

**Deloitte Resource Evaluation & Advisory**  
**Canadian Domestic Forecast**  
**Base Case Forecast Effective December 31 2017**

		Price Inflation Rate	Cost Inflation Rate	CAD to USD Exchange Rate	Crude Oil Pricing						Natural Gas Liquids Pricing Edmonton Par Prices				Natural Gas Pricing					Sulphur		
					WTI at Cushing Oklahoma US\$/bbl	WTI at Cushing Oklahoma US\$/bbl	Edmonton City Gate C\$/bbl	Edmonton City Gate C\$/bbl	WCS 20.5 Deg. API Hardisty C\$/bbl	Bow River 25 Deg. API Hardisty C\$/bbl	Heavy Oil 12 Deg. API Hardisty C\$/bbl	Ethane C\$/bbl	Propane C\$/bbl	Butane C\$/bbl	Pentanes + Condensate C\$/bbl	Alberta Reference Average Price C\$/mcf	Alberta AECO Average Price C\$/mcf	Alberta AECO Average Price C\$/mcf	B.C. Direct Sales Stn. 2 C\$/mcf	NYMEX Henry Hub US\$/Mcf	NYMEX Henry Hub US\$/Mcf	Alberta Plant Gate C\$/lt
					Real	Current	Real	Current	Current	Current	Current	Current	Current	Current	Current	Current	Real	Current	Current	Current	Real	Current
H	2007	2.4%	2.4%	0.997	\$96.23	\$91.69	\$94.44	\$89.98	\$50.19	\$50.95	\$31.47	\$18.35	\$60.24	\$77.79	\$98.37	\$6.17	\$6.79	\$6.47	\$6.75	\$7.46	\$7.11	\$143.08
i	2008	2.4%	2.4%	0.943	\$102.31	\$99.57	\$105.62	\$102.80	\$82.95	\$83.90	\$73.08	\$22.59	\$66.96	\$83.54	\$109.77	\$7.88	\$8.38	\$8.16	\$8.20	\$9.11	\$8.86	\$303.83
s	2009	0.3%	0.3%	0.880	\$62.95	\$61.65	\$67.49	\$66.10	\$58.66	\$59.80	\$54.40	\$11.61	\$34.62	\$56.21	\$69.49	\$3.85	\$4.04	\$3.96	\$4.17	\$4.03	\$3.95	(\$5.08)
t	2010	1.8%	1.8%	0.971	\$83.24	\$79.40	\$81.58	\$77.80	\$67.22	\$68.18	\$60.62	\$11.53	\$45.19	\$68.79	\$84.02	\$3.76	\$4.20	\$4.01	\$4.01	\$4.60	\$4.39	\$56.94
o	2011	2.9%	2.9%	1.012	\$99.24	\$94.88	\$99.92	\$95.54	\$77.12	\$78.42	\$69.60	\$10.30	\$52.41	\$86.98	\$105.24	\$3.46	\$3.80	\$3.63	\$3.34	\$4.18	\$4.00	\$101.60
r	2012	1.5%	1.5%	1.001	\$96.47	\$94.11	\$88.74	\$86.57	\$73.10	\$74.41	\$64.07	\$6.73	\$30.80	\$75.47	\$99.67	\$2.25	\$2.45	\$2.39	\$2.29	\$2.82	\$2.75	\$126.81
i	2013	0.9%	0.9%	0.972	\$100.76	\$97.91	\$96.08	\$93.36	\$74.97	\$76.29	\$65.49	\$8.68	\$38.54	\$77.44	\$103.52	\$2.98	\$3.27	\$3.17	\$3.11	\$3.84	\$3.73	\$62.17
c	2014	1.9%	1.9%	0.906	\$96.15	\$93.26	\$96.91	\$93.30	\$81.06	\$81.49	\$73.70	\$12.46	\$42.93	\$59.43	\$101.47	\$4.22	\$4.64	\$4.50	\$4.16	\$4.53	\$4.39	\$88.99
a	2015	1.1%	1.1%	0.783	\$49.96	\$48.69	\$58.49	\$57.00	\$44.80	\$45.23	\$39.63	\$7.49	\$5.35	\$33.70	\$55.15	\$2.56	\$2.76	\$2.69	\$1.81	\$2.70	\$2.63	\$107.45
l	2016	1.4%	1.4%	0.755	\$43.79	\$43.15	\$52.98	\$52.22	\$38.90	\$39.23	\$34.08	\$6.04	\$8.71	\$31.45	\$52.43	\$1.93	\$2.19	\$2.16	\$1.75	\$2.55	\$2.52	\$45.40
2	12 Mths H	1.6%	1.6%	0.771	\$50.84	\$50.84	\$62.11	\$62.11	\$50.85	\$51.17	\$45.03	\$6.06	\$27.56	\$40.96	\$62.85	\$2.19	\$2.16	\$2.16	\$1.55	\$2.99	\$2.99	\$35.21
0	0 Mths F	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
7	Avg.	N/A	N/A	0.771	\$50.84	\$50.84	\$62.11	\$62.11	\$50.85	\$51.17	\$45.03	\$6.06	\$27.56	\$40.96	\$62.85	\$2.19	\$2.16	\$2.16	\$1.55	\$2.99	\$2.99	\$35.21
F	2018	0.0%	0.0%	0.780	\$55.00	\$55.00	\$65.40	\$65.40	\$46.40	\$55.40	\$41.40	\$5.60	\$39.25	\$42.50	\$68.65	\$2.25	\$2.00	\$2.00	\$1.25	\$2.80	\$2.80	\$35.00
o	2019	2.0%	2.0%	0.800	\$57.50	\$58.65	\$66.90	\$68.25	\$50.90	\$55.00	\$45.80	\$6.45	\$37.55	\$44.35	\$71.65	\$2.55	\$2.25	\$2.30	\$1.75	\$2.90	\$2.95	\$35.70
r	2020	2.0%	2.0%	0.825	\$60.00	\$62.40	\$67.90	\$70.65	\$55.05	\$57.10	\$49.85	\$7.70	\$35.30	\$45.95	\$74.20	\$3.00	\$2.65	\$2.75	\$2.35	\$3.10	\$3.25	\$36.40
e	2021	2.0%	2.0%	0.850	\$65.00	\$69.00	\$71.75	\$76.15	\$60.20	\$62.35	\$57.05	\$8.35	\$34.30	\$49.50	\$79.95	\$3.25	\$2.80	\$2.95	\$2.55	\$3.30	\$3.50	\$37.15
c	2022	2.0%	2.0%	0.850	\$70.00	\$75.75	\$77.65	\$84.05	\$67.80	\$70.00	\$64.55	\$8.95	\$33.60	\$54.60	\$88.25	\$3.45	\$2.95	\$3.20	\$2.75	\$3.40	\$3.70	\$37.90
a	2023	2.0%	2.0%	0.850	\$70.00	\$77.30	\$77.65	\$85.75	\$69.15	\$71.40	\$65.85	\$9.60	\$34.30	\$55.70	\$90.05	\$3.70	\$3.10	\$3.40	\$3.00	\$3.55	\$3.90	\$38.65
s	2024	2.0%	2.0%	0.850	\$70.00	\$78.85	\$77.65	\$87.45	\$70.55	\$72.80	\$67.20	\$10.60	\$34.95	\$56.80	\$91.85	\$4.05	\$3.35	\$3.75	\$3.30	\$3.75	\$4.20	\$39.40
t	2025	2.0%	2.0%	0.850	\$70.00	\$80.40	\$77.65	\$89.20	\$71.95	\$74.25	\$68.50	\$11.45	\$35.65	\$57.95	\$93.70	\$4.35	\$3.55	\$4.10	\$3.60	\$3.90	\$4.50	\$40.20
	2026	2.0%	2.0%	0.850	\$70.00	\$82.00	\$77.65	\$91.00	\$73.40	\$75.75	\$69.90	\$11.85	\$36.40	\$59.10	\$95.55	\$4.50	\$3.60	\$4.20	\$3.75	\$3.95	\$4.65	\$41.00
	2027	2.0%	2.0%	0.850	\$70.00	\$83.65	\$77.65	\$92.80	\$74.85	\$77.25	\$71.30	\$12.20	\$37.10	\$60.30	\$97.45	\$4.65	\$3.65	\$4.35	\$3.90	\$4.00	\$4.80	\$41.85
	2028	2.0%	2.0%	0.850	\$70.00	\$85.35	\$77.65	\$94.65	\$76.35	\$78.80	\$72.70	\$12.45	\$37.85	\$61.50	\$99.40	\$4.75	\$3.65	\$4.45	\$3.95	\$4.00	\$4.90	\$42.65
	2029	2.0%	2.0%	0.850	\$70.00	\$87.05	\$77.65	\$96.55	\$77.90	\$80.40	\$74.15	\$12.70	\$38.60	\$62.75	\$101.40	\$4.85	\$3.65	\$4.55	\$4.05	\$4.00	\$4.95	\$43.50
	2030	2.0%	2.0%	0.850	\$70.00	\$88.80	\$77.65	\$98.50	\$79.45	\$82.00	\$75.65	\$12.95	\$39.40	\$64.00	\$103.45	\$4.95	\$3.65	\$4.65	\$4.10	\$4.00	\$5.05	\$44.40
	2031	2.0%	2.0%	0.850	\$70.00	\$90.55	\$77.65	\$100.45	\$81.05	\$83.65	\$77.15	\$13.20	\$40.15	\$65.25	\$105.50	\$5.05	\$3.65	\$4.70	\$4.20	\$4.00	\$5.15	\$45.30
	2032	2.0%	2.0%	0.850	\$70.00	\$92.35	\$77.65	\$102.45	\$82.65	\$85.30	\$78.70	\$13.45	\$40.95	\$66.55	\$107.60	\$5.15	\$3.65	\$4.80	\$4.30	\$4.00	\$5.30	\$46.20
	2033	2.0%	2.0%	0.850	\$70.00	\$94.20	\$77.65	\$104.50	\$84.30	\$87.00	\$80.30	\$13.75	\$41.80	\$67.90	\$109.75	\$5.25	\$3.65	\$4.90	\$4.35	\$4.00	\$5.40	\$47.10
	2034	2.0%	2.0%	0.850	\$70.00	\$96.10	\$77.65	\$106.60	\$86.00	\$88.75	\$81.90	\$14.00	\$42.60	\$69.25	\$111.95	\$5.35	\$3.65	\$5.00	\$4.45	\$4.00	\$5.50	\$48.05
	2035	2.0%	2.0%	0.850	\$70.00	\$98.00	\$77.65	\$108.75	\$87.75	\$90.55	\$83.50	\$14.30	\$43.50	\$70.65	\$114.20	\$5.45	\$3.65	\$5.10	\$4.55	\$4.00	\$5.60	\$49.00
	2036	2.0%	2.0%	0.850	\$70.00	\$100.00	\$77.65	\$110.90	\$89.50	\$92.35	\$85.20	\$14.55	\$44.35	\$72.05	\$116.45	\$5.55	\$3.65	\$5.20	\$4.65	\$4.00	\$5.70	\$50.00
	2037	2.0%	2.0%	0.850	\$70.00	\$102.00	\$77.65	\$113.10	\$91.25	\$94.20	\$86.90	\$14.85	\$45.25	\$73.50	\$118.80	\$5.70	\$3.65	\$5.30	\$4.75	\$4.00	\$5.85	\$51.00
	2037+	2.0%	2.0%	0.850	0.0%	2.0%	0.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	0.0%	2.0%	2.0%	0.0%	2.0%	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)
  - 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 2017 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



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**Deloitte Resource Evaluation & Advisory**  
**Canadian Domestic Forecast - Additional Crude Reference Prices**  
**Base Case Forecast Effective December 31 2017**

		Crude Oil Pricing													Natural Gas
		Price Inflation Rate	Cost Inflation Rate	CAD to USD Exchange Rate	WTI at Cushing Oklahoma	WTI at Cushing Oklahoma	Edmonton City Gate	Edmonton City Gate	Lt. Sour 35 Deg. API	MSO 31 Deg. API	Bow River 25 Deg. API	WCS 20.5 Deg. API	Heavy Oil 12 Deg. API	Synbit (AWB) 70% Bitumen 30% Cond. 21 Deg. API	Ontario Dawn Reference Point
					US\$/bbl Real	US\$/bbl Current	C\$/bbl Real	C\$/bbl Current	C\$/bbl Current	C\$/bbl Current	C\$/bbl Current	C\$/bbl Current	C\$/bbl Current	C\$/bbl Current	C\$/bbl Current
H	2007	2.4%	2.4%	0.997	\$108.53	\$91.69	\$106.51	\$89.98	\$85.13	\$62.47	\$50.95	\$50.19	\$31.47	\$51.54	\$7.47
i	2008	2.4%	2.4%	0.943	\$115.03	\$99.57	\$118.76	\$102.80	\$95.28	\$92.40	\$83.90	\$82.95	\$73.08	\$84.08	\$9.88
s	2009	0.3%	0.3%	0.880	\$69.53	\$61.65	\$74.54	\$66.10	\$64.04	\$63.76	\$59.80	\$58.66	\$54.40	\$58.92	\$4.80
t	2010	1.8%	1.8%	0.971	\$89.27	\$79.40	\$87.48	\$77.80	\$76.40	\$72.32	\$68.18	\$67.22	\$60.62	\$67.64	\$4.79
o	2011	2.9%	2.9%	1.012	\$104.81	\$94.88	\$105.53	\$95.54	\$92.13	\$83.39	\$78.42	\$77.12	\$69.60	\$80.29	\$4.34
r	2012	1.5%	1.5%	1.001	\$100.92	\$94.11	\$92.83	\$86.57	\$84.27	\$77.53	\$74.41	\$73.10	\$64.07	\$74.75	\$3.11
i	2013	0.9%	0.9%	0.972	\$103.40	\$97.91	\$98.59	\$93.36	\$91.76	\$82.65	\$76.29	\$74.97	\$65.49	\$76.90	\$4.13
c	2014	1.9%	1.9%	0.906	\$97.56	\$93.26	\$98.33	\$94.00	\$92.91	\$89.39	\$81.49	\$81.06	\$73.70	\$82.03	\$5.76
a	2015	1.1%	1.1%	0.783	\$49.96	\$48.69	\$58.49	\$57.00	\$55.46	\$54.70	\$45.23	\$44.80	\$39.63	\$44.28	\$3.72
l	2016	1.4%	1.4%	0.755	\$43.79	\$43.15	\$52.98	\$52.22	\$51.37	\$48.29	\$39.23	\$38.90	\$34.08	\$39.58	\$3.46
2	12 Mths H	1.6%	1.6%	0.771	\$50.84	\$50.84	\$62.11	\$62.11	\$62.20	\$58.68	\$51.17	\$50.85	\$45.03	\$50.38	\$3.96
0	0 Mths F	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1															
7	Avg.	N/A	N/A	0.771	\$50.84	\$50.84	\$62.11	\$62.11	\$62.20	\$58.68	\$51.17	\$50.85	\$45.03	\$50.38	\$3.96
F	2018	0.0%	0.0%	0.780	\$55.00	\$55.00	\$65.40	\$65.40	\$64.40	\$61.40	\$55.40	\$46.40	\$41.40	\$49.60	\$3.85
o	2019	2.0%	2.0%	0.800	\$57.50	\$58.65	\$66.90	\$68.25	\$67.20	\$64.15	\$55.00	\$50.90	\$45.80	\$53.55	\$4.00
r	2020	2.0%	2.0%	0.825	\$60.00	\$62.40	\$67.90	\$70.65	\$69.60	\$66.50	\$57.10	\$55.05	\$49.85	\$57.10	\$4.15
e	2021	2.0%	2.0%	0.850	\$65.00	\$69.00	\$71.75	\$76.15	\$75.10	\$71.90	\$62.35	\$60.20	\$57.05	\$63.95	\$4.40
c	2022	2.0%	2.0%	0.850	\$70.00	\$75.75	\$77.65	\$84.05	\$82.95	\$79.70	\$70.00	\$67.80	\$64.55	\$71.65	\$4.60
a	2023	2.0%	2.0%	0.850	\$70.00	\$77.30	\$77.65	\$85.75	\$84.65	\$81.30	\$71.40	\$69.15	\$65.85	\$73.10	\$4.90
s	2024	2.0%	2.0%	0.850	\$70.00	\$78.85	\$77.65	\$87.45	\$86.30	\$82.95	\$72.80	\$70.55	\$67.20	\$74.55	\$5.25
t	2025	2.0%	2.0%	0.850	\$70.00	\$80.40	\$77.65	\$89.20	\$88.05	\$84.60	\$74.25	\$71.95	\$68.50	\$76.05	\$5.55
	2026	2.0%	2.0%	0.850	\$70.00	\$82.00	\$77.65	\$91.00	\$89.80	\$86.30	\$75.75	\$73.40	\$69.90	\$77.55	\$5.75
	2027	2.0%	2.0%	0.850	\$70.00	\$83.65	\$77.65	\$92.80	\$91.60	\$88.00	\$77.25	\$74.85	\$71.30	\$79.10	\$5.90
	2028	2.0%	2.0%	0.850	\$70.00	\$85.35	\$77.65	\$94.65	\$93.45	\$89.80	\$78.80	\$76.35	\$72.70	\$80.70	\$6.05
	2029	2.0%	2.0%	0.850	\$70.00	\$87.05	\$77.65	\$96.55	\$95.30	\$91.55	\$80.40	\$77.90	\$74.15	\$82.30	\$6.15
	2030	2.0%	2.0%	0.850	\$70.00	\$88.80	\$77.65	\$98.50	\$97.20	\$93.40	\$82.00	\$79.45	\$75.65	\$83.95	\$6.30
	2031	2.0%	2.0%	0.850	\$70.00	\$90.55	\$77.65	\$100.45	\$99.15	\$95.25	\$83.65	\$81.05	\$77.15	\$85.65	\$6.40
	2032	2.0%	2.0%	0.850	\$70.00	\$92.35	\$77.65	\$102.45	\$101.15	\$97.20	\$85.30	\$82.65	\$78.70	\$87.35	\$6.55
	2033	2.0%	2.0%	0.850	\$70.00	\$94.20	\$77.65	\$104.50	\$103.15	\$99.10	\$87.00	\$84.30	\$80.30	\$89.10	\$6.65
	2034	2.0%	2.0%	0.850	\$70.00	\$96.10	\$77.65	\$106.60	\$105.20	\$101.10	\$88.75	\$86.00	\$81.90	\$90.90	\$6.80
	2035	2.0%	2.0%	0.850	\$70.00	\$98.00	\$77.65	\$108.75	\$107.35	\$103.15	\$90.55	\$87.75	\$83.50	\$92.70	\$6.95
	2036	2.0%	2.0%	0.850	\$70.00	\$100.00	\$77.65	\$110.90	\$109.50	\$105.20	\$92.35	\$89.50	\$85.20	\$94.55	\$7.05
	2037	2.0%	2.0%	0.850	\$70.00	\$102.00	\$77.65	\$113.10	\$111.65	\$107.30	\$94.20	\$91.25	\$86.90	\$96.45	\$7.20
	2037+	2.0%	2.0%	0.850	0.0%	2.0%	0.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	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)  
- 1 Mcf is equivalent to 1 mmbtu  
- Real prices listed in 2017 dollars with no escalation considered  
Sarnia price is Edmonton Sweet (MSW) delivered to Sarnia, Ontario  
Synbit is a combined bitumin (70%) and Condensate (30%) stream equivalent to the Acces Western Blend (AWB).



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**Deloitte Resource Evaluation & Advisory  
International Forecast  
Base Case Forecast Effective December 31 2017  
Real Prices**

		Crude Oil Pricing															
		Average WTI Spot US\$/bbl Real	Alaskan North Slope US\$/bbl Real	California Kern River US\$/bbl Real	Louisiana Heavy Sweet US\$/bbl Real	Louisiana Light Sweet US\$/bbl Real	MARS Blend US\$/bbl Real	Wyoming Sweet US\$/bbl Real	Brent Spot US\$/bbl Real	Gulf Coast Argus Sour Crude Index ASCI US\$/bbl Real	Average OPEC Basket US\$/bbl Real	Venezuelan Merey US\$/bbl Real	Nigerian Bonny Light US\$/bbl Real	Arabia UAE Dubai Feteih US\$/bbl Real	Mexico Maya US\$/bbl Real	Russia Urals US\$/bbl Real	Indonesia Minas US\$/bbl Real
F	2018	\$55.00	\$48.00	\$51.00	\$54.00	\$53.00	\$50.00	\$51.50	\$61.00	\$50.00	\$59.25	\$54.00	\$61.50	\$59.50	\$53.00	\$60.00	\$54.00
o	2019	\$57.50	\$50.50	\$53.50	\$56.50	\$55.50	\$52.50	\$54.00	\$61.50	\$52.50	\$59.75	\$54.50	\$62.00	\$60.00	\$53.50	\$60.50	\$56.50
r	2020	\$60.00	\$53.00	\$56.00	\$59.00	\$58.00	\$55.00	\$56.50	\$62.00	\$55.00	\$60.25	\$55.00	\$62.50	\$60.50	\$54.00	\$61.00	\$57.00
e	2021	\$65.00	\$58.00	\$61.00	\$64.00	\$63.00	\$60.00	\$61.50	\$67.00	\$60.00	\$65.25	\$60.00	\$67.50	\$65.50	\$59.00	\$66.00	\$62.00
c	2022	\$70.00	\$63.00	\$66.00	\$69.00	\$68.00	\$65.00	\$66.50	\$72.00	\$65.00	\$70.25	\$65.00	\$72.50	\$70.50	\$64.00	\$71.00	\$67.00
a	2023	\$70.00	\$63.00	\$66.00	\$69.00	\$68.00	\$65.00	\$66.50	\$72.00	\$65.00	\$70.25	\$65.00	\$72.50	\$70.50	\$64.00	\$71.00	\$67.00
s	2024	\$70.00	\$63.00	\$66.00	\$69.00	\$68.00	\$65.00	\$66.50	\$72.00	\$65.00	\$70.25	\$65.00	\$72.50	\$70.50	\$64.00	\$71.00	\$67.00
t	2025	\$70.00	\$63.00	\$66.00	\$69.00	\$68.00	\$65.00	\$66.50	\$72.00	\$65.00	\$70.25	\$65.00	\$72.50	\$70.50	\$64.00	\$71.00	\$67.00
	2026	\$70.00	\$63.00	\$66.00	\$69.00	\$68.00	\$65.00	\$66.50	\$72.00	\$65.00	\$70.25	\$65.00	\$72.50	\$70.50	\$64.00	\$71.00	\$67.00
	2027	\$70.00	\$63.00	\$66.00	\$69.00	\$68.00	\$65.00	\$66.50	\$72.00	\$65.00	\$70.25	\$65.00	\$72.50	\$70.50	\$64.00	\$71.00	\$67.00
	2028	\$70.00	\$63.00	\$66.00	\$69.00	\$68.00	\$65.00	\$66.50	\$72.00	\$65.00	\$70.25	\$65.00	\$72.50	\$70.50	\$64.00	\$71.00	\$67.00
	2029	\$70.00	\$63.00	\$66.00	\$69.00	\$68.00	\$65.00	\$66.50	\$72.00	\$65.00	\$70.25	\$65.00	\$72.50	\$70.50	\$64.00	\$71.00	\$67.00
	2030	\$70.00	\$63.00	\$66.00	\$69.00	\$68.00	\$65.00	\$66.50	\$72.00	\$65.00	\$70.25	\$65.00	\$72.50	\$70.50	\$64.00	\$71.00	\$67.00
	2031	\$70.00	\$63.00	\$66.00	\$69.00	\$68.00	\$65.00	\$66.50	\$72.00	\$65.00	\$70.25	\$65.00	\$72.50	\$70.50	\$64.00	\$71.00	\$67.00
	2032	\$70.00	\$63.00	\$66.00	\$69.00	\$68.00	\$65.00	\$66.50	\$72.00	\$65.00	\$70.25	\$65.00	\$72.50	\$70.50	\$64.00	\$71.00	\$67.00
	2033	\$70.00	\$63.00	\$66.00	\$69.00	\$68.00	\$65.00	\$66.50	\$72.00	\$65.00	\$70.25	\$65.00	\$72.50	\$70.50	\$64.00	\$71.00	\$67.00
	2034	\$70.00	\$63.00	\$66.00	\$69.00	\$68.00	\$65.00	\$66.50	\$72.00	\$65.00	\$70.25	\$65.00	\$72.50	\$70.50	\$64.00	\$71.00	\$67.00
	2035	\$70.00	\$63.00	\$66.00	\$69.00	\$68.00	\$65.00	\$66.50	\$72.00	\$65.00	\$70.25	\$65.00	\$72.50	\$70.50	\$64.00	\$71.00	\$67.00
	2036	\$70.00	\$63.00	\$66.00	\$69.00	\$68.00	\$65.00	\$66.50	\$72.00	\$65.00	\$70.25	\$65.00	\$72.50	\$70.50	\$64.00	\$71.00	\$67.00
	2037	\$70.00	\$63.00	\$66.00	\$69.00	\$68.00	\$65.00	\$66.50	\$72.00	\$65.00	\$70.25	\$65.00	\$72.50	\$70.50	\$64.00	\$71.00	\$67.00
	2037+	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

		Natural Gas Pricing							Ethanol	
		USD to GBP Exchange Rate	USD to EUR Exchange Rate	NYMEX Henry Hub US\$/Mcf Real	Permian Waha US\$/Mcf Real	San Juan Ignacio US\$/Mcf Real	Rocky Mtn. Opal US\$/Mcf Real	UK NBP US\$/Mcf Real	India Domestic Gas US\$/Mcf Real	U.S. CBOT Ethanol US\$/gal. Real
F	2018	1.350	1.200	\$2.80	\$2.35	\$2.40	\$2.45	\$8.30	\$3.30	\$1.50
o	2019	1.350	1.200	\$2.90	\$2.45	\$2.50	\$2.55	\$7.90	\$4.20	\$1.50
r	2020	1.350	1.200	\$3.10	\$2.65	\$2.70	\$2.75	\$7.60	\$4.05	\$1.50
e	2021	1.350	1.200	\$3.30	\$2.85	\$2.90	\$2.95	\$7.50	\$4.00	\$1.50
c	2022	1.350	1.200	\$3.40	\$2.95	\$3.00	\$3.05	\$7.50	\$4.05	\$1.50
a	2023	1.350	1.200	\$3.55	\$3.10	\$3.15	\$3.20	\$7.50	\$4.10	\$1.50
s	2024	1.350	1.200	\$3.75	\$3.30	\$3.35	\$3.40	\$7.50	\$4.20	\$1.50
t	2025	1.350	1.200	\$3.90	\$3.45	\$3.50	\$3.55	\$7.50	\$4.30	\$1.50
	2026	1.350	1.200	\$3.95	\$3.50	\$3.55	\$3.60	\$7.50	\$4.35	\$1.50
	2027	1.350	1.200	\$4.00	\$3.55	\$3.60	\$3.65	\$7.50	\$4.40	\$1.50
	2028	1.350	1.200	\$4.00	\$3.55	\$3.60	\$3.65	\$7.50	\$4.40	\$1.50
	2029	1.350	1.200	\$4.00	\$3.55	\$3.60	\$3.65	\$7.50	\$4.40	\$1.50
	2030	1.350	1.200	\$4.00	\$3.55	\$3.60	\$3.65	\$7.50	\$4.40	\$1.50
	2031	1.350	1.200	\$4.00	\$3.55	\$3.60	\$3.65	\$7.50	\$4.40	\$1.50
	2032	1.350	1.200	\$4.00	\$3.55	\$3.60	\$3.65	\$7.50	\$4.40	\$1.50
	2033	1.350	1.200	\$4.00	\$3.55	\$3.60	\$3.65	\$7.50	\$4.40	\$1.50
	2034	1.350	1.200	\$4.00	\$3.55	\$3.60	\$3.65	\$7.50	\$4.40	\$1.50
	2035	1.350	1.200	\$4.00	\$3.55	\$3.60	\$3.65	\$7.50	\$4.40	\$1.50
	2036	1.350	1.200	\$4.00	\$3.55	\$3.60	\$3.65	\$7.50	\$4.40	\$1.50
	2037	1.350	1.200	\$4.00	\$3.55	\$3.60	\$3.65	\$7.50	\$4.40	\$1.50
	2037+	1.350	1.200	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Notes: Venezuelan Merey replaced BCF-17 in the OPEC basket March 1, 2009.



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**Deloitte Resource Evaluation & Advisory**  
**International Forecast**  
**Base Case Forecast Effective December 31 2017**  
**Escalated Prices**

		USD to GBP Exchange Rate	USD to EUR Exchange Rate	Crude Oil Pricing																Natural Gas					Ethanol
				Average WTI Spot US\$/bbl	Alaska North Slope US\$/bbl	California Kern River US\$/bbl	Louisiana Heavy Sweet US\$/bbl	Louisiana Light Sweet US\$/bbl	MARS Blend US\$/bbl	Wyoming Sweet US\$/bbl	Brent Spot US\$/bbl	Gulf Coast Argus Sour Crude Index US\$/bbl	Average OPEC Basket US\$/bbl	Venezuelan Merly US\$/bbl	Nigerian Bonny Light US\$/bbl	Arabia UAE Dubai Feteh US\$/bbl	Mexico Maya US\$/bbl	Russia Urals US\$/bbl	Indonesia Minas US\$/bbl	NYMEX Henry Hub US\$/Mcf	Permian Waha US\$/Mcf	San Juan Ignacio US\$/Mcf	Rocky Mtn. Opal US\$/Mcf	UK NBP US\$/Mcf	U.S. CBOT Ethanol US\$/gal.
				Escalated	Escalated	Escalated	Escalated	Escalated	Escalated	Escalated	Escalated	Escalated	Escalated	Escalated	Escalated	Escalated	Escalated	Escalated	Escalated	Escalated	Escalated	Escalated	Escalated	Escalated	Escalated
H	2008	1.852	1.470	\$99.57	\$91.24	\$87.20	\$103.62	\$100.82	\$96.61	\$88.38	\$96.85	N/A	\$94.05	N/A	\$100.24	\$93.48	\$83.83	\$94.51	\$100.25	\$8.86	\$7.44	\$7.20	\$6.52	\$6.14	\$1.84
i	2009	1.565	1.393	\$61.65	\$54.84	\$48.66	\$58.78	\$60.29	\$51.73	\$61.49	\$60.86	N/A	\$60.86	N/A	\$53.01	\$61.65	\$56.41	\$60.70	\$39.23	\$3.95	\$3.43	\$3.34	\$3.14	\$4.53	\$1.72
s	2010	1.546	1.328	\$79.40	\$72.17	\$72.83	\$78.16	\$79.32	\$75.60	\$70.44	\$79.68	N/A	\$77.38	N/A	\$70.70	\$78.04	\$70.07	\$78.01	\$0.00	\$4.39	\$4.16	\$4.09	\$3.94	\$6.48	\$1.80
t	2011	1.604	1.392	\$94.88	\$98.47	\$103.11	\$107.12	\$108.03	\$105.37	\$97.41	\$111.26	\$105.37	\$107.45	\$97.88	\$89.28	\$106.19	\$98.95	\$109.19	\$0.00	\$4.00	\$3.88	\$3.82	\$3.80	\$9.03	\$2.51
o	2012	1.586	1.286	\$94.11	\$98.35	\$103.69	\$107.18	\$107.19	\$104.82	\$85.04	\$111.99	\$104.82	\$109.50	\$100.11	\$111.61	\$109.11	\$99.74	\$110.50	\$55.32	\$2.75	\$2.64	\$2.64	\$2.67	\$9.47	\$2.31
r	2013	1.565	1.329	\$97.91	\$95.85	\$101.38	\$105.80	\$106.19	\$101.80	\$89.97	\$108.64	\$101.80	\$105.51	\$96.71	\$111.41	\$105.51	\$98.06	\$108.05	\$107.54	\$3.73	\$3.62	\$3.64	\$3.64	\$10.66	\$2.04
i	2014	1.647	1.329	\$93.26	\$86.45	\$90.38	\$96.16	\$94.25	\$92.95	\$83.50	\$99.02	\$92.95	\$96.19	\$86.79	\$100.77	\$96.61	\$85.79	\$98.01	\$98.63	\$4.39	\$4.28	\$4.28	\$4.34	\$8.24	\$1.93
c	2015	1.529	1.110	\$48.69	\$41.34	\$44.75	\$48.38	\$48.32	\$46.57	\$41.59	\$52.39	\$46.57	\$49.52	\$41.17	\$52.99	\$50.96	\$44.02	\$51.94	\$49.24	\$2.63	\$2.43	\$2.45	\$2.45	\$6.53	\$1.50
a	2016	1.355	1.107	\$43.15	\$33.26	\$37.02	\$40.49	\$40.34	\$36.37	\$38.65	\$43.56	\$36.37	\$40.68	\$33.96	\$43.95	\$41.32	\$36.40	\$42.09	\$41.05	\$2.52	\$2.29	\$2.30	\$2.30	\$4.66	\$1.53
l	2017	1.289	1.130	\$50.84	\$46.00	\$49.58	\$51.73	\$50.33	\$48.06	\$48.99	\$54.17	\$48.06	\$52.45	\$47.73	\$54.57	\$53.15	\$46.84	\$53.31	\$49.00	\$2.99	\$2.55	\$2.59	\$2.65	\$5.84	\$1.49
F	2018	1.350	1.200	\$55.00	\$48.00	\$51.00	\$54.00	\$53.00	\$50.00	\$51.50	\$61.00	\$50.00	\$59.25	\$54.00	\$61.50	\$59.50	\$53.00	\$60.00	\$54.00	\$2.80	\$2.35	\$2.40	\$2.45	\$8.30	\$1.50
o	2019	1.350	1.200	\$58.65	\$51.50	\$54.55	\$57.65	\$56.60	\$53.55	\$55.10	\$62.75	\$53.55	\$60.95	\$55.60	\$63.25	\$61.20	\$54.55	\$61.70	\$57.65	\$2.95	\$2.50	\$2.55	\$2.60	\$8.05	\$1.55
r	2020	1.350	1.200	\$62.40	\$55.15	\$58.25	\$61.40	\$60.35	\$57.20	\$58.80	\$64.50	\$57.20	\$62.70	\$57.20	\$65.05	\$62.95	\$56.20	\$63.45	\$59.30	\$3.25	\$2.75	\$2.80	\$2.85	\$7.90	\$1.55
e	2021	1.350	1.200	\$69.00	\$61.55	\$64.75	\$67.90	\$66.85	\$63.65	\$65.25	\$71.10	\$63.65	\$69.25	\$63.65	\$71.65	\$69.50	\$62.60	\$70.05	\$65.80	\$3.50	\$3.00	\$3.10	\$3.15	\$7.95	\$1.60
c	2022	1.350	1.200	\$77.75	\$68.20	\$71.45	\$74.70	\$73.60	\$70.35	\$72.00	\$77.95	\$70.35	\$76.05	\$70.35	\$78.50	\$76.30	\$69.30	\$76.85	\$72.50	\$3.70	\$3.20	\$3.25	\$3.30	\$8.10	\$1.60
a	2023	1.350	1.200	\$77.30	\$69.55	\$72.85	\$76.20	\$75.10	\$71.75	\$73.40	\$79.50	\$71.75	\$77.55	\$71.75	\$80.05	\$77.85	\$70.65	\$78.40	\$73.95	\$3.90	\$3.40	\$3.50	\$3.55	\$8.30	\$1.65
s	2024	1.350	1.200	\$78.85	\$70.95	\$74.35	\$77.70	\$76.60	\$73.20	\$74.90	\$81.10	\$73.20	\$79.10	\$73.20	\$81.65	\$79.40	\$72.05	\$79.95	\$75.45	\$4.20	\$3.70	\$3.75	\$3.85	\$8.45	\$1.70
t	2025	1.350	1.200	\$80.40	\$72.35	\$75.80	\$79.25	\$78.10	\$74.65	\$76.40	\$82.70	\$74.65	\$80.70	\$74.65	\$83.30	\$81.00	\$73.50	\$81.55	\$76.95	\$4.50	\$3.95	\$4.00	\$4.10	\$8.60	\$1.70
	2026	1.350	1.200	\$82.00	\$73.80	\$77.35	\$80.85	\$79.65	\$76.15	\$77.90	\$84.35	\$76.15	\$82.30	\$76.15	\$84.95	\$82.60	\$75.00	\$83.20	\$78.50	\$4.65	\$4.10	\$4.15	\$4.20	\$8.80	\$1.75
	2027	1.350	1.200	\$83.65	\$75.30	\$78.90	\$82.45	\$81.25	\$77.70	\$79.45	\$86.05	\$77.70	\$83.95	\$77.70	\$86.65	\$84.25	\$76.50	\$84.85	\$80.05	\$4.80	\$4.25	\$4.30	\$4.35	\$8.95	\$1.80
	2028	1.350	1.200	\$85.35	\$76.80	\$80.45	\$84.10	\$82.90	\$79.25	\$81.05	\$87.75	\$79.25	\$85.65	\$79.25	\$88.40	\$86.95	\$78.00	\$86.55	\$81.65	\$4.90	\$4.35	\$4.40	\$4.45	\$9.15	\$1.85
	2029	1.350	1.200	\$87.05	\$78.35	\$82.05	\$85.80	\$84.55	\$80.80	\$82.70	\$89.50	\$80.80	\$87.35	\$80.80	\$90.15	\$87.65	\$79.60	\$88.30	\$83.30	\$4.95	\$4.40	\$4.50	\$4.55	\$9.35	\$1.85
	2030	1.350	1.200	\$88.80	\$79.90	\$83.70	\$87.50	\$86.25	\$82.45	\$84.35	\$91.30	\$82.45	\$89.10	\$82.45	\$91.95	\$89.40	\$81.15	\$90.05	\$84.95	\$5.05	\$4.50	\$4.55	\$4.65	\$9.50	\$1.90
	2031	1.350	1.200	\$90.55	\$81.50	\$85.40	\$89.25	\$87.95	\$84.10	\$86.00	\$93.15	\$84.10	\$90.90	\$84.10	\$93.80	\$91.20	\$82.80	\$91.85	\$86.65	\$5.15	\$4.60	\$4.65	\$4.70	\$9.70	\$1.95
	2032	1.350	1.200	\$92.35	\$83.15	\$87.10	\$91.05	\$89.70	\$85.75	\$87.75	\$95.00	\$85.75	\$92.70	\$85.75	\$95.65	\$93.00	\$84.45	\$93.70	\$88.40	\$5.30	\$4.70	\$4.75	\$4.80	\$9.90	\$2.00
	2033	1.350	1.200	\$94.20	\$84.80	\$88.85	\$92.85	\$91.50	\$87.50	\$89.50	\$96.90	\$87.50	\$94.55	\$87.50	\$97.60	\$94.90	\$86.15	\$95.55	\$90.15	\$5.40	\$4.80	\$4.85	\$4.90	\$10.10	\$2.00
	2034	1.350	1.200	\$96.10	\$86.50	\$90.60	\$94.70	\$93.35	\$89.25	\$91.30	\$98.85	\$89.25	\$96.45	\$89.25	\$99.55	\$96.80	\$87.85	\$97.45	\$92.00	\$5.50	\$4.85	\$4.95	\$5.00	\$10.30	\$2.05
	2035	1.350	1.200	\$98.00	\$88.20	\$92.40	\$96.60	\$95.20	\$91.00	\$93.10	\$100.80	\$91.00	\$98.35	\$91.00	\$101.50	\$98.70	\$89.60	\$99.40	\$93.80	\$5.60	\$4.95	\$5.05	\$5.10	\$10.50	\$2.10
	2036	1.350	1.200	\$100.00	\$90.00	\$94.25	\$98.55	\$97.10	\$92.85	\$95.00	\$102.85	\$92.85	\$100.35	\$92.85	\$103.55	\$100.70	\$91.40	\$101.40	\$95.70	\$5.70	\$5.05	\$5.15	\$5.20	\$10.70	\$2.15
	2037	1.350	1.200	\$102.00	\$91.80	\$96.15	\$100.50	\$99.05	\$94.70	\$96.90	\$104.90	\$94.70	\$102.35	\$94.70	\$105.60	\$102.70	\$93.25	\$103.45	\$97.60	\$5.85	\$5.15	\$5.25	\$5.30	\$10.95	\$2.20
	2037+	1.350	1.200	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	

Notes: Venezuelan Merly replaced BCF-17 in the OPEC basket March 1, 2009.



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