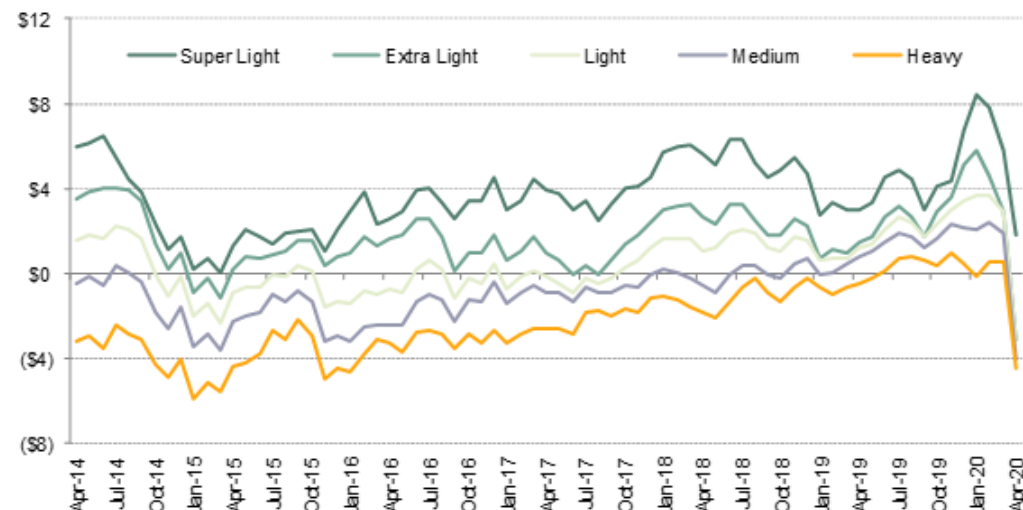


EXECUTIVE SUMMARY

would not take any action if the proposal was not ratified by the entirety of OPEC+ and, less than 24 hours later, Russia called their bluff. The OPEC+ agreement that has taken 2.1 mmbd of production – 1.7 mmbd OPEC+ cut plus 0.4 mmbd Saudi voluntary cut – is set to expire at the end of March and the global crude market will see a significant increase in supply.

Middle East Crude Spreads to Asia OSP: 6-Year History



Source: Bloomberg

Hindsight is 20/20 and upon reflection there have been numerous signals that the OPEC+ alliance was fraying. The friction was on display at the December OPEC+ meeting where the Russians reluctantly agreed to a fresh round of OPEC+ production curtailments (Russia was largely spared) and remained present during January and February as Russia resisted calls from Saudi Arabia and others to hold an emergency OPEC+ meeting. OPEC+'s efforts to "ensure price stability" over the past few years put an implicit floor under crude prices - ~\$50/bbl WTI and ~\$60/bbl Brent – but the ever-present structural oversupply condition of the market was on display as crude prices were muted in the face of rising geopolitical risks including the bombing of Saudi Arabia's Abqaiq facility in September 2019 and the assassination of Iranian General Soleimani.

OPEC+ Country Quotas (MMBD)								
OPEC Country	Jan-20 Prod.	Jan-20 Quota	Above/ (Below)	Spare Capac.	Non-OPEC Country	Jan-20 Prod.	Jan-20 Quota	Above/ (Below)
Algeria	1.01	1.01	(0.00)	0.02	Azerbaijan	0.66	0.70	(0.04)
Angola	1.38	1.48	(0.10)	0.04	Kazakhstan	1.69	1.63	0.06
Congo	0.30	0.32	(0.02)	0.05	Mexico	1.71	1.69	0.02
Equatorial Guinea	0.12	0.12	(0.00)	0.00	Oman	0.82	0.85	(0.03)
Gabon	0.18	0.18	0.00	0.04	Russia	10.39	10.32	0.07
Iraq	4.54	4.46	0.08	0.36	Others	1.09	1.05	0.04
Kuwait	2.67	2.67	0.00	0.18				
Nigeria	1.68	1.75	(0.07)	0.12				
Saudi Arabia	9.72	10.14	(0.42)	2.28				
UAE	3.05	3.01	0.04	0.48				
OPEC-10 Total	24.65	25.15	(0.50)	3.57	Sub-total	16.36	16.24	0.13
OPEC-10 w. Saudi cuts		24.75	(0.10)					
Iran	2.06	no quota		0.00				
Libya	0.78	no quota		0.39				
Venezuela	0.84	no quota		0.00				
Ecuador	0.53	no quota		0.02				
Total OPEC	28.86			3.98				
Total OPEC+	41.01	41.39	(0.37)	n/a				
Total OPEC+ (extra Saudi)		40.99	0.03	n/a				

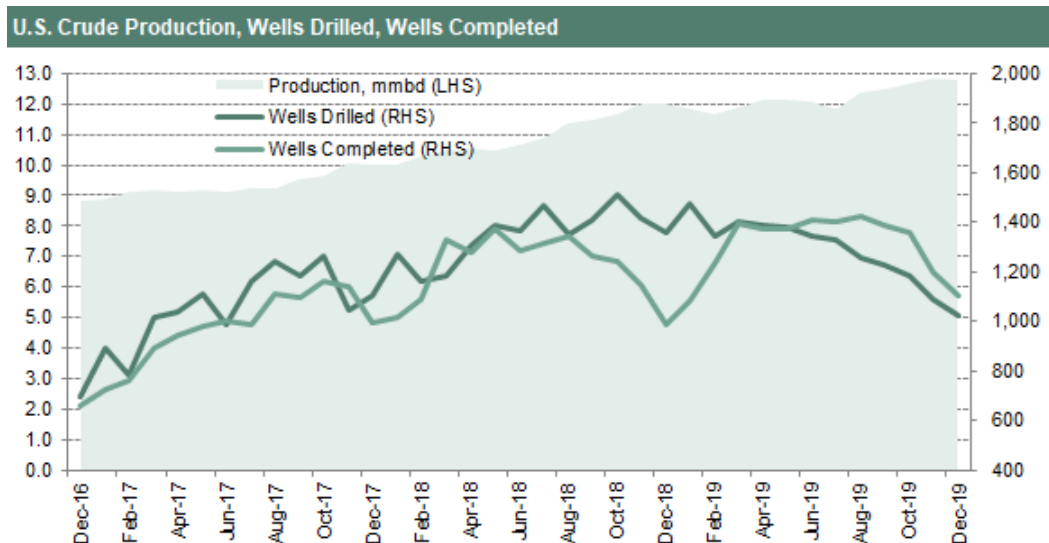
Note: Non-OPEC "Others" include Bahrain, Brunei, Malaysia, Sudan and South Sudan

Spare capacity is relative to Jan-20 production levels

OPEC+ totals exclude Iran, Libya, Venezuela, Ecuador.

Source: Bloomberg, IEA

Initial hopes that core OPEC members might step out on their own to make additional cuts or at least maintain production in-line with the existing OPEC+ supply agreement were dashed over the weekend: Saudi Arabia slashed its crude pricing and news reports indicate that the country is looking to raise production from 9.7 mmbd currently to as much as 11 mmbd in April. Spare capacity across OPEC stands at 3.98 mmbd (3.57 mmbd excluding Iran, Libya, Venezuela, Ecuador) and the Saudis are largely in the driver's seat with 2.28 mmbd of spare capacity. The IEA estimates Saudi Arabia's sustainable production capacity at 12 mmbd but the only time the country has produced in excess of 11 mmbd was November 2018. Hard data on Russia's spare production capacity is tough to come by but we've seen estimates in the 0.3-0.5 mmbd range, and over the longer-term would expect an unconstrained Russian energy industry to be able to generate growth.

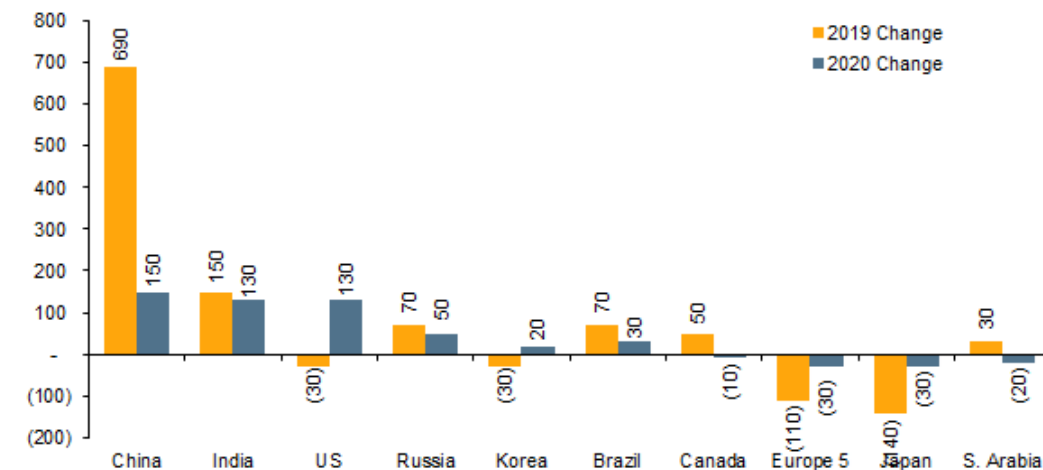


Source: EIA (Production from Petroleum Supply Monthly, Wells Completed & Drilled from Drilling Productivity Report) via Bloomberg

Non-OPEC supply will need to come down in order to balance the global crude market, assuming the price war is more than a 1-2 quarter phenomenon. Global non-OPEC supply growth estimates for 2020 are currently pegged at 2.05 mmbd according to the latest IEA forecasts (February 13) and at 0.525 mmbd according to the latest publicly available OPEC forecasts. As we have previously noted, 40% of forecasted 2020 non-OPEC supply growth is expected to come from the U.S. (largely short-cycle onshore assets), marking a sizable reduction in the U.S.'s contribution of net non-OPEC growth from 80%+ in 2018-2019. We do expect to see U.S. production growth forecasts revised down as producers react to the weaker-than-expected price environment by reducing drilling and completion activity, but the ~60% of non-OPEC growth that is expected to come from long-cycle assets outside the U.S. is unlikely to see as significant of an impact.

Demand: The demand side of the ledger is even uglier in the near-term as the spread of the coronavirus continues to negatively impact economic activity around the globe. The IEA's February update included a 27% reduction in its 2020 global crude demand growth expectation to 0.8 mmbd and its forthcoming March update is expected to show a far more draconian reduction.

Global Oil Demand Growth 2020 vs. 2019 - Top 10 Markets (kbd): IEA in February



Note: Europe 5 includes France, Germany, Italy, Spain, and UK
 Source: IEA, as of January 16, 2020. CreditSights

We think it is important to note that, thus far, most forecasts regarding the impact of the coronavirus have centered on a swift recovery in 2Q20. This outcome may be plausible for China with reports indicating that workers are slowly returning to factories, but the risk of additional economic disruptions outside of China cannot be ignored, in our view. A recent Enverus webinar highlighted traffic patterns improving toward February 2019 levels over the last 30 days for every province they track outside of Wuhan, which remains down ~40% YoY. The pickup in Chinese activity is also supported by tracking air quality index changes, as well as NASA satellites. Government responses to the virus have varied, but none, to our knowledge, have been as swift and strict as China's move to impose quarantines on residents in infected areas. As of now, forecasts are calling for 0.8 mmbd of global crude demand growth in 2020, but we see meaningful potential for further reductions as the coronavirus continues to spread.

Global crude demand forecasts have been ratcheted lower as the coronavirus has continued to spread and a number of forecasters have cut their estimates over the past week: OPEC reduced its demand growth forecast 52% to 0.5 mmbd, Goldman Sachs is reportedly calling for a 0.15 mmbd demand contraction in 2020, FGE is reportedly calling for a 0.22 mmbd contraction in 2020, Morgan Stanley reportedly cut its demand growth forecast to 0.5 mmbd, Energy Aspects cut its forecast 29% to 0.2 mmbd, Rystad cuts its growth forecast to 0.5 mmbpd and IHS reportedly expects negative crude demand growth for the full-year driven by a 3.8 mmbd YoY drop in 1Q19.

Conclusion: We expect to see WTI and Brent fall below \$30/bbl in the near-term as the market violently reacts to the prospect of a significant uptick in global supply. We would typically expect demand elasticity to provide some sort of backstop to crude prices in such an oversupplied market but in this case the continued spread of the coronavirus will neutralize any such potential tailwind. Resolution of the coronavirus may bring us back to the \$35-45/bbl range but sustainable upside beyond \$45/bbl will require either a non-OPEC supply response or a reversal of current strategies by OPEC+ members.

Natural Gas

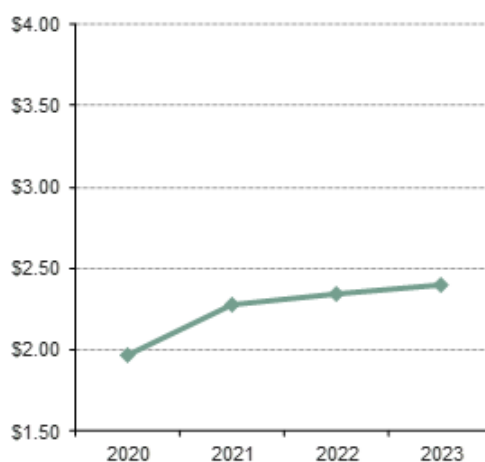
Domestic natural gas prices have been fairly insulated from coronavirus fears given the relatively small portion of domestic production that is exported, but are in the basement nonetheless with NYMEX natural gas prices sitting under \$2/mcf since the third week of the year. The EIA's latest Short Term Energy Outlook included a forecasted 0.4 bcf/d oversupply in the domestic natural gas market this year, which would mark an improvement from the 1.95 bcf/d oversupply situation in 2019.

Natural Gas Price Trends and Expectations

Natural Gas 52-Week Price Trend



Natural Gas Calendar Strips



Source: Bloomberg, CreditSights

Expectations for a narrowing of the natural gas market's oversupply condition in 2020 have been centered on 1.6 bcf/d of higher LNG net exports and 1.1 bcf/d of higher industrial demand, both of which have exposure to the coronavirus. China is not a major importer of U.S. LNG but is one of the most important players in the market. Reduced demand from the country is reverberating globally, with lower global LNG prices reducing the competitiveness of U.S. exports and likely to negatively impact the 6.4 bcf/d of forecasted U.S. LNG exports this year. As of now, the potential for lower LNG exports remains the main coronavirus-related risk to natural gas prices but if the virus spreads domestically there will be a demand impact with respect to industrial end-users which account for more than 25% of domestic demand.

Domestic dry natural gas supply growth is expected to grow 2 bcf/d in 2020 according to the EIA but downward revisions may be in the offing given the weakness in commodity prices. Independent E&Ps with gas-focused asset bases are, by-and-large, facing significant capital constraints in the face of the already-weak natural gas price environment (prices were down 18% in 2019 to average \$2.53/mcf) and will post minimal growth this year as they emphasize balance sheet maintenance and FCF neutrality.

Associated natural gas – which is found with oil reserves – has skyrocketed in the past few years as oil-directed development operations ramped up in the Permian and currently stands at ~20 bcf/d. Further reductions in oil-directed completion and drilling activity onshore in the U.S. as a result of low oil prices (XOM cut back its plans in the Permian on Thursday) could lead to a reduction in associated natural gas supply. The coronavirus has the potential to serve as a catalyst for higher natural gas prices, to the extent that that low oil prices results in a recalibration of associated natural gas production growth (i.e. lower oil-directed drilling and completion activity) and the coronavirus does not significantly impact the domestic economy. We are sharpening our pencils on the associated natural gas production outlook and potential positive impact that lower oil-directed drilling and completion activity could have for domestic natural gas prices.

Subsector Strategies and Playbook

Below, we run through our high-level views on the relative positioning of various energy subsectors. The current price crash carries two bearish factors that were not present when the Saudis opened the taps in 2014 – demand destruction and OPEC+ disarray – which significantly increase uncertainty over both the near and long-term outlooks for crude prices. Additionally, many companies were able to maintain capital markets access during the prior downturn to shore up balance sheets with equity issuance as investors had reason to believe that oil prices would eventually rise as markets repaired themselves. Investor confidence in the sector had largely disappeared prior to the developments of the past couple of months (ESG, consistently negative FCF, renewables, etc.) and the effects of the coronavirus and oil price war will only increase apathy towards the sector.

IG E&Ps: As we highlighted in our **IG Energy outlook**, the overarching theme for IG E&Ps is living within cash flows with the majority of management teams putting together capital budgets under a \$50 or \$55 WTI assumption. In total, capex for IG E&Ps under coverage will decline 7% to \$37bn, primarily driven by OXY, APA and EQT cutting by ~\$1bn, ~\$885mn and \$570mn, respectively. Despite the capex reduction, production from E&Ps under coverage is currently projected to increase 3% to ~7.13 MMboepd. Growth is being driven by new projects coming online and ramping up, including Guyana for HES and Leviathan for NBL, which will see production increases of 15% and 9%, respectively, as well as names with strong balance sheets like PXD (14% increase) and EOG (12%).

IG E&P Capex and Production								
Issuer	Capex (\$mns)				Production (Mboepd)			
	FY18	FY19	FY20E	YoY	FY18	FY19	FY20E	YoY
APA*	\$3,323	\$2,634	\$1,750	(34%)	395	413	416	1%
COP	\$6,750	\$6,636	\$6,400	(4%)	1,243	1,304	1,258	(4%)
CXO	\$2,586	\$3,186	\$2,700	(15%)	263	331	348	5%
DVN	\$2,451	\$1,910	\$1,775	(7%)	295	327	334	2%
EOG	\$6,173	\$6,234	\$6,500	4%	719	818	917	12%
EQT	\$2,739	\$1,772	\$1,200	(32%)	679	689	672	(2%)
HES*	\$1,854	\$2,433	\$3,000	23%	257	290	335	15%
MRO	\$2,779	\$2,514	\$2,400	(5%)	412	414	411	(1%)
NBL*	\$2,664	\$2,263	\$1,700	(25%)	353	361	393	9%
OXY*	\$4,975	\$6,355	\$5,300	(17%)	658	1,346	1,375	2%
PXD	\$3,783	\$2,953	\$3,150	7%	320	346	393	14%
XEC	\$1,670	\$1,242	\$1,300	5%	222	278	278	(0%)
Total	\$41,747	\$40,132	\$37,175	(7%)	5,815	6,917	7,129	3%

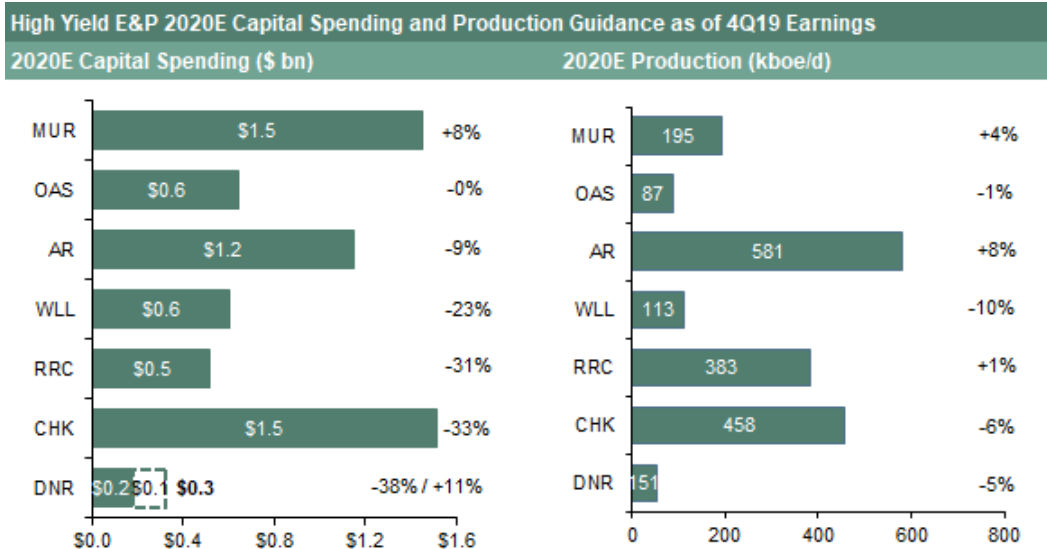
* Standalone capex

FY19E production for OXY is pro forma.

However, as we progressed through earnings season and the uncertainty increased, management teams highlighted their ability to scale back capex and we would expect both capex and production figures to be revised lower. The COVID-19 and OPEC war combination could also derail announced asset sales that have yet to close, impacting names reliant on planned asset sales to improve the balance sheet. OXY would be the most impacted with Algeria and Ghana assets representing \$4.1bn of unclosed divestitures and much more is necessary to repair the balance sheet after OXY took on \$35bn of debt to acquire Anadarko for \$57bn. It's worth noting that after being outbid by OXY, CVX could now turn around and acquire OXY (\$53bn EV) for less than OXY paid for APC just a couple quarters ago. As we saw during the last downturn, the war on shale may also bring some much needed consolidation to the upstream and midstream industries as well capitalized players work through their wish lists.

If OPEC+ doesn't get back together in the near-term, we expect a wave of IG producer downgrades as the agencies reset their price decks lower. While the agencies should feel pressure to act given the leniency of the past few years, we would remind investors that Moody's continues to have a black eye from resetting their price decks at the bottom during the last downturn. This is still regularly brought up by buy-side investors and could result in some restraint from the agencies, providing a near-term runway for IG producers if it appears the price drop will be temporary. For 2020, well hedged names include CXO (69% of crude), HES (76% of crude) and PXD (54% of crude), while APA, COP and NBL entered the year with no hedges in place.

HY E&Ps: The high yield E&P group was skating on thin ice as we entered 2020 and the onset of the coronavirus and the collapse of OPEC+'s supply curtailments may cause the ice to break. Management teams had already pulled out the lower-for-longer playbook with 2020 capital and operating plans that emphasized free cash flow generation, flat-to-lower capital spending, flat-to-lower production, and continued cost reductions. The plans presented during the 4Q19 earnings season over the past few weeks have, by-and-large, amounted to management's best assessment of maintenance capex – the spending necessary to keep production flattish – and were designed to generate at least FCF neutrality at a \$50/bbl price. Additional capital spending reductions are certainly coming down the pike and the attendant production declines in concert with the significantly lower crude price environment will lead to significant declines in Ebitda and cash flow generation, placing even more pressure on already over-leveraged balance sheets. Existing commodity hedge books will provide a buffer against weak prices in 2020 (our oil-weighted coverage has 40-70% of 2020E production hedged) but coverage is light in 2021 and beyond.



Note: Both charts sorted by YoY % Capex change.

DNR budget potentially has an additional \$140-150 mn of spending if Cedar Creek Anticline is FID'd.

Source: Company filings, Creditsights

Numerous companies in the HY E&P space have laid out asset sales programs with the goal of raising cash to pay off debt. These plans faced an uphill battle entering the year given the sluggishness of the E&P M&A market and valuations are certain to come down as potential buyers recalibrate their crude price views. Indeed, many companies that were expected to pay off near-term maturities with asset sales proceeds may find themselves hiring restructuring advisors.

Liability management efforts have been a fairly consistent theme in the CCC/B-rated E&P space for the past few years and given the hit to Ebitda and cash flow, as well as expectations for an even weaker-than-expected M&A environment, the list of companies ripe for a distressed exchange should be expected to rise moving forward. A number of companies that missed refinancing windows over the past 24 months are facing meaningful maturities in 2021-2022 and may need to break out their liability management playbooks. Additionally, the numerous companies that were expected to attempt LME may have missed the "distressed exchange window," as asset valuations in a lower crude price environment may not be sufficient to make upstiering worth it and the coupons required on exchange paper moves prohibitively high.

Oilfield Services: The entirety of the oilfield services value chain will be under significant pressure as the upstream customer base cuts back spending in the face of lower crude prices. North American onshore services providers should bear the brunt of the pain but we would expect prior expectations for mid-single digit growth in International revenues to take a hit as well. Pricing traction is likely out the window and the focus will shift back to cutting costs and managing decremental margins. Stock buybacks should be off the table for diversified IG companies and management teams should be considering dividend cuts. We see risk to IG ratings depending on the duration of the slump.

The offshore drillers simply cannot catch a break. The nascent and shallow recovery that has been moving in fits-and-starts will be heavily impacted by the lower crude price environment: dayrates and utilization are headed lower. The industry's survival of the last crude price rout was aided by the many long-term contracts that had been signed when oil was trading north of \$90/bbl, which included clauses that required make-whole payments for cancellation. There are not many above-market contracts remaining and the make-whole clause is largely a thing of the past so we expect to see cancellations negatively impact backlog.

Refiners: The refiners are best positioned to benefit from the oil price war given the reduction in feedstock costs. Refiners have thus far been largely insulated from the impact of the coronavirus as U.S. products demand has not seen much of an impact, outside of the big hit to jet fuel demand. Lower feedstock costs would be a boon to the refiners in a flat demand environment, but this benefit will be offset by the extent that the coronavirus negatively impacts U.S. economic activity and demand for refined products.

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