



Energy, oil, and gas price forecast

Energy M&A spotlight:

Buy with strategy, sell with purpose

March 31, 2023



Forecast commentary	1
Energy M&A spotlight: Buy with strategy, sell with purpose	6
Canadian domestic price forecast	8
International price forecast	10
Global trends	11
Canadian domestic price tables	13
International price tables	16
Pricing philosophy	18

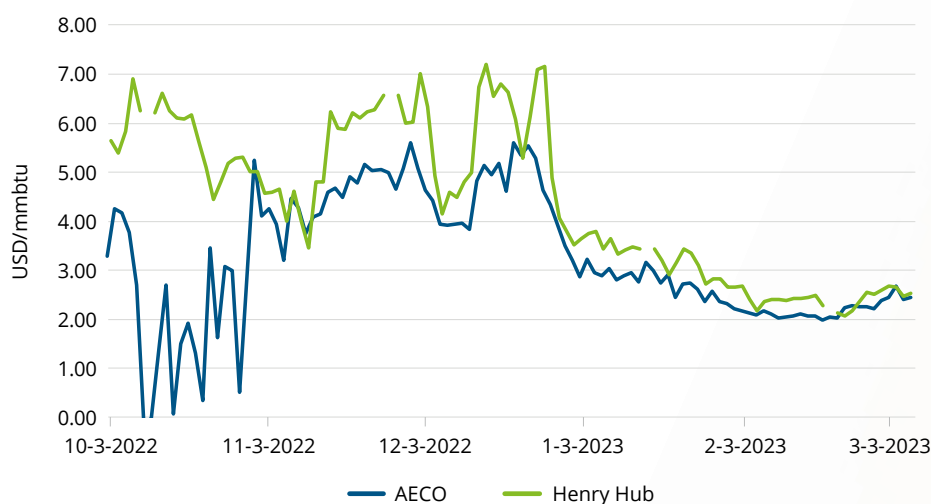
Forecast commentary

While oil tends to get a lot of focus in the industry, **natural gas** is becoming increasingly important as a lower-carbon fuel, as countries around the world start to prioritize sustainability, decarbonization, and energy security.

Yet, the recent North American natural gas story has been grim, and our last forecast did not anticipate the price change during the first quarter of 2023. There were signs in the last week

of 2022 that falling prices were taking hold due to warmer winter temperatures and rising storage levels. However, the limited trading of the year-end holiday season masked the warning signs and our Q4 2022 price forecast was off-base for Henry Hub and AECO prices. The next three-quarters of the year would have to overcompensate with extremely high prices to balance our full-year forecast. This outcome does not seem plausible.

North American natural gas prices



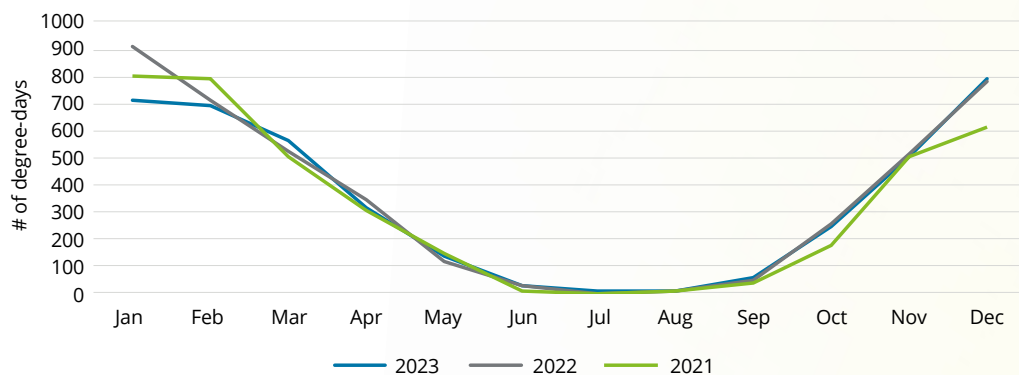
Source: EIA, DOB

The milder winter weather in many parts of the world was a major contributor to the price drop. As much of Europe braced for a harsh season, storage levels were shored up to above 80% of capacity to ensure enough supply for an energy

crisis. By early March, storage levels were still above the seasonal average by almost 40%.¹ In the United States, natural gas storage is at a five-year high, due to a warmer January and February compared to both 2021 and 2022.

¹ John Kemp, "With winter almost over, Europe's gas stocks are at seasonal record high," Reuters, March 3, 2023.

United States: Heating degree days



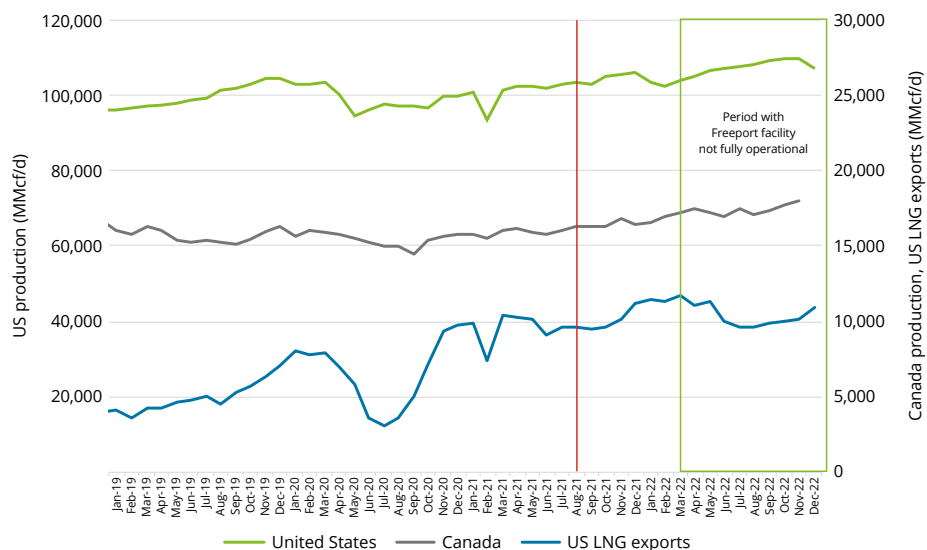
Source: EIA

The winter started cold, with heating degree days in December 2022 and January 2023 well above the same period the year before, which drove up expectations for prices in Q4 2022. (Heating degree day: a measurement used to quantify how cold the temperature was on a given day or during a period of days.) However, milder temperatures settled in after the holidays, lowering heating degree days across North America.²

In addition to the milder temperatures, production has steadily grown in both Canada and the United States, particularly as prices started gaining real momentum after Henry Hub breached US\$4/mmbtu in August 2021 (shown on the graph below with a red line). Liquefied natural gas (LNG) exports were increasing along with production, but the shut-in of the Freeport LNG facility after a fire in mid-2022 limited LNG exports from the US Gulf Coast.

² Allison Finch, "[AccuWeather's 2022-2023 Canada winter forecast](#)," AccuWeather, Oct. 19, 2022.

North American natural gas production



Source: CER, EIA

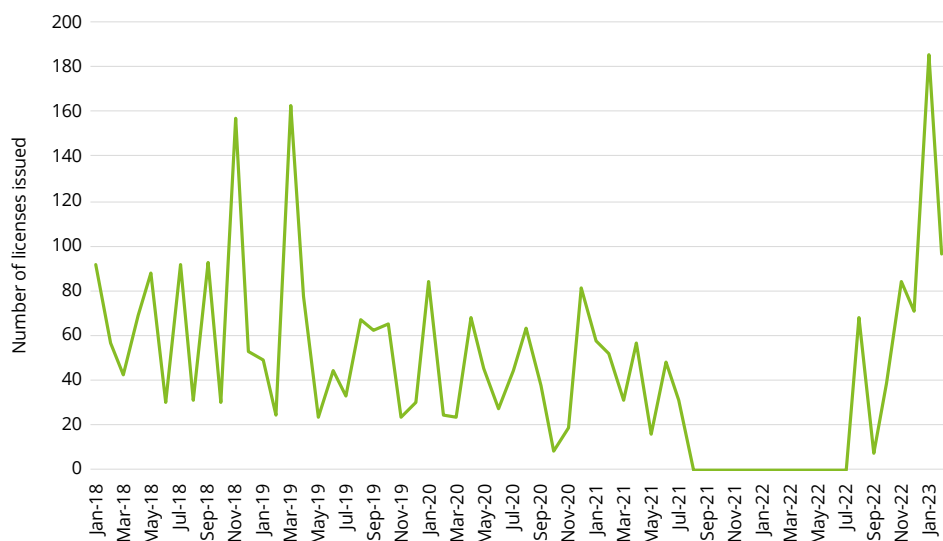
Even with increasing exports in recent months, as seen in Energy Information Administration (EIA) data, prices are not likely to rebound as quickly despite the storage situation. After 12 months of decent pricing and subsequent development, all it took was one facility to go offline and slightly softer global demand for the natural gas market to become oversupplied in North America—indicating that balancing supply and

demand won't be easy. The extreme market of 2022 was driven by a view that Europe needed North American natural gas to replace Russian supply. However, between Europe upholding its storage levels and renewables becoming beneficial for regions that don't have the capacity to continue importing natural gas, the demand needs to change for natural gas prices to return to 2021 levels.

In Canada, a significant portion of future natural gas development—to support feedstock, LNG Canada, and other LNG projects regionally and in the United States—will be concentrated in northeastern British Columbia. The agreement that the BC government reached with the Blueberry River First Nation (BRFN) in January 2023 demonstrates a clear pathway for industry development in the area. The agreement is in response to a June 2021 BC Supreme Court decision that found the province had infringed upon BRFN rights, thus ceasing activity until a consensus was reached.

Negotiations over the past 18 months developed into a collaborative approach to land management and natural resource development between the BRFN, the provincial government, and industry. The agreement emphasizes a limit to new activity in areas that are of high value to the BRFN and provides initial guidelines for land use development. Montney Production is expected to flourish, as seen by the recent increases in well licences issued by the BC Energy Regulator (BCER). Overall, 285 well licences from 13 unique operators were approved by BCER in the first two months of 2023, almost exclusively targeting the massive Montney Formation.

BC natural gas licences



Source: Daily Oil Bulletin

Oil

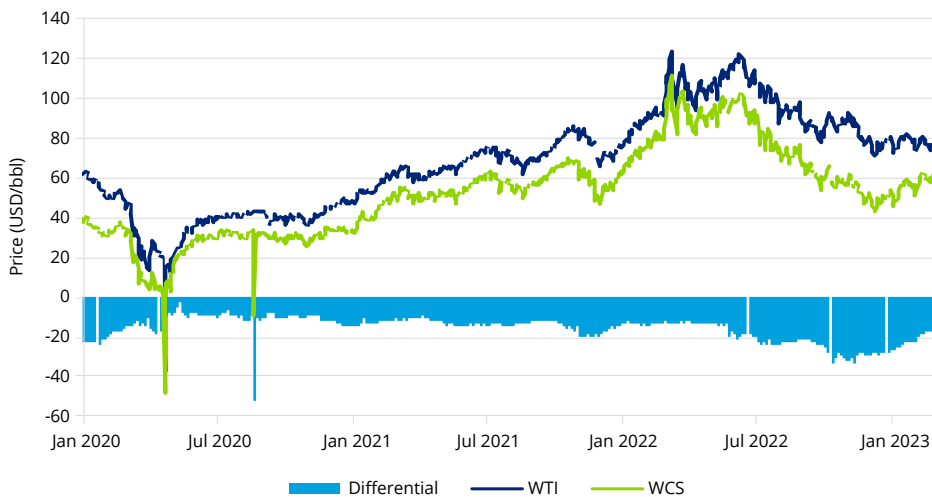
Compared to natural gas, **oil prices** have stabilized in the first quarter of 2023, after dropping in the fall. A delicate balance has emerged—demand growth has reappeared in China, OPEC is holding steady production quotas, and years of underinvestment and capital discipline is muting production growth. The European Union's embargo on Russian oil products took effect on February 5, resulting in an expectation that Russian exports will continue to remain below historical trends.

While light oil prices have remained stable throughout the last quarter,

WCS has seen significant price growth due to a reduced WCS to WTI differential. Releases from the US strategic reserve have ceased, which has opened capacity at US Gulf Coast refineries. Declining natural gas prices have also improved the economics of refining heavier crude, thus increasing the demand for Canadian oil. These factors have led to the differential narrowing from a high of over US\$30/bbl in November to around \$15/bbl in March.

Oil prices appear likely to remain stable throughout the spring, having stayed relatively consistent throughout Q1 in an ever-changing commodities market.

WCS-WTI differential



Source: EIA, DOB

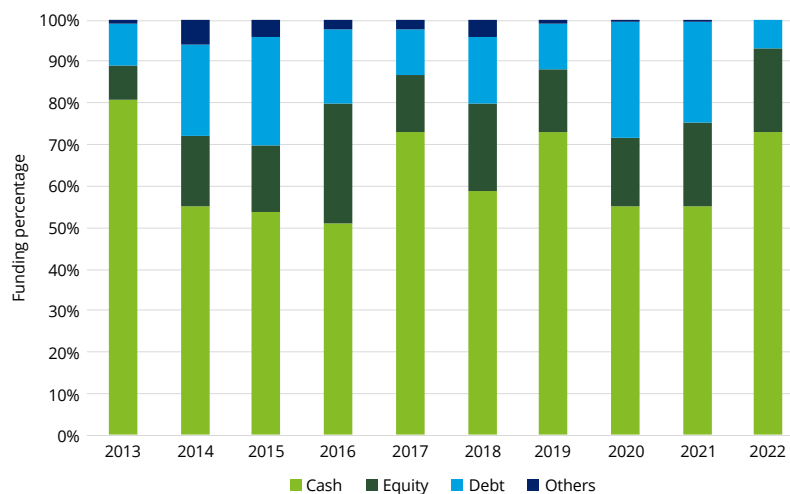
Energy M&A spotlight:

Buy with strategy, sell with purpose

Throughout 2022, global merger and acquisition (M&A) activity in the upstream oil and gas sector struggled as benchmark oil prices surged over US\$100 and the gap between buyer and seller valuations widened. As discussed in Evaluate Energy's "Global upstream M&A reaches just \$20 billion in Q4 2022," M&A spending slumped to 40% lower than the five-year average of Q4 activity. When deals were not achievable, organizations resorted to focusing on shareholder dividends, share buybacks, and deleveraging balance sheets. A few key factors that created headwinds for deals besides the commodity market were elevated free cash flows, shifting geopolitical priorities, and an increased focus on investments in energy transition. [Deloitte's outlook on oil and gas M&A in 2023](#), released in February, digs into these themes and trends in more detail for those who want a deeper dive on these topics.

In contrast to the distressed situations seen in recent years, the focus on reducing leverage created an impasse environment that hindered transactions. Sellers were not incentivized to sell at prices buyers were willing to pay, resulting in decreased activity across the sector in 2022. With reduced debt and record cash flows, operators are now well positioned to manage volatility in 2023, particularly if they maintain capital and operating discipline. Healthy balance sheets led to less reliance on external debt for deal financing, with only 7% of sector activity funded through debt in 2022. Funding deals through cash and equity are expected to continue in the foreseeable future, reducing the short-term effects of interest rate hikes on transaction value.

Funding for O&G M&A deals



Source: Deloitte, Oil and gas M&A outlook 2023: Pivoting for change

Corporate mergers and joint ventures are expected to continue to outweigh asset acquisitions as companies look to consolidate production and optimize operations. Equity-based transactions completed during such mergers and ventures represent less premium value for the deal, as they are based on inherent traded stock value at the corporate level. The scale of operations has enabled organizations to be competitive and withstand volatile price markets and cyclical energy usage, which will be ongoing themes to monitor in the coming year. As countries around the world work to mitigate energy security concerns and rising energy prices against

focus on financial metrics due to surging international stock exchange prices.

Despite the dip in 2022, over the next 10 years, strategic investment in the clean energy space is expected to grow as companies seek to meet their ESG targets and perform well on ESG scorecards. Public companies will likely struggle to balance the pressures of financial performance with the transition to new energies that have differing risk profiles around economic value.

Last year set the stage for major changes on the oil and gas landscape. As we look toward the future, the strategic drivers

With record free cash flows, the oil and gas sector invested in energy transition with buyers searching for joint ventures with clean technology and renewables.

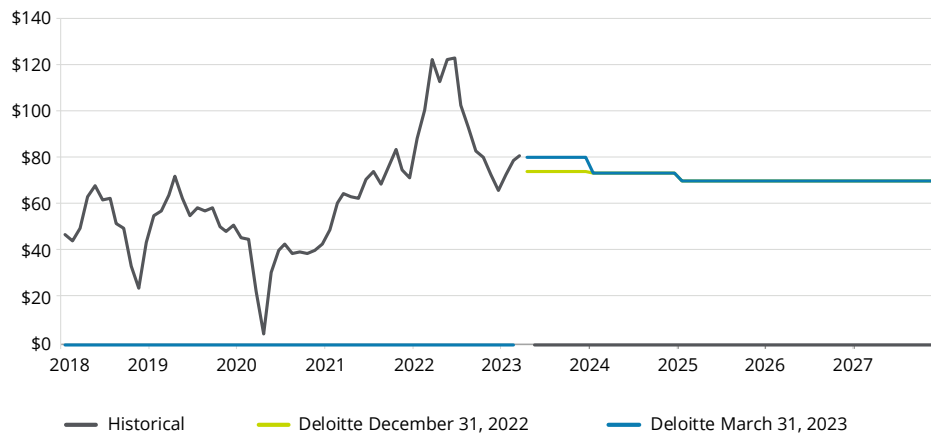
a backdrop of geopolitical tension and the war in Ukraine, we expect natural gas supply and LNG assets will be the focus of industry transactions. With record free cash flows, the oil and gas sector invested in energy transition with buyers searching for joint ventures with clean technology and renewables. In 2022, 15% of global oil and gas M&A deal value was attributed to the clean energy space, our 2023 outlook reports. Companies looked to bolster their environment, social, and governance (ESG) scores through partnerships with businesses operating with energy sources such as solar, wind, hydrogen, and biofuel. The value of ESG within transactions dwindled slightly in 2022 thanks to an increased

of M&A transactions in this sector are expected to shift as the world transitions into a different regulatory environment to meet emissions targets. Operational excellence in decarbonization, automation, and operational efficiencies, among other areas, will push companies to consolidate. In addition, organizations will continue to form new partnerships in the clean energy space as ESG is expected to be a growing driver for buyers looking to meet or exceed strategic goals.

While transaction cycles tied to commodity prices will persist in the industry, the evolving energy demand landscape necessitates a shift in transaction priorities from the past.

Canadian domestic price forecast

Crude oil price and market demand forecast Hardisty WCS (real \$)



Forecast comments

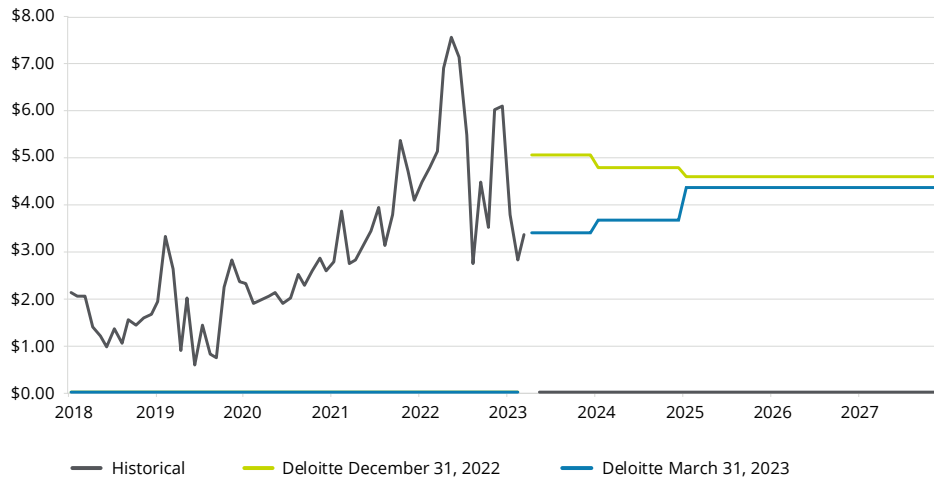
WCS is forecast as a differential to WTI. This differential is based on Western Canadian Select Crude Oil Futures.

Year	WTI Cushing, OK (40 API)	WTI Cushing, OK (40 API)	Edmonton City Gate (40 API)	Edmonton City Gate (40 API)	WCS Hardisty (20.5 API)	Heavy Oil Hardisty (12 API)	Cost Inflation	CAD to USD Exchange
	US\$/bbl Real	US\$/bbl Current	C\$/bbl Real	C\$/bbl Current	C\$/bbl Current	C\$/bbl Current	Rate	Rate
Historical								
2020	\$43.89	\$39.23	\$51.12	\$45.69	\$36.09	\$31.48	0.7%	0.746
2021	\$75.52	\$67.99	\$89.35	\$80.44	\$68.21	\$63.82	3.4%	0.798
2022	\$101.70	\$94.79	\$128.37	\$119.64	\$96.96	\$92.06	6.8%	0.769
2023								
3 mths H	\$77.45	\$77.45	\$100.88	\$100.88	\$77.53	\$70.60	5.3%	0.739
9 mths F	\$75.00	\$75.00	\$97.30	\$97.30	\$79.75	\$69.75	0.0%	0.740
Avg.	\$75.61	\$75.61	\$98.19	\$98.19	\$79.19	\$69.96	-	0.740
Forecast								
2023	\$75.00	\$75.00	\$97.30	\$97.30	\$79.75	\$69.75	0.0%	0.740
2024	\$72.50	\$74.70	\$91.35	\$94.10	\$75.55	\$68.35	3.0%	0.750
2025	\$70.00	\$73.55	\$88.00	\$92.45	\$73.55	\$68.80	2.0%	0.750
2026	\$70.00	\$75.00	\$88.00	\$94.30	\$75.00	\$70.20	2.0%	0.750
2027	\$70.00	\$76.50	\$88.00	\$96.20	\$76.50	\$71.60	2.0%	0.750
2028	\$70.00	\$78.05	\$88.00	\$98.10	\$78.05	\$73.05	2.0%	0.750
2029	\$70.00	\$79.60	\$88.00	\$100.05	\$79.60	\$74.50	2.0%	0.750
2030	\$70.00	\$81.20	\$88.00	\$102.10	\$81.20	\$76.00	2.0%	0.750

Canadian domestic price forecast

Natural gas price and market demand forecast

AECO natural gas (real \$)



Forecast comments

The AECO natural gas price is forecast based on historical differentials to Henry Hub and future contracts traded on the NGX in Calgary.

Year	AB Ref. Avg. Price	AB AECO Avg. Price	AB AECO Avg. Price	BC 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						
2020	\$2.00	\$2.52	\$2.25	\$2.20	\$2.28	\$2.04
2021	\$3.27	\$4.05	\$3.64	\$3.34	\$4.34	\$3.91
2022	\$5.05	\$5.75	\$5.36	\$4.56	\$6.88	\$6.42
2023						
3 mths H	\$4.33	\$3.32	\$3.32	\$3.01	\$2.73	\$2.73
9 mths F	\$3.10	\$3.40	\$3.40	\$3.10	\$3.50	\$3.50
Avg.	\$3.41	\$3.38	\$3.38	\$3.08	\$3.31	\$3.31
Forecast						
2023	\$3.10	\$3.40	\$3.40	\$3.10	\$3.50	\$3.50
2024	\$3.45	\$3.65	\$3.75	\$3.45	\$3.75	\$3.85
2025	\$4.25	\$4.35	\$4.55	\$4.25	\$4.25	\$4.45
2026	\$4.35	\$4.35	\$4.65	\$4.35	\$4.25	\$4.55
2027	\$4.45	\$4.35	\$4.75	\$4.45	\$4.25	\$4.65
2028	\$4.50	\$4.35	\$4.85	\$4.50	\$4.25	\$4.75
2029	\$4.60	\$4.35	\$4.95	\$4.60	\$4.25	\$4.85
2030	\$4.70	\$4.35	\$5.05	\$4.70	\$4.25	\$4.95

International price forecast

Crude oil price and market demand forecast

Year	Av. WTI Spot	Brent Spot (38.3 API with 0.37% sulphur content)	Gulf Coast ASCI/MARS	Avg. OPEC Basket	Nigerian Bonny Light (33.4 API FOB)	Mexico Maya (21.8 API FOB)	Russia Urals (31.7 API FOB)
	US\$/bbl Current	US\$/bbl Current	US\$/bbl Current	US\$/bbl Current	US\$/bbl Current	US\$/bbl Current	US\$/bbl Current
Forecast							
2023	\$75.00	\$79.00	\$72.75	\$78.00	\$80.00	\$69.00	\$49.00
2024	\$74.70	\$77.75	\$72.35	\$76.75	\$78.80	\$70.30	\$59.75
2025	\$73.55	\$76.70	\$71.20	\$75.65	\$77.75	\$69.10	\$66.20
2026	\$75.00	\$78.25	\$72.60	\$77.15	\$79.30	\$70.45	\$75.00
2027	\$76.50	\$79.80	\$74.05	\$78.70	\$80.90	\$71.85	\$76.50
2028	\$78.05	\$81.40	\$75.55	\$80.25	\$82.50	\$73.30	\$78.05
2029	\$79.60	\$83.00	\$77.05	\$81.90	\$84.15	\$74.75	\$79.60
2030	\$81.20	\$84.70	\$78.60	\$83.50	\$85.85	\$76.25	\$81.20

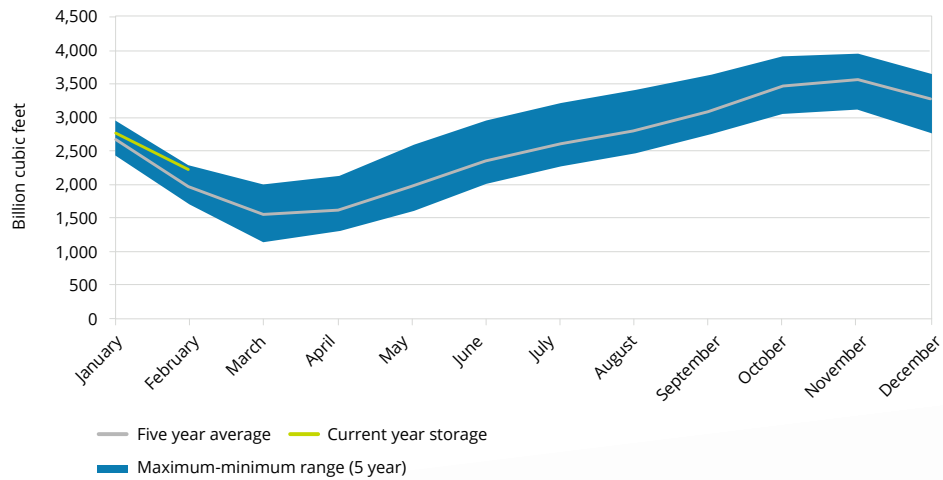
- International crude quality reference points for OPEC Basket, Venezuelan, Nigerian, UAE, Mexican, Chinese, Russian, and Indonesian crudes are now based on Brent in US dollars. For the purposes of this forecast Brent is receiving a premium to WTI on the world markets.
- Current forecasts for other Crude 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% 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 EUR Exchange	NYMEX Henry Hub	Permian Waha	San Juan Ignacio	Rocky Mountain Opal	UK NBP	India Domestic Gas
	Rate	Rate	US\$/Mcf Current	US\$/Mcf Current	US\$/Mcf Current	US\$/Mcf Current	US\$/Mcf Current	US\$/Mcf Current
Forecast								
2023	1.20	1.10	\$3.50	\$2.00	\$3.10	\$3.20	\$15.00	\$10.00
2024	1.25	1.10	\$3.85	\$2.30	\$3.45	\$3.55	\$17.50	\$6.45
2025	1.25	1.10	\$4.45	\$2.90	\$4.05	\$4.15	\$14.70	\$7.35
2026	1.25	1.10	\$4.55	\$2.95	\$4.15	\$4.25	\$12.30	\$6.70
2027	1.25	1.10	\$4.65	\$3.00	\$4.20	\$4.30	\$12.55	\$5.95
2028	1.25	1.10	\$4.75	\$3.05	\$4.30	\$4.40	\$12.80	\$6.10
2029	1.25	1.10	\$4.85	\$3.15	\$4.40	\$4.50	\$13.10	\$6.20
2030	1.25	1.10	\$4.95	\$3.20	\$4.45	\$4.60	\$13.35	\$6.30

Global trends

US natural gas storage



Storage

United States

Natural gas storage in the United States remains historically high coming out of the winter months.

Source: Baker Hughes

Rigs

United States

Oil and gas rig counts are no longer growing as commodity prices have declined throughout the last quarter.

Canada

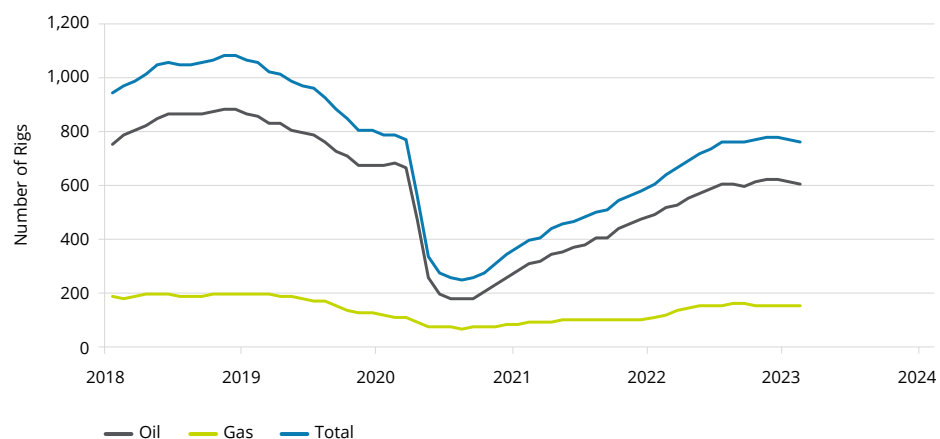
Oil and gas rig counts have continued to slowly grow over the last three years and are now at similar levels as seen in Q1 of 2019 and 2020.

International

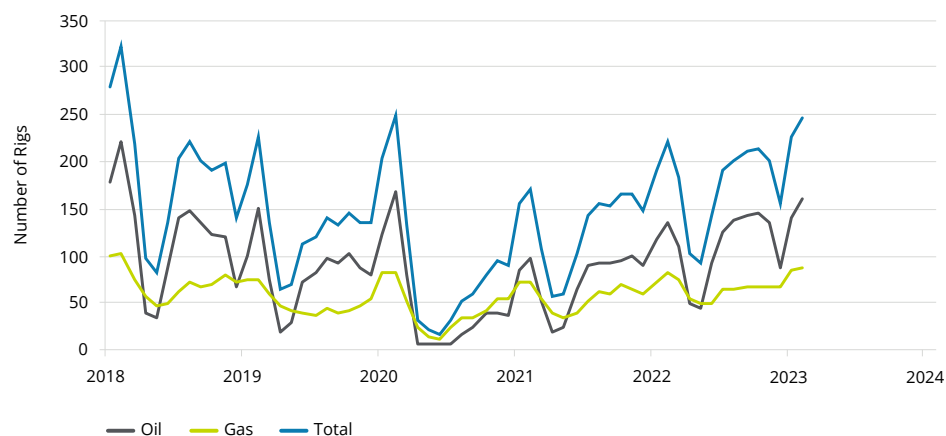
Strength in both oil and gas markets has led to rig counts increasing across much of the globe, with the most growth in recent months seen in the Middle East and Latin America. These trends may start to slow as prices have begun to weaken.

*Source: Baker Hughes

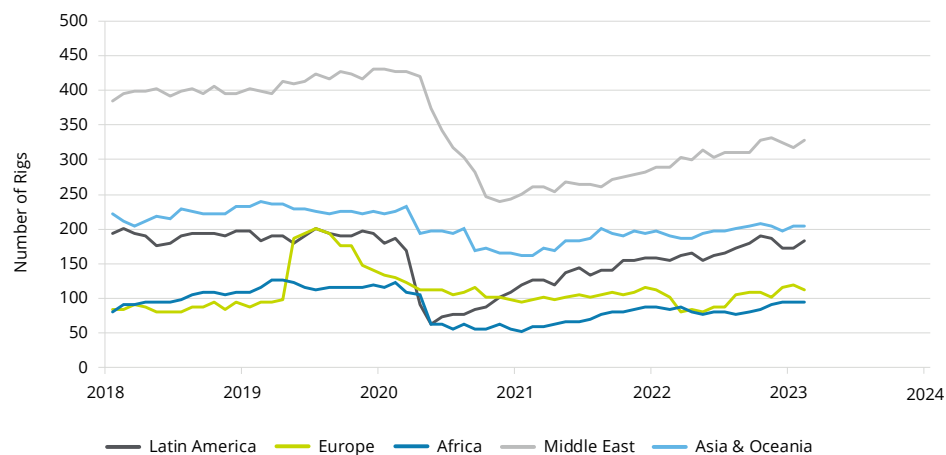
US*



Canada*



International*



Canadian domestic price tables

Crude Oil Pricing								
Year	Price Inflation	Cost Inflation	CAD to USD Exchange	WTI at Cushing Oklahoma	WTI at Cushing Oklahoma	Edmonton City Gate	Edmonton City Gate	WCS 20.5 Deg. API Hardisty
	Rate	Rate	Rate	US\$/bbl Real	US\$/bbl Current	C\$/bbl Real	C\$/bbl Current	C\$/bbl Current
Historical								
2013	0.9%	0.9%	0.972	\$122.67	\$97.91	\$116.97	\$93.36	\$74.97
2014	1.9%	1.9%	0.906	\$115.75	\$93.26	\$116.66	\$94.00	\$81.06
2015	1.1%	1.1%	0.783	\$59.28	\$48.69	\$69.39	\$57.00	\$44.80
2016	1.4%	1.4%	0.755	\$51.95	\$43.15	\$62.86	\$52.22	\$38.90
2017	1.6%	1.6%	0.771	\$60.37	\$50.88	\$73.70	\$62.12	\$49.51
2018	2.3%	2.3%	0.772	\$75.81	\$64.94	\$80.67	\$69.10	\$49.89
2019	1.9%	1.9%	0.754	\$65.02	\$56.98	\$78.75	\$69.02	\$57.43
2020	0.7%	0.7%	0.746	\$43.89	\$39.23	\$51.12	\$45.69	\$36.09
2021	3.4%	3.4%	0.798	\$75.52	\$67.99	\$89.35	\$80.44	\$68.21
2022	6.8%	6.8%	0.769	\$101.70	\$94.79	\$128.37	\$119.64	\$96.96
2023								
3 mths H	5.3%	5.3%	0.739	\$77.45	\$77.45	\$100.88	\$100.88	\$77.53
9 mths F	0.0%	0.0%	0.740	\$75.00	\$75.00	\$97.30	\$97.30	\$79.75
Avg.	N/A	N/A	0.740	\$75.61	\$75.61	\$98.19	\$98.19	\$79.19
Forecast								
2023	0.0%	0.0%	0.740	\$75.00	\$75.00	\$97.30	\$97.30	\$79.75
2024	3.0%	3.0%	0.750	\$72.50	\$74.70	\$91.35	\$94.10	\$75.55
2025	2.0%	2.0%	0.750	\$70.00	\$73.55	\$88.00	\$92.45	\$73.55
2026	2.0%	2.0%	0.750	\$70.00	\$75.00	\$88.00	\$94.30	\$75.00
2027	2.0%	2.0%	0.750	\$70.00	\$76.50	\$88.00	\$96.20	\$76.50
2028	2.0%	2.0%	0.750	\$70.00	\$78.05	\$88.00	\$98.10	\$78.05
2029	2.0%	2.0%	0.750	\$70.00	\$79.60	\$88.00	\$100.05	\$79.60
2030	2.0%	2.0%	0.750	\$70.00	\$81.20	\$88.00	\$102.10	\$81.20
2031	2.0%	2.0%	0.750	\$70.00	\$82.80	\$88.00	\$104.10	\$82.80
2032	2.0%	2.0%	0.750	\$70.00	\$84.50	\$88.00	\$106.20	\$84.50
2033	2.0%	2.0%	0.750	\$70.00	\$86.15	\$88.00	\$108.30	\$86.15
2034	2.0%	2.0%	0.750	\$70.00	\$87.90	\$88.00	\$110.50	\$87.90
2035	2.0%	2.0%	0.750	\$70.00	\$89.65	\$88.00	\$112.70	\$89.65
2036	2.0%	2.0%	0.750	\$70.00	\$91.45	\$88.00	\$114.95	\$91.45
2037	2.0%	2.0%	0.750	\$70.00	\$93.25	\$88.00	\$117.25	\$93.25
2038	2.0%	2.0%	0.750	\$70.00	\$95.15	\$88.00	\$119.60	\$95.15
2039	2.0%	2.0%	0.750	\$70.00	\$97.05	\$88.00	\$122.00	\$97.05
2040	2.0%	2.0%	0.750	\$70.00	\$99.00	\$88.00	\$124.45	\$99.00
2041	2.0%	2.0%	0.750	\$70.00	\$100.95	\$88.00	\$126.90	\$100.95
2042	2.0%	2.0%	0.750	\$70.00	\$103.00	\$88.00	\$129.45	\$103.00
2042+	2.0%	2.0%	0.750	0.0%	2.0%	0.0%	2.0%	2.0%

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 2023 dollars with no escalation considered

Disclaimer

No representation or warranty of any kind (whether expressed or implied) is given by Deloitte LLP as to the accuracy, completeness, currency or fitness for any purpose of this document. As such, this document does not constitute the giving of investment advice, nor a part of any advice on investment decisions. Accordingly, regardless of the form of action, whether in contract, tort or otherwise, and to the extent permitted by applicable law, Deloitte LLP accepts no liability of any kind and disclaims all responsibility for the consequences of any person acting or refraining from acting in reliance on this price forecast in whole or in part. **This price forecast is not for dissemination in the United States or for distribution to United States wire services.**

Canadian domestic price tables

Natural Gas Liquids Pricing Edmonton Par Prices					Natural Gas Pricing						Sulphur
Year	Ethane	Propane	Butane	Pentanes + Condensate	Alberta Reference Avg. Price	Alberta AECO Avg. Price	Alberta AECO Avg. Price	B.C. Direct Stn. 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\$/lt Current
Historical											
2013	\$8.68	\$38.54	\$77.44	\$103.52	\$2.98	\$3.98	\$3.17	\$3.11	\$4.67	\$3.73	\$62.17
2014	\$12.46	\$42.93	\$59.43	\$101.47	\$4.22	\$5.59	\$4.50	\$4.16	\$5.45	\$4.39	\$88.99
2015	\$7.49	\$5.35	\$33.70	\$55.15	\$2.56	\$3.28	\$2.69	\$1.81	\$3.20	\$2.63	\$107.45
2016	\$6.04	\$8.71	\$31.45	\$52.43	\$1.93	\$2.60	\$2.16	\$1.75	\$3.03	\$2.52	\$45.40
2017	\$6.11	\$27.92	\$40.98	\$63.65	\$2.13	\$2.60	\$2.19	\$1.56	\$3.54	\$2.99	\$41.85
2018	\$6.90	\$29.76	\$46.17	\$75.74	\$1.36	\$1.80	\$1.54	\$1.26	\$3.70	\$3.17	\$89.25
2019	\$5.00	\$15.82	\$21.40	\$67.57	\$1.48	\$2.07	\$1.81	\$1.02	\$2.93	\$2.57	\$37.54
2020	\$6.20	\$16.11	\$20.93	\$47.14	\$2.00	\$2.52	\$2.25	\$2.20	\$2.28	\$2.04	\$2.60
2021	\$10.08	\$45.46	\$40.28	\$82.91	\$3.27	\$4.05	\$3.64	\$3.34	\$4.34	\$3.91	\$69.73
2022	\$15.05	\$51.37	\$64.88	\$118.21	\$5.05	\$5.75	\$5.36	\$4.56	\$6.88	\$6.42	\$120.05
2023											
3 mths H	\$8.06	\$40.88	\$59.00	\$104.47	\$4.33	\$3.32	\$3.32	\$3.01	\$2.73	\$2.73	\$34.66
9 mths F	\$9.70	\$38.90	\$53.50	\$97.30	\$3.10	\$3.40	\$3.40	\$3.10	\$3.50	\$3.50	\$50.00
Avg.	\$9.29	\$39.40	\$54.87	\$99.09	\$3.41	\$3.38	\$3.38	\$3.08	\$3.31	\$3.31	\$46.17
Forecast											
2023	\$9.70	\$38.90	\$53.50	\$97.30	\$3.10	\$3.40	\$3.40	\$3.10	\$3.50	\$3.50	\$50.00
2024	\$10.70	\$37.65	\$51.75	\$94.10	\$3.45	\$3.65	\$3.75	\$3.45	\$3.75	\$3.85	\$51.50
2025	\$13.05	\$37.00	\$50.85	\$92.45	\$4.25	\$4.35	\$4.55	\$4.25	\$4.25	\$4.45	\$52.55
2026	\$13.30	\$37.70	\$51.85	\$94.30	\$4.35	\$4.35	\$4.65	\$4.35	\$4.25	\$4.55	\$53.60
2027	\$13.55	\$38.50	\$52.90	\$96.20	\$4.45	\$4.35	\$4.75	\$4.45	\$4.25	\$4.65	\$54.65
2028	\$13.80	\$39.25	\$53.95	\$98.10	\$4.50	\$4.35	\$4.85	\$4.50	\$4.25	\$4.75	\$55.75
2029	\$14.10	\$40.05	\$55.05	\$100.05	\$4.60	\$4.35	\$4.95	\$4.60	\$4.25	\$4.85	\$56.85
2030	\$14.40	\$40.85	\$56.15	\$102.10	\$4.70	\$4.35	\$5.05	\$4.70	\$4.25	\$4.95	\$58.00
2031	\$14.65	\$41.65	\$57.25	\$104.10	\$4.80	\$4.35	\$5.15	\$4.80	\$4.25	\$5.05	\$59.15
2032	\$14.95	\$42.50	\$58.40	\$106.20	\$4.90	\$4.35	\$5.25	\$4.90	\$4.25	\$5.15	\$60.35
2033	\$15.25	\$43.35	\$59.60	\$108.30	\$5.00	\$4.35	\$5.35	\$5.00	\$4.25	\$5.25	\$61.55
2034	\$15.55	\$44.20	\$60.75	\$110.50	\$5.10	\$4.35	\$5.45	\$5.10	\$4.25	\$5.35	\$62.80
2035	\$15.90	\$45.10	\$62.00	\$112.70	\$5.20	\$4.35	\$5.55	\$5.20	\$4.25	\$5.45	\$64.05
2036	\$16.20	\$46.00	\$63.20	\$114.95	\$5.30	\$4.35	\$5.70	\$5.30	\$4.25	\$5.55	\$65.30
2037	\$16.50	\$46.90	\$64.50	\$117.25	\$5.40	\$4.35	\$5.80	\$5.40	\$4.25	\$5.65	\$66.60
2038	\$16.85	\$47.85	\$65.80	\$119.60	\$5.50	\$4.35	\$5.90	\$5.50	\$4.25	\$5.80	\$67.95
2039	\$17.20	\$48.80	\$67.10	\$122.00	\$5.60	\$4.35	\$6.05	\$5.60	\$4.25	\$5.90	\$69.30
2040	\$17.55	\$49.75	\$68.45	\$124.45	\$5.75	\$4.35	\$6.15	\$5.75	\$4.25	\$6.00	\$70.70
2041	\$17.90	\$50.75	\$69.80	\$126.90	\$5.85	\$4.35	\$6.25	\$5.85	\$4.25	\$6.15	\$72.10
2042	\$18.25	\$51.80	\$71.20	\$129.45	\$5.95	\$4.35	\$6.40	\$5.95	\$4.25	\$6.25	\$73.55
2042+	2.0%	2.0%	2.0%	2.0%	2.0%	0.0%	2.0%	2.0%	0.0%	2.0%	2.0%

Notes

- Data sources include: EIA, DOB, NRC, Flint Hills Resources, Alberta Government
- 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)
- 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 2023 dollars with no escalation considered
- Alberta gas prices, except AECO, include an average cost of service to the plant gate
- NGL prices have been switched from a mix reference to a spec reference

Disclaimer

No representation or warranty of any kind (whether expressed or implied) is given by Deloitte LLP as to the accuracy, completeness, currency or fitness for any purpose of this document. As such, this document does not constitute the giving of investment advice, nor a part of any advice on investment decisions. Accordingly, regardless of the form of action, whether in contract, tort or otherwise, and to the extent permitted by applicable law, Deloitte LLP accepts no liability of any kind and disclaims all responsibility for the consequences of any person acting or refraining from acting in reliance on this price forecast in whole or in part. **This price forecast is not for dissemination in the United States or for distribution to United States wire services.**

Additional crude reference prices

Crude oil pricing			Natural gas pricing	
Year	Lt. Sour 35 Deg. API Cromer, SK	MSO 31 Deg. API Hardisty	Syncrude Sweet Premium 32.5 Deg. API	Ontario Dawn Reference Point
	C\$/bbl Current	C\$/bbl Current	C\$/bbl Current	C\$/mcf Current
Historical				
2013	\$91.76	\$82.65		\$4.13
2014	\$92.91	\$89.39		\$5.76
2015	\$55.46	\$54.70		\$3.72
2016	\$51.37	\$48.29		\$3.46
2017	\$62.06	\$58.16		\$3.97
2018	\$73.06	\$62.82		\$4.07
2019	\$69.68	\$65.72		\$3.22
2020	\$45.41	\$43.55		\$2.51
2021	\$80.08	\$76.58	\$83.62	\$4.55
2022	\$117.99	\$113.47	\$128.10	\$7.92
2023				
3 mths H	\$96.21	\$91.69	\$108.36	\$3.76
9 mths F	\$94.30	\$89.30	\$109.75	\$4.55
Avg.	\$94.78	\$89.90	\$109.40	\$4.35
Forecast				
2023	\$94.30	\$89.30	\$109.75	\$4.55
2024	\$92.05	\$87.90	\$101.30	\$4.95
2025	\$90.35	\$87.75	\$94.55	\$5.75
2026	\$92.15	\$89.50	\$96.45	\$5.85
2027	\$94.00	\$91.25	\$98.35	\$5.95
2028	\$95.90	\$93.10	\$100.35	\$6.10
2029	\$97.80	\$94.95	\$102.35	\$6.20
2030	\$99.75	\$96.85	\$104.40	\$6.30
2031	\$101.75	\$98.80	\$106.50	\$6.45
2032	\$103.80	\$100.75	\$108.60	\$6.60
2033	\$105.85	\$102.80	\$110.80	\$6.70
2034	\$108.00	\$104.85	\$113.00	\$6.85
2035	\$110.15	\$106.95	\$115.25	\$7.00
2036	\$112.35	\$109.10	\$117.55	\$7.10
2037	\$114.60	\$111.25	\$119.90	\$7.25
2038	\$116.90	\$113.50	\$122.30	\$7.40
2039	\$119.20	\$115.75	\$124.75	\$7.55
2040	\$121.60	\$118.05	\$127.25	\$7.70
2041	\$124.05	\$120.45	\$129.80	\$7.85
2042	\$126.50	\$122.85	\$132.40	\$8.00
2042+	2.0%	2.0%	2.0%	2.0%

Notes

- Data sources include: EIA, DOB, NRC, Flint Hills Resources, Alberta Government
- 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)
- 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 2023 dollars with no escalation considered
- Alberta gas prices, except AECO, include an average cost of service to the plant gate
- NGL prices have been switched from a mix reference to a spec reference

Disclaimer

No representation or warranty of any kind (whether expressed or implied) is given by Deloitte LLP as to the accuracy, completeness, currency or fitness for any purpose of this document. As such, this document does not constitute the giving of investment advice, nor a part of any advice on investment decisions. Accordingly, regardless of the form of action, whether in contract, tort or otherwise, and to the extent permitted by applicable law, Deloitte LLP accepts no liability of any kind and disclaims all responsibility for the consequences of any person acting or refraining from acting in reliance on this price forecast in whole or in part. **This price forecast is not for dissemination in the United States or for distribution to United States wire services.**

International price tables

Crude Oil Pricing															
Year	Average WTI Spot	Alaskan North Slope	California Midway- Sunset	Louisiana Light Sweet	Gulf Coast ASCI/ MARS	Wyoming Sweet	Brent Spot	Average OPEC Basket	Venezuelan Merey	Nigerian Bonny Light	Arabia UAE Dubai Feteh	UAE Murban	Mexico Maya	Russia Urals	Indonesia Minas
	US\$/bbl Current	US\$/bbl Current	US\$/bbl Current	US\$/bbl Current	US\$/bbl Current	US\$/bbl Current	US\$/bbl Current	US\$/bbl Current	US\$/bbl Current	US\$/bbl Current	US\$/bbl Current	US\$/bbl Current	US\$/bbl Current	US\$/bbl Current	US\$/bbl Current
Forecast															
2023	\$75.00	\$77.00	\$76.50	\$77.00	\$72.75	\$74.00	\$79.00	\$78.00	\$58.00	\$80.00	\$76.50	\$77.75	\$69.00	\$49.00	\$74.00
2024	\$74.70	\$76.75	\$76.20	\$76.75	\$72.35	\$73.65	\$77.75	\$76.75	\$58.20	\$78.80	\$75.20	\$76.50	\$70.30	\$59.75	\$75.45
2025	\$73.55	\$75.65	\$75.10	\$75.65	\$71.20	\$72.50	\$76.70	\$75.65	\$56.75	\$77.75	\$74.05	\$75.40	\$69.10	\$66.20	\$74.35
2026	\$75.00	\$77.15	\$76.60	\$77.15	\$72.60	\$73.95	\$78.25	\$77.15	\$57.85	\$79.30	\$75.55	\$76.90	\$70.45	\$75.00	\$75.80
2027	\$76.50	\$78.70	\$78.15	\$78.70	\$74.05	\$75.40	\$79.80	\$78.70	\$59.00	\$80.90	\$77.05	\$78.45	\$71.85	\$76.50	\$77.35
2028	\$78.05	\$80.25	\$79.70	\$80.25	\$75.55	\$76.95	\$81.40	\$80.25	\$60.20	\$82.50	\$78.60	\$80.00	\$73.30	\$78.05	\$78.90
2029	\$79.60	\$81.90	\$81.30	\$81.90	\$77.05	\$78.45	\$83.00	\$81.90	\$61.40	\$84.15	\$80.15	\$81.60	\$74.75	\$79.60	\$80.45
2030	\$81.20	\$83.50	\$82.95	\$83.50	\$78.60	\$80.05	\$84.70	\$83.50	\$62.65	\$85.85	\$81.80	\$83.25	\$76.25	\$81.20	\$82.05
2031	\$82.80	\$85.20	\$84.60	\$85.20	\$80.15	\$81.65	\$86.35	\$85.20	\$63.90	\$87.55	\$83.40	\$84.90	\$77.80	\$82.80	\$83.70
2032	\$84.50	\$86.90	\$86.30	\$86.90	\$81.75	\$83.25	\$88.10	\$86.90	\$65.15	\$89.30	\$85.10	\$86.60	\$79.35	\$84.50	\$85.40
2033	\$86.15	\$88.65	\$88.00	\$88.65	\$83.40	\$84.95	\$89.85	\$88.65	\$66.45	\$91.10	\$86.80	\$88.30	\$80.95	\$86.15	\$87.10
2034	\$87.90	\$90.40	\$89.75	\$90.40	\$85.05	\$86.65	\$91.65	\$90.40	\$67.80	\$92.90	\$88.50	\$90.10	\$82.55	\$87.90	\$88.85
2035	\$89.65	\$92.20	\$91.55	\$92.20	\$86.75	\$88.35	\$93.50	\$92.20	\$69.15	\$94.75	\$90.30	\$91.90	\$84.20	\$89.65	\$90.60
2036	\$91.45	\$94.05	\$93.40	\$94.05	\$88.50	\$90.15	\$95.35	\$94.05	\$70.55	\$96.65	\$92.10	\$93.75	\$85.90	\$91.45	\$92.40
2037	\$93.25	\$95.95	\$95.25	\$95.95	\$90.25	\$91.95	\$97.25	\$95.95	\$71.95	\$98.60	\$93.95	\$95.60	\$87.60	\$93.25	\$94.25
2038	\$95.15	\$97.85	\$97.15	\$97.85	\$92.10	\$93.80	\$99.20	\$97.85	\$73.40	\$100.55	\$95.80	\$97.50	\$89.35	\$95.15	\$96.15
2039	\$97.05	\$99.80	\$99.10	\$99.80	\$93.90	\$95.65	\$101.20	\$99.80	\$74.85	\$102.60	\$97.75	\$99.45	\$91.15	\$97.05	\$98.10
2040	\$99.00	\$101.80	\$101.10	\$101.80	\$95.80	\$97.55	\$103.20	\$101.80	\$76.35	\$104.65	\$99.70	\$101.45	\$92.95	\$99.00	\$100.05
2041	\$100.95	\$103.85	\$103.10	\$103.85	\$97.70	\$99.50	\$105.30	\$103.85	\$77.90	\$106.75	\$101.70	\$103.50	\$94.85	\$100.95	\$102.05
2042	\$103.00	\$105.90	\$105.20	\$105.90	\$99.65	\$101.50	\$107.40	\$105.90	\$79.45	\$108.85	\$103.70	\$105.55	\$96.70	\$103.00	\$104.10
2042+	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%

Notes

- Data sources include: EIA, OPEC, ARC Energy, Marex Spectron.
- Venezuelan Merey replaced BCF-17 in the OPEC basket March 1, 2009.

Disclaimer

No representation or warranty of any kind (whether expressed or implied) is given by Deloitte LLP as to the accuracy, completeness, currency or fitness for any purpose of this document. As such, this document does not constitute the giving of investment advice, nor a part of any advice on investment decisions. Accordingly, regardless of the form of action, whether in contract, tort or otherwise, and to the extent permitted by applicable law, Deloitte LLP accepts no liability of any kind and disclaims all responsibility for the consequences of any person acting or refraining from acting in reliance on this price forecast in whole or in part. **This price forecast is not for dissemination in the United States or for distribution to United States wire services.**

International price tables

Natural Gas pricing								
Year	USD to GBP	USD to EUR	NYMEX Henry Hub	Permian Waha	San Juan Ignacio	Rocky Mtn. Opal	UK NBP	India Domestic Gas
	Exchange rate	Exchange rate	US\$/Mcf Current	US\$/Mcf Current	US\$/Mcf Current	US\$/Mcf Current	US\$/Mcf Current	US\$/Mcf Current
Forecast								
2023	1.200	1.100	\$3.50	\$2.00	\$3.10	\$3.20	\$15.00	\$10.00
2024	1.250	1.100	\$3.85	\$2.30	\$3.45	\$3.55	\$17.50	\$6.45
2025	1.250	1.100	\$4.45	\$2.90	\$4.05	\$4.15	\$14.70	\$7.35
2026	1.250	1.100	\$4.55	\$2.95	\$4.15	\$4.25	\$12.30	\$6.70
2027	1.250	1.100	\$4.65	\$3.00	\$4.20	\$4.30	\$12.55	\$5.95
2028	1.250	1.100	\$4.75	\$3.05	\$4.30	\$4.40	\$12.80	\$6.10
2029	1.250	1.100	\$4.85	\$3.15	\$4.40	\$4.50	\$13.10	\$6.20
2030	1.250	1.100	\$4.95	\$3.20	\$4.45	\$4.60	\$13.35	\$6.30
2031	1.250	1.100	\$5.05	\$3.25	\$4.55	\$4.65	\$13.60	\$6.45
2032	1.250	1.100	\$5.15	\$3.30	\$4.65	\$4.75	\$13.90	\$6.60
2033	1.250	1.100	\$5.25	\$3.40	\$4.75	\$4.85	\$14.15	\$6.70
2034	1.250	1.100	\$5.35	\$3.45	\$4.85	\$4.95	\$14.45	\$6.85
2035	1.250	1.100	\$5.45	\$3.50	\$4.95	\$5.05	\$14.75	\$7.00
2036	1.250	1.100	\$5.55	\$3.60	\$5.05	\$5.15	\$15.00	\$7.10
2037	1.250	1.100	\$5.65	\$3.65	\$5.15	\$5.25	\$15.30	\$7.25
2038	1.250	1.100	\$5.80	\$3.75	\$5.25	\$5.35	\$15.65	\$7.40
2039	1.250	1.100	\$5.90	\$3.80	\$5.35	\$5.50	\$15.95	\$7.55
2040	1.250	1.100	\$6.00	\$3.90	\$5.45	\$5.60	\$16.25	\$7.70
2041	1.250	1.100	\$6.15	\$3.95	\$5.55	\$5.70	\$16.60	\$7.85
2042	1.250	1.100	\$6.25	\$4.05	\$5.65	\$5.80	\$16.90	\$8.00
2042+	1.250	1.100	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%

Notes

- Data sources include: EIA, OPEC, ARC Energy, Marex Spectron.
- Venezuelan Merey replaced BCF-17 in the OPEC basket March 1, 2009.

Disclaimer

No representation or warranty of any kind (whether expressed or implied) is given by Deloitte LLP as to the accuracy, completeness, currency or fitness for any purpose of this document. As such, this document does not constitute the giving of investment advice, nor a part of any advice on investment decisions. Accordingly, regardless of the form of action, whether in contract, tort or otherwise, and to the extent permitted by applicable law, Deloitte LLP accepts no liability of any kind and disclaims all responsibility for the consequences of any person acting or refraining from acting in reliance on this price forecast in whole or in part. **This price forecast is not for dissemination in the United States or for distribution to United States wire services.**

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

Contacts

Andrew Botterill

403-648-3239

abotterill@deloitte.ca

Lesley Mitchell

403-648-3215

lemitchell@deloitte.ca

Sarah Clowes

587-293-3201

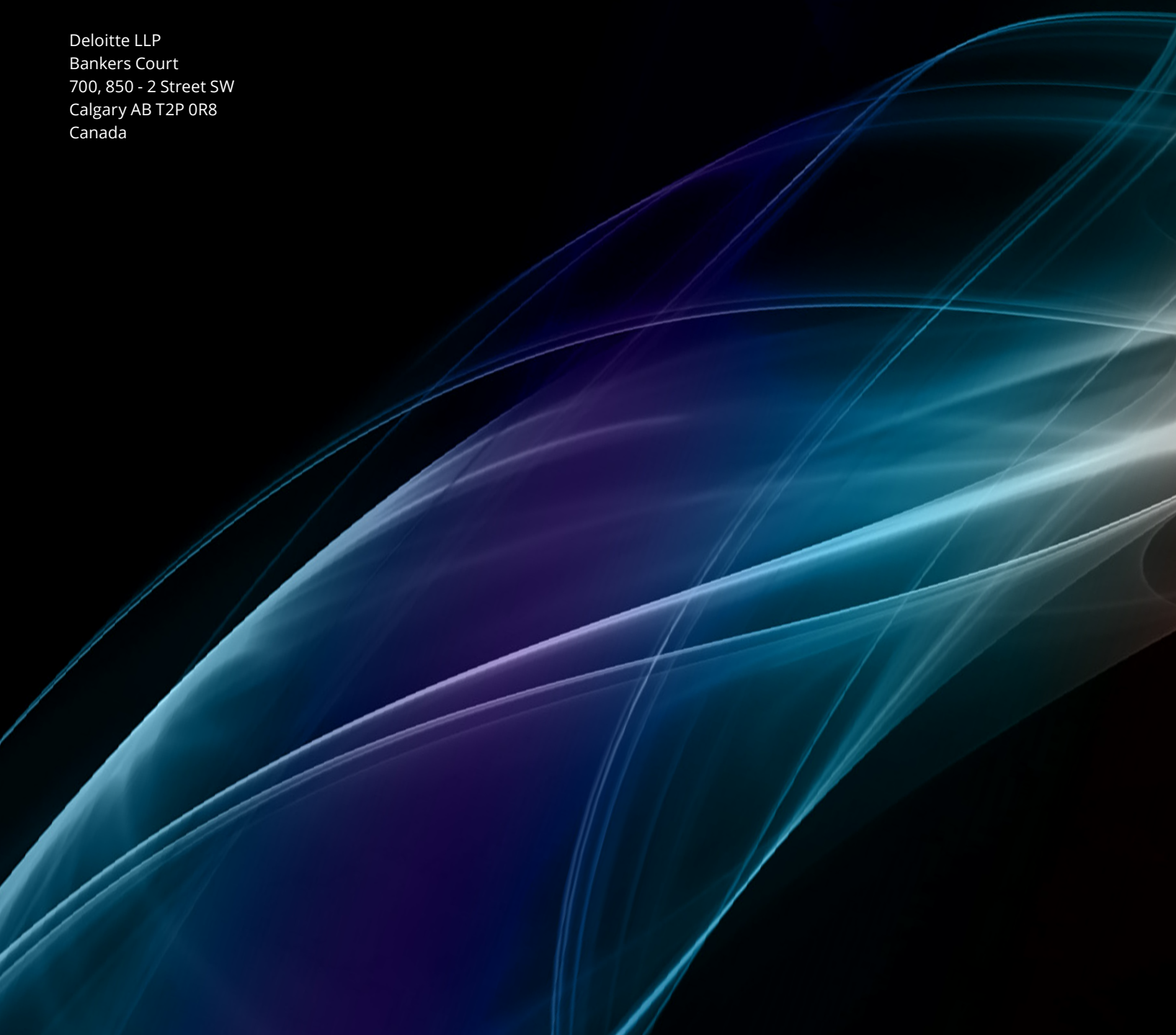
saclowes@deloitte.ca

Jonathan Listoe

403-648-3254

jlistoe@deloitte.ca

Deloitte LLP
Bankers Court
700, 850 - 2 Street SW
Calgary AB T2P 0R8
Canada

Abstract blue and purple wavy lines flowing across the bottom right of the page.



www.deloitte.ca/priceforecast

No representation or warranty of any kind (whether expressed or implied) is given by Deloitte LLP as to the accuracy, completeness, currency or fitness for any purpose of this document. As such, this document does not constitute the giving of investment advice, nor a part of any advice on investment decisions. Accordingly, regardless of the form of action, whether in contract, tort or otherwise, and to the extent permitted by applicable law, Deloitte LLP accepts no liability of any kind and disclaims all responsibility for the consequences of any person acting or refraining from acting in reliance on this price forecast in whole or in part.

This price forecast is not for dissemination in the United States or for distribution to United States wire services.

About Deloitte

Deloitte provides audit and assurance, consulting, financial advisory, risk advisory, tax, and related services to public and private clients spanning multiple industries. Deloitte serves four out of five Fortune Global 500® companies through a globally connected network of member firms in more than 150 countries and territories bringing world-class capabilities, insights, and service to address clients' most complex business challenges. Deloitte LLP, an Ontario limited liability partnership, is the Canadian member firm of Deloitte Touche Tohmatsu Limited. Deloitte refers to one or more of Deloitte Touche Tohmatsu Limited, a UK private company limited by guarantee, and its network of member firms, each of which is a legally separate and independent entity. Please see www.deloitte.com/about for a detailed description of the legal structure of Deloitte Touche Tohmatsu Limited and its member firms.

Our global Purpose is making an impact that matters. At Deloitte Canada, that translates into building a better future by accelerating and expanding access to knowledge. We believe we can achieve this Purpose by living our shared values to lead the way, serve with integrity, take care of each other, foster inclusion, and collaborate for measurable impact.

To learn more about Deloitte's approximately 330,000 professionals, over 11,000 of whom are part of the Canadian firm, please connect with us on [LinkedIn](#), [Twitter](#), [Instagram](#), or [Facebook](#).