$6.98		\$38.02	
2008	\$22.59	\$56.96	\$83.54	\$109.77	\$7.88	\$8.38	\$8.16	\$8.20	\$9.11	\$8.86		\$303.83	
2009	\$11.61	\$34.62	\$56.21	\$69.49	\$3.85	\$4.04	\$3.96	\$4.17	\$4.03	\$3.95		(\$5.08)	
2010	\$11.53	\$45.19	\$68.79	\$84.02	\$3.76	\$4.20	\$4.01	\$4.01	\$4.60	\$4.39		\$56.94	
2011	\$10.30	\$52.41	\$86.98	\$105.24	\$3.46	\$3.80	\$3.63	\$3.34	\$4.18	\$4.00		\$101.60	
2012	\$6.73	\$30.80	\$75.47	\$99.67	\$2.25	\$2.45	\$2.39	\$2.29	\$2.82	\$2.75		\$126.81	
2013	\$8.68	\$38.54	\$77.44	\$103.52	\$2.98	\$3.27	\$3.17	\$3.11	\$3.84	\$3.73		\$62.17	
2014	\$12.46	\$38.38	\$57.08	\$100.90	\$4.22	\$4.64	\$4.50	\$4.16	\$4.53	\$4.39		\$88.99	
2015	\$7.49	\$0.76	\$25.12	\$52.96	\$2.56	\$2.72	\$2.69	\$1.81	\$2.66	\$2.63		\$107.45	
2016													
3 Months H	\$5.09	\$0.08	\$21.03	\$47.28	\$1.66	\$1.82	\$1.82	\$1.55	\$2.33	\$2.33		\$64.40	
9 Months F	\$7.70	\$5.65	\$22.65	\$56.60	\$2.45	\$2.75	\$2.75	\$2.45	\$2.90	\$2.90		\$70.00	
Avg.	\$5.74	\$1.48	\$21.43	\$49.61	\$1.86	\$2.05	\$2.05	\$1.77	\$2.48	\$2.48		\$65.80	
Forecast													
2016	\$7.70	\$5.65	\$22.65	\$56.60	\$2.45	\$2.75	\$2.75	\$2.45	\$2.90	\$2.90		\$70.00	
2017	\$8.25	\$12.15	\$30.35	\$60.70	\$2.75	\$2.90	\$2.95	\$2.55	\$3.00	\$3.05		\$71.40	
2018	\$8.90	\$19.40	\$38.80	\$64.70	\$2.95	\$3.05	\$3.15	\$2.65	\$3.10	\$3.25		\$72.85	
2019	\$9.35	\$21.20	\$42.45	\$70.75	\$3.15	\$3.15	\$3.35	\$2.80	\$3.25	\$3.45		\$74.30	
2020	\$9.85	\$23.35	\$46.60	\$77.65	\$3.30	\$3.25	\$3.50	\$3.00	\$3.35	\$3.65		\$75.75	
2021	\$10.40	\$25.75	\$51.45	\$85.75	\$3.50	\$3.35	\$3.70	\$3.15	\$3.45	\$3.80		\$77.30	
2022	\$11.20	\$28.20	\$56.50	\$94.10	\$3.75	\$3.55	\$4.00	\$3.45	\$3.60	\$4.05		\$78.85	
2023	\$11.90	\$28.75	\$57.60	\$95.95	\$4.00	\$3.70	\$4.25	\$3.70	\$3.75	\$4.30		\$80.40	
2024	\$12.75	\$29.35	\$58.75	\$97.90	\$4.35	\$3.90	\$4.55	\$4.00	\$3.90	\$4.55		\$82.00	
2025	\$13.40	\$29.95	\$59.95	\$99.85	\$4.55	\$4.00	\$4.80	\$4.20	\$4.00	\$4.80		\$83.65	
2026	\$13.85	\$30.55	\$61.15	\$101.85	\$4.70	\$4.05	\$4.95	\$4.35	\$4.05	\$4.95		\$85.35	
2027	\$14.30	\$31.15	\$62.35	\$103.90	\$4.85	\$4.10	\$5.10	\$4.50	\$4.10	\$5.10		\$87.05	
2028	\$14.60	\$31.75	\$63.60	\$105.95	\$4.95	\$4.10	\$5.20	\$4.55	\$4.10	\$5.20		\$88.80	
2029	\$14.90	\$32.40	\$64.85	\$108.10	\$5.05	\$4.10	\$5.30	\$4.65	\$4.10	\$5.30		\$90.55	
2030	\$15.15	\$33.05	\$66.15	\$110.25	\$5.15	\$4.10	\$5.40	\$4.75	\$4.10	\$5.40		\$92.35	
2031	\$15.50	\$33.70	\$67.50	\$112.45	\$5.25	\$4.10	\$5.50	\$4.85	\$4.10	\$5.50		\$94.20	
2032	\$15.80	\$34.40	\$68.85	\$114.70	\$5.35	\$4.10	\$5.65	\$4.95	\$4.10	\$5.65		\$96.10	
2033	\$16.10	\$35.10	\$70.20	\$117.00	\$5.45	\$4.10	\$5.75	\$5.05	\$4.10	\$5.75		\$98.00	
2034	\$16.40	\$35.80	\$71.65	\$119.35	\$5.55	\$4.10	\$5.85	\$5.15	\$4.10	\$5.85		\$100.00	
2035	\$16.75	\$36.50	\$73.05	\$121.70	\$5.70	\$4.10	\$5.95	\$5.25	\$4.10	\$5.95		\$102.00	
2035+	2.00%	2.00%	2.00%	2.00%	2.00%	0.00%	2.00%	2.00%	0.00%	2.00%		2.00%	

Notes

- All prices are in Canadian dollars except WTI and NYMEX gas which are in U.S. dollars
- Natural Gas Liquid prices are forecasted at Edmonton therefore an additional transportation cost must be included to plant gate sales point
- 1 Mcf is equivalent to 1 mmbtu
- Real prices listed in 2016 dollars with no escalation considered
- Alberta gas prices, except AECO, include an average cost of service to the plant gate

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Additional Crude Reference Prices

Year	Crude Oil pricing					Natural Gas
	Lt. Sour (35° API) Cromer, SK	MSO (31° API) Hardisty	Heavy Oil (12° API)	Synbit (AWB) 70% Bitumen 30% Cond. (21° API)	Delivered to Sarnia MSW	Ontario Dawn Ref. Point
	C\$/bbl	C\$/bbl	C\$/bbl	C\$/bbl	C\$/bbl	C\$/mcf
	Current	Current	Current	Current	Current	Current
Historical						
2006	\$60.04	\$57.13	\$34.76	\$45.22	\$68.77	\$7.70
2007	\$70.06	\$64.87	\$39.76	\$52.32	\$78.48	\$7.43
2008	\$95.28	\$92.40	\$73.08	\$84.08	\$109.21	\$9.88
2009	\$64.04	\$63.76	\$54.40	\$58.92	\$69.29	\$4.80
2010	\$76.40	\$72.32	\$60.62	\$67.64	\$81.48	\$4.79
2011	\$92.13	\$83.39	\$69.60	\$80.29	\$99.26	\$4.34
2012	\$84.27	\$77.53	\$64.07	\$74.75	\$90.36	\$3.11
2013	\$91.76	\$82.65	\$65.49	\$76.90	\$97.33	\$4.13
2014	\$92.91	\$89.39	\$73.70	\$81.86	\$98.19	\$5.76
2015	\$55.46	\$54.70	\$39.63	\$43.63	\$63.84	\$3.72
2016						
3 Months H	\$48.51	\$46.14	\$31.66	\$36.35	\$55.84	\$3.18
9 Months F	\$54.60	\$52.60	\$36.60	\$42.60	\$61.60	\$4.05
Avg.	\$50.03	\$47.75	\$32.90	\$37.91	\$57.28	\$3.40
Forecast						
2016	\$54.60	\$52.60	\$36.60	\$42.60	\$61.60	\$4.05
2017	\$58.65	\$56.60	\$40.30	\$46.40	\$65.80	\$4.15
2018	\$62.65	\$60.55	\$43.90	\$50.15	\$69.90	\$4.20
2019	\$68.60	\$66.50	\$49.50	\$55.85	\$76.05	\$4.35
2020	\$75.50	\$73.35	\$56.00	\$62.50	\$83.10	\$4.55
2021	\$83.50	\$81.30	\$63.65	\$70.25	\$91.25	\$4.75
2022	\$91.85	\$89.60	\$71.55	\$78.30	\$99.70	\$5.05
2023	\$93.70	\$91.40	\$73.00	\$79.90	\$101.70	\$5.35
2024	\$95.55	\$93.20	\$74.45	\$81.50	\$103.75	\$5.70
2025	\$97.45	\$95.05	\$75.95	\$83.10	\$105.85	\$5.90
2026	\$99.40	\$96.95	\$77.45	\$84.80	\$107.95	\$6.10
2027	\$101.40	\$98.90	\$79.00	\$86.50	\$110.10	\$6.30
2028	\$103.45	\$100.90	\$80.60	\$88.20	\$112.30	\$6.40
2029	\$105.50	\$102.90	\$82.20	\$89.95	\$114.55	\$6.55
2030	\$107.60	\$104.95	\$83.85	\$91.75	\$116.85	\$6.65
2031	\$109.75	\$107.05	\$85.55	\$93.60	\$119.20	\$6.80
2032	\$111.95	\$109.20	\$87.25	\$95.50	\$121.55	\$6.95
2033	\$114.20	\$111.40	\$89.00	\$97.40	\$124.00	\$7.05
2034	\$116.45	\$113.60	\$90.75	\$99.35	\$126.45	\$7.20
2035	\$118.80	\$115.90	\$92.60	\$101.30	\$129.00	\$7.35
2035+	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%

Notes

- All prices are in Canadian dollars except WTI and NYMEX gas which are in US dollars
- Edmonton city gate prices based on historical light oil par prices posted by the government of Alberta and Net Energy differential futures (40 Deg. API < 0.5% Sulphur)
- 1 Mcf is equivalent to 1 mmbtu
- Real prices listed in 2016 dollars with no escalation considered
- Sarnia price is Edmonton Sweet (MSW) delivered to Sarnia, Ontario
- Synbit is a combined bitumen (70%) and Condensate (30%) stream equivalent to the Acces Western Blend (AWB)

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International price tables

Year	Crude Oil pricing															
	Avg. WTI Spot	Alaskan North Slope	California Kern River	Louisiana Heavy Sweet	Louisiana Light Sweet	MARS Blend	Wyoming Sweet	Brent Spot	Gulf Coast ASC	Avg. OPEC Basket	Venezuelan Merrey	Nigerian Bonny Light	Arabia UAE Dubai Fetch	Mexico Maya	Russia Urals	Indonesia Minas
	US\$/bbl Real	US\$/bbl Real	US\$/bbl Real	US\$/bbl Real	US\$/bbl Real	US\$/bbl Real	US\$/bbl Real	US\$/bbl Real	US\$/bbl Real	US\$/bbl Real	US\$/bbl Real	US\$/bbl Real	US\$/bbl Real	US\$/bbl Real	US\$/bbl Real	US\$/bbl Real
Forecast																
2016	\$47.00	\$40.00	\$43.00	\$45.00	\$45.50	\$43.00	\$42.00	\$48.00	\$43.00	\$45.00	\$38.00	\$48.40	\$45.50	\$40.00	\$46.50	\$45.00
2017	\$51.00	\$44.00	\$47.00	\$49.00	\$49.50	\$47.00	\$46.00	\$52.00	\$47.00	\$49.00	\$42.00	\$52.40	\$49.50	\$44.00	\$50.50	\$49.00
2018	\$55.00	\$48.00	\$51.00	\$53.00	\$53.50	\$51.00	\$50.00	\$56.00	\$51.00	\$53.00	\$46.00	\$56.40	\$53.50	\$48.00	\$54.50	\$53.00
2019	\$60.00	\$53.00	\$56.00	\$58.00	\$58.50	\$56.00	\$55.00	\$61.00	\$56.00	\$58.00	\$51.00	\$61.40	\$58.50	\$53.00	\$59.50	\$58.00
2020	\$65.00	\$58.00	\$61.00	\$63.00	\$63.50	\$61.00	\$60.00	\$66.00	\$61.00	\$63.00	\$56.00	\$66.40	\$63.50	\$58.00	\$64.50	\$63.00
2021	\$70.00	\$63.00	\$66.00	\$68.00	\$68.50	\$66.00	\$65.00	\$71.00	\$66.00	\$68.00	\$61.00	\$71.40	\$68.50	\$63.00	\$69.50	\$68.00
2022	\$75.00	\$68.00	\$71.00	\$73.00	\$73.50	\$71.00	\$70.00	\$76.00	\$71.00	\$73.00	\$66.00	\$76.40	\$73.50	\$68.00	\$74.50	\$73.00
2023	\$75.00	\$68.00	\$71.00	\$73.00	\$73.50	\$71.00	\$70.00	\$76.00	\$71.00	\$73.00	\$66.00	\$76.40	\$73.50	\$68.00	\$74.50	\$73.00
2024	\$75.00	\$68.00	\$71.00	\$73.00	\$73.50	\$71.00	\$70.00	\$76.00	\$71.00	\$73.00	\$66.00	\$76.40	\$73.50	\$68.00	\$74.50	\$73.00
2025	\$75.00	\$68.00	\$71.00	\$73.00	\$73.50	\$71.00	\$70.00	\$76.00	\$71.00	\$73.00	\$66.00	\$76.40	\$73.50	\$68.00	\$74.50	\$73.00
2026	\$75.00	\$68.00	\$71.00	\$73.00	\$73.50	\$71.00	\$70.00	\$76.00	\$71.00	\$73.00	\$66.00	\$76.40	\$73.50	\$68.00	\$74.50	\$73.00
2027	\$75.00	\$68.00	\$71.00	\$73.00	\$73.50	\$71.00	\$70.00	\$76.00	\$71.00	\$73.00	\$66.00	\$76.40	\$73.50	\$68.00	\$74.50	\$73.00
2028	\$75.00	\$68.00	\$71.00	\$73.00	\$73.50	\$71.00	\$70.00	\$76.00	\$71.00	\$73.00	\$66.00	\$76.40	\$73.50	\$68.00	\$74.50	\$73.00
2029	\$75.00	\$68.00	\$71.00	\$73.00	\$73.50	\$71.00	\$70.00	\$76.00	\$71.00	\$73.00	\$66.00	\$76.40	\$73.50	\$68.00	\$74.50	\$73.00
2030	\$75.00	\$68.00	\$71.00	\$73.00	\$73.50	\$71.00	\$70.00	\$76.00	\$71.00	\$73.00	\$66.00	\$76.40	\$73.50	\$68.00	\$74.50	\$73.00
2031	\$75.00	\$68.00	\$71.00	\$73.00	\$73.50	\$71.00	\$70.00	\$76.00	\$71.00	\$73.00	\$66.00	\$76.40	\$73.50	\$68.00	\$74.50	\$73.00
2032	\$75.00	\$68.00	\$71.00	\$73.00	\$73.50	\$71.00	\$70.00	\$76.00	\$71.00	\$73.00	\$66.00	\$76.40	\$73.50	\$68.00	\$74.50	\$73.00
2033	\$75.00	\$68.00	\$71.00	\$73.00	\$73.50	\$71.00	\$70.00	\$76.00	\$71.00	\$73.00	\$66.00	\$76.40	\$73.50	\$68.00	\$74.50	\$73.00
2034	\$75.00	\$68.00	\$71.00	\$73.00	\$73.50	\$71.00	\$70.00	\$76.00	\$71.00	\$73.00	\$66.00	\$76.40	\$73.50	\$68.00	\$74.50	\$73.00
2035	\$75.00	\$68.00	\$71.00	\$73.00	\$73.50	\$71.00	\$70.00	\$76.00	\$71.00	\$73.00	\$66.00	\$76.40	\$73.50	\$68.00	\$74.50	\$73.00
2035+	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Notes

- Venezuelan Merrey replaced BCF-17 in the OPEC basket March 1, 2009.

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Year			Natural Gas pricing								Ethanol
	USD to GBP Exchange	USD to EUR Exchange	NYMEX Henry Hub	Permian Waha	San Juan Ignacio	Gulf Coast (onshore)	Louisiana East Texas	Rocky Mtn. Opal	UK NBP	India Domestic Gas	US CBOT Ethanol
	Rate	Rate	US\$/Mcf	US\$/Mcf	US\$/Mcf	US\$/Mcf	US\$/Mcf	US\$/Mcf	US\$/gal.	US\$/bbl	US\$/bbl
			Real	Real	Real	Real	Real	Real	Real	Real	Real
Forecast											
2016	1.300	1.100	\$2.90	\$2.75	\$2.75	\$2.80	\$2.80	\$2.70	\$4.80	\$2.50	\$1.45
2017	1.300	1.100	\$3.00	\$2.85	\$2.85	\$2.90	\$2.90	\$2.80	\$5.00	\$2.80	\$1.45
2018	1.300	1.100	\$3.10	\$2.95	\$2.95	\$3.00	\$3.00	\$2.90	\$5.10	\$2.95	\$1.45
2019	1.300	1.100	\$3.25	\$3.10	\$3.10	\$3.15	\$3.15	\$3.05	\$5.25	\$3.05	\$1.45
2020	1.300	1.100	\$3.35	\$3.20	\$3.20	\$3.25	\$3.25	\$3.15	\$5.35	\$3.20	\$1.45
2021	1.300	1.100	\$3.45	\$3.30	\$3.30	\$3.35	\$3.35	\$3.25	\$5.45	\$3.30	\$1.45
2022	1.300	1.100	\$3.60	\$3.45	\$3.45	\$3.50	\$3.50	\$3.40	\$5.60	\$3.40	\$1.45
2023	1.300	1.100	\$3.75	\$3.60	\$3.60	\$3.65	\$3.65	\$3.55	\$5.75	\$3.55	\$1.45
2024	1.300	1.100	\$3.90	\$3.75	\$3.75	\$3.80	\$3.80	\$3.70	\$5.90	\$3.70	\$1.45
2025	1.300	1.100	\$4.00	\$3.85	\$3.85	\$3.90	\$3.90	\$3.80	\$6.00	\$3.85	\$1.45
2026	1.300	1.100	\$4.05	\$3.90	\$3.90	\$3.95	\$3.95	\$3.85	\$6.05	\$3.95	\$1.45
2027	1.300	1.100	\$4.10	\$3.95	\$3.95	\$4.00	\$4.00	\$3.90	\$6.10	\$4.00	\$1.45
2028	1.300	1.100	\$4.10	\$3.95	\$3.95	\$4.00	\$4.00	\$3.90	\$6.10	\$4.05	\$1.45
2029	1.300	1.100	\$4.10	\$3.95	\$3.95	\$4.00	\$4.00	\$3.90	\$6.10	\$4.05	\$1.45
2030	1.300	1.100	\$4.10	\$3.95	\$3.95	\$4.00	\$4.00	\$3.90	\$6.10	\$4.05	\$1.45
2031	1.300	1.100	\$4.10	\$3.95	\$3.95	\$4.00	\$4.00	\$3.90	\$6.10	\$4.05	\$1.45
2032	1.300	1.100	\$4.10	\$3.95	\$3.95	\$4.00	\$4.00	\$3.90	\$6.10	\$4.05	\$1.45
2033	1.300	1.100	\$4.10	\$3.95	\$3.95	\$4.00	\$4.00	\$3.90	\$6.10	\$4.05	\$1.45
2034	1.300	1.100	\$4.10	\$3.95	\$3.95	\$4.00	\$4.00	\$3.90	\$6.10	\$4.05	\$1.45
2035	1.300	1.100	\$4.10	\$3.95	\$3.95	\$4.00	\$4.00	\$3.90	\$6.10	\$4.05	\$1.45
2035+	1.300	1.100	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

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Pricing philosophy

Price forecasting takes into account many variables that can influence future prices. Our experience tells us that we must continually review the forecasting tools we use to predict where oil and gas prices are heading. However, one constant influence on oil and gas pricing is the geo-political landscape. This impact is most accurately reflected in the financial industry's futures market for commodities, a main influence when Deloitte creates its price forecast. In other words, Deloitte looks to both the futures and the past when we create our forecasts.

This pricing philosophy challenges conventional thinking. The traditional view is based on the mean-reversion view of commodities presented by economists. Following this model, industry forecasts from 2000 to 2006 reflected a drop in prices over the long term from the current prices of the day – even though the futures market indicated otherwise. While the mean-reversion approach definitely has some merit, history has tended to reflect

that the futures market is a more accurate barometer.

Client focus

At Deloitte, we believe it is part of our role to help our clients in both the oil and gas sector and the investment community make better long-term business decisions by providing them with the most accurate and realistic information. We understand that sound analysis of changing trends can influence decisions on mergers, acquisitions, divestitures and investments. One way we ensure our price forecasts are as accurate as possible, given the continuing impact of near-term volatility, is to review our pricing assumptions on a quarterly basis.

Our process

In preparing the price forecast, Deloitte considers the current monthly trends, the actual price and trends for the year-to-date and the prior year actual prices. The base forecast for both oil and gas is based on New York Mercantile Exchange (NYMEX) futures in U.S. dollars.

Crude oil and natural gas forecasts are based on yearly variable factors, weighted to a higher percent for the current data and then reflect a higher percent to prior year historical data for the later years. Gas prices have been determined independently from oil prices, but still reflect the current competitive nature of the two fuels and historical oil-to-gas ratios for the latter years of the gas forecast.

Deloitte prepares our price and market forecasts based on information we collect from numerous government agencies, industry publications, oil refineries, natural gas marketers and industry trends. Inflation forecasts and exchange rates are also an integral part of the forecast.

These forecasts are Deloitte's best estimate of how the future will look, and while they are considered reasonable, changing market conditions or additional information may require alteration from the indicated effective date.

Glossary

Some of the words, phrases and acronyms we use frequently when talking about pricing are listed below:

AECO	Alberta Energy Company - historical name of a virtual trading hub on the NGX system
ANS	Alaska North Slope
ASCI	Argus Sour Crude Oil
AWB	Access Western Blend - Canadian condensate/bitumen mix
BR	Bow River Crude Oil
CAPP	Canadian Association of Petroleum Producers
CBOT	Chicago Board Of Trade
CGA	Canadian Gas Association
DCQ	Daily Contract Quantity
EIA	Energy Information Administration
FERC	US Federal Energy Regulatory Commission
FOB	Free on Board (shipper term)
IEA	International Energy Administration
LLB	Lloydminster Blend Crude Oil
LNG	Liquefied Natural Gas
MESC	Middle East Sour Crude
MSO	Mixed Sour Crude Oil
MSW	Canadian Light Sweet
NEB	Canadian National Energy Board
NIT	Nova Inventory Transfer
NYMEX	New York Mercantile Exchange
OECD	Organization of Economic Cooperation and Development
OPEC	Organization of Petroleum Exporting Countries
PADD	Petroleum Administration Defense District
USGC	US Gulf Coast
USWC	US West Coast
WCS	Western Canada Select Crude Oil
WTI	West Texas Intermediate
WTS	West Texas Sour

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