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Provided by…
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NYMEX Crude Oil Futures - $50.75/bbl as of 2/5/20
 (compares to $61.06 on 12/31/19, $45.41 on 12/30/18, $60.42 on 12/29/17 & $53.72 on 12/30/16)

NYMEX Natural Gas Futures - $1.86/MMBtu as of 2/5/20
 (compares to $2.09 on 12/31/19, $3.25 on 12/28/18, $3.69 on 12/29/17 & $3.71 on 12/30/16)

Commentary
Energy Market Outlook by Thomas Kelley, Relationship Manager, JD, CTFA & CPL

The US Energy Information Administration (EIA) estimates that global oil markets were roughly balanced in 2019, as global oil supply declined slightly and global oil consumption grew at its slowest pace since 2011. However, both supply and consumption are expected to grow in 2020 as prices are expected to recover from late 2019 levels, as demand regains its mojo and supply growth continues to moderate. A weaker US dollar (brought about by globally accommodative monetary policies and a reduction in economic policy uncertainty) will also support prices.

However, economic uncertainty (as the global economy experienced in 2019) is destructive of demand, and will remain a key factor for prices in 2020. While there is some expectation that economic uncertainty will lessen in 2020, it will remain a relevant pricing issue due to US-China tariff tensions, ongoing hostilities in the Mid-East Gulf, and popular discontent with the political status quo both domestically and globally. Following the recent US House of Representative’s Impeachment and subsequent US Senate acquittal of President Trump, the most visible geopolitical uncertainty, at present, is the upcoming US elections in November. Markets will be forced to keep a weather eye on these conditions going forward.

In the first half of 2020, the global oil inventory builds will contribute to Brent spot prices falling to an average of $62 per barrel (b) by May from an average of $67/b in January. The relatively weak market balances forecasted for the first six months of 2020 occur amid market concerns about potential supply disruptions. However, a forecast of inventory growth and Organization of the Petroleum Exporting Countries and its allies (OPEC-Plus) spare capacity of more than 2.0 million b/d could help reduce any upward price pressure in the case of a limited disruption to oil supply or transportation. For all of 2020, EIA forecasts that Brent prices will average $65/b and $68/b in 2021, while the West Texas Intermediate (WTI) spot price will average $59/b in 2020 and $62/b in 2021.

On the supply side, the market should expect OPEC-Plus crude output to average 29.6 million barrels per day (b/d) in 2020, down by 300,000 b/d from 2019 levels. In the US, shale oil output is expected to grow by just 900,000 b/d in 2020, compared to 1.3 million b/d growth in 2019, and overall US crude output will average 13.3 million b/d. Global oil consumption is expected to rise by 1.3 million b/d, contributing to global oil inventories rising at a pace of 0.3 million b/d.
Supply growth in 2020 will be led by countries that are not members of OPEC-Plus, particularly the US, Norway, Brazil, and Canada. It is expected that US supply growth will account for 1.6 million b/d of the increase in global output we expect for next year, which brings total output to 102.3 million b/d. EIA expects non-OPEC producers will increase oil supply by 2.6 million b/d in 2020, which will more than offset forecast supply declines of 1.0 million b/d from OPEC members and its allies.

Although US crude oil production is projected to increase, the growth has slowed due to the decline in drilling rigs during the past year. EIA expects this trend will continue through most of 2020. Despite the decline in rigs, production is forecast to continue to grow as rig efficiencies and well-level productivity rises, thus offsetting any loss in production attributable to the current decline in rig numbers until anticipated drilling activity accelerates in 2021. Despite falling to nearly 400 active drilling rigs, the Permian region that spans western Texas and eastern New Mexico remains the most prolific crude oil production growth region in the US. Favorable geology, more efficient production from new wells and the development of new technologies have combined to contribute to the Permian region’s years of remaining production.

Recent Developments:

1) OPEC-Plus
OPEC and its allies last year agreed to reduce supply by 1.7 million barrels per day until its next meeting in March 2020, but the group is now likely to reschedule its March 5-6 meeting for February, underscoring the severity of the current market situation and ongoing price declines. With the growing concerns that the coronavirus epidemic will reduce demand from China, OPEC-Plus are debating more aggressive oil output cuts than previously considered after reviewing new data that showed the coronavirus’s deepening impact on global oil demand. China is Saudi Arabia’s most important customer and, along with other Asian countries like India and South Korea, is increasingly vital for the big oil producers around the Persian Gulf. Any slowing of these economies will sap demand for oil, hitting prices and the revenues that the OPEC-Plus governments depend on.

2) USMCA
The new United States-Mexico-Canada Agreement (USMCA) is not only a mutually beneficial win for North American workers, farmers, ranchers, and businesses; but it will play a critical role supporting and growing North American energy integration, interdependence and energy security by eliminating tariffs for crude oil, gasoline, kerosene-type jet fuel and other refined products, and for energy-intensive manufactured goods. When finalized and implemented, the agreement will create more balanced, reciprocal trade that supports and grows the North American economy.

3) US - China Trade War
China recently announced that it will halve additional tariffs on $75 billion worth of US imports, as the world's two largest economies continue to step back from a years-long trade war that has hurt both countries and dented global growth. The move comes as China is grappling with the escalating coronavirus outbreak. The reduction affects US goods that China imposed tariffs on last September. These tariff rollbacks had been widely expected and are seen as a gesture in response to the United States cutting its September round of tariffs by half in the "phase one" trade deal.
4) Brexit

U.S. Secretary of State Mike Pompeo said that the U.S. would put Britain “at the front of the line” in its trade relationships and that the Trump administration had great confidence in the British people as they move ahead outside of the EU framework. He said he expected U.S.-British trade ties to exponentially increase once Britain is freed from EU commercial restrictions. Expect trade negotiations between the U.S. and Britain to begin in earnest before the end of 2020. A trade agreement with Britain will strengthen relations with a key European ally and will also help in reducing economic uncertainty.

The Energy Department, through the Energy Information Administration (EIA), recently published their annual energy outlook overview. Here is a listing of the highlights by David Beeson, Sr. Assist Relationship Manager, CPL

General
- U.S. net imports of crude oil and petroleum product fell from an average of 2.3 million b/d in 2018 to an average of 0.5 million b/d in 2019. This trend is expected to continue for the foreseeable future as the U.S. accounted for nearly 80% of all new production in 2019
- Global demand growth will mostly be centered in non-OPEC countries while global inventories will see a flattening
- Coal production has decreased 9% in 2019 and will continue further to 14% in 2020. The decline in the generation will likely be captured by natural gas power plants

Crude Oil
- Prices appear to have leveled off and will remain stable
- Forecasted average price per EIA for West Texas Intermediate (WTI) in 2020 is $59/bbl and $62/bbl in 2021
- Slowing crude oil production growth is forecast as a result from a decline in drilling activity
- U.S. crude production in 2019 was 12.2 MBPD, 2020 forecast to avg. 13.3 MBPD, 2020 to avg. 13.7 MBPD

Natural Gas
- Prices remain low dropping to $2.57/MMBtu in 2019 down $0.59/MMBtu in 2019
- Forecasted average price per EIA for 2020 is $2.33/MMBtu and $2.54/MMBtu in 2021
- U.S. production is forecast to avg. 94.7 Bcf/d in 2020, a 2.9% increase from the 2019 levels
- Natural gas will produce 37% of the nation’s electricity

Gasoline
- Regular gasoline retail prices are expected to average $2.54 in first quarter of 2020 $0.18 higher than the same time last year
- Forecasted average price per EIA for 2020 and 2021 is $2.63/gal
- National average for December 2015 was less than $2/gal, lowest in almost a decade
- Limited demand and an oversupply look to weaken the Ethanol market seeing a decline of 2.0% in production in 2019

Renewable Energy
- Solar is expected to install up to 13GW of utility-scale capacity to the market in 2020 and another 13GW of capacity in 2021. Small-scale residential solar capacity is expected to be 11GW in 2020 and 2021.
- Wind capacity is expected to increase to 125 GW in 2020 up from 109 in 2019 and 130 GW by 2021
- Geothermal, Biomass, Hydro Electric and other renewable energy source are expected to remain a small portion of the electric market

The above information partially obtained from the Energy Information Administration (EIA) 2020 short-term energy outlook.
Anticipated Leasing Trends
2020 Outlook by Dan Myers, Assist. Relationship Manager

In 2020, Farmers National Company (FNC) anticipates leasing activity to follow similar trends to the prices of oil and natural gas, number of drill permits filed, and number of rigs active in the Continental United States. According to the American Oil & Gas Reporter, the U.S. Rig Count on January 31, 2019 was 1,045 active rigs. As of January 31, 2020, only 790 rigs were active. Although drill permit numbers are reflective of this down tick in rig numbers, FNC plans to market and secure leases in core basins of the United States, and, additionally, in exploratory areas as exploration & production companies look for additional opportunities in the current market. Regions that FNC expects leasing activity to be the most active are the Permian Basin (Midland & Delaware) in west Texas & east New Mexico, SCOOP (South Central Oklahoma Oil Province) in southern Oklahoma, and STACK (Sooner Trend Anadarko Basin Canadian & Kingfisher Counties) in western Oklahoma.

Proactive Marketing
In 2020, FNC will continue to be proactive in our lease marketing efforts. The North American Prospect Expo (NAPE) is one of the largest opportunities that FNC has to market clients’ unleased minerals, connect and network with new potential Lessee’s, and reconnect with existing relationships to develop new opportunities.

NAPE 2020 Results
As always, FNC was strong in attendance at NAPE in February 2020. Seven FNC team members attended and worked to market client acreage that is available for lease as well as client minerals for sale. It is clear that leasing interest is significantly down at this point in most major shale play areas. Close contacts and business associates of FNC indicated that while current activity is down, their businesses are busy running title and preparing for the next waive in leasing activity. FNC is committed to marketing unleased acreage and will continue to do so, even in a down leasing market.
Regional Shale Play Activity

**BAKKEN/WILLISTON (ND, MT)** by Clint Privett, Sr. Assist. Relationship Manager, JD & LLM

Although rig counts in the Bakken have remained lower since mid-2016, production has steadily increased thanks to improved techniques and technology. January 2020 saw new well oil production per rig hit 1,559 barrels/day and February is forecast to increase to 1,598 barrels/day. To operate in the current lower price environment, companies are focusing on bringing costs down and bringing efficiency per well up. The EIA predicts output to increase to 1.526 million barrels/day in February 2020, a 74,000 barrel/day jump from February 2019. Leasing activity has decreased from years past, and operators are now drilling more infill wells to maximize unit output. Continental Resources Vice President, Tony Barrett, reports that the Bakken has seen fewer large completion projects than the Midcontinent and Permian counterparts, which means there is a larger underdeveloped inventory for operators such as Continental.

Continental Resources achieved a roughly 2,000 boepd rate for new Bakken wells in Q3 2019, with approximately 80% of that production in oil. The company has run 6 rigs in the play and completed 57 new wells in Q3. Continental has announced the plan to drill 56 new wells in 2020 in the company’s Long Creek project, currently being held by 5 parent wells. The company currently produces roughly 190,000 boepd from its Bakken assets.

Hess Corporation reports that it will continue to run a 6-rig program and focus on new well completion design to boost well performance. The new completion technique – high-intensity plug and perf – appears to be paying off. In April 2019, Hess completed a 24-hour test utilizing this new technique, and allowed the AM-Bombeck well in McKenzie County to produce without restraint. The well produced 14,662 boe in 24 hours - a record for the state. Nearly half of Hess’s $3 billion 2020 capital expenditure will be spent in the Bakken, and the company estimates it will increase current production by 200,000 boepd by years end. Hess plans to partially achieve this by bringing 175 new wells online this year.

Many operators in the Bakken face gas constraints and have been curtailing Bakken production in order to avoid flaring gas beyond state regulatory standards. This bottleneck should be eased as several gas plants should come online soon, including one being constructed by Hess. As this constraint is lifted, the Bakken should see continued increase in output through 2020.

**APPALACHIAN BASIN (PA, WV, OH)** by Paul Mason, Relationship Manager, JD

Natural gas production and well productivity metrics in Appalachia increased in 2019, so far as yet reported. At the end of the year, daily production of natural gas in the region exceed 30 Bcf. 44 drilling rigs were reportedly operating in Pennsylvania, West Virginia and Ohio, amounting to a substantial reduction, but new gas well production per rig reportedly increased to over 18 MMcf/day.

Prices of natural gas regionally, however, were bearish in 2019, due to reported causes including lack of pipeline takeaway, increase in production of gas nationally (principally attributed to development in the Permian Basin), and mild weather resulting in fewer heating-days and cooling-days and demand for electricity.
The trend appears to be continuing. Reported prices at major Eastern city gates and pipelines as of February 5, 2020, ranged from $1.52/MMBtu at Dominion South in southwest Pennsylvania to $1.84/MMBtu at the Algonquin Citygate in Boston. Meanwhile, the Henry Hub spot price of gas fell to $1.85/MMBtu on January 31, 2020, reported by the Energy Information Administration to be the lowest January Henry Hub price since at least 2014. On the NYMEX, the February 2020 contract reportedly expired at $1.877/MMBtu.

Nonetheless, the single biggest regional story in 2019 was undoubtedly Chevron’s announcement on December 10 that it planned to write down $11 billion in assets, more than half coming from its gas assets in Appalachia, and that it planned to exit the region. Reports since have speculated on pressure that might put on other regional producers, while it remains to be seen how Chevron might divest its Appalachia assets and how the market might absorb them.

More positively, the USGS released two new Assessments in 2019, one of Undiscovered Gas Resources in the Middle Devonian Marcellus Shale of the Appalachian Basin Province, finding with 95% probability there to be the amount of 34,359 Bcf of undiscovered gas in six different Assessment Units, and one of Undiscovered Oil and Gas Resources in the Upper Point Pleasant Formation and Utica Shale of the Appalachian Basin Province, finding with 95% probability there to be the amount of 21,324 Bcf of undiscovered gas in two different Assessment Units.

**MID-CONTINENT (OK) by Clint Privett, Sr. Assist. Relationship Manager, JD & LLM**
The majority of activity in the mid-con region continues to be focused on the SCOOP/STACK plays in Oklahoma. Similar to the Bakken, rig counts fell during 2019 while production increased overall. This was partially achieved by better production from new wells, but also through completion of drilled uncompleted wells (DUCs). December 2019 alone saw the completion of 54 DUCs in the Anadarko Basin. This trend is likely to hold steady through 2020 with decreased leasing activity and increased infill drilling.

Continental reported Q3 2019 production of 80,115 boepd from the SCOOP and 53,070 boepd from its STACK assets. This was largely driven by the ongoing development of the SpringBoard project, which has produced 8.7 million gross barrels to date. In the STACK, the company reported that the Reba Jo and Shchulte units (Blaine County), which contain 14-unit wells, flowed an average initial 24-hour rate of 4,092 boepd per well for a combined rate of 57,292 boepd.

**WEST TEXAS- PERMIAN BASIN (TX, NM) by Clint Privett, Sr. Assist. Relationship Manager, JD & LLM**
The Permian Basin continues to dominate oil and gas production in the lower 48. The region will continue to produce roughly half of all US output in 2020, with current production levels at 4.8 million barrels/day. Although rig decline in the Permian has not been as sharp as other areas, the number of active rigs has seen a decline over the course of 2019. Leasing has slowed since much of the available core acreage has been held by production or is under a current lease, but there are still opportunities in the region as leasing activity continues outside of core areas.

Output from the Permian is forecast to increase throughout 2020, albeit at a slower rate than years past. Chevron plans to increase production to 600,000 barrels/day by the end of 2020 and increase that number to 900,000 barrels/day by 2023. Exxon plans to produce 1,000,000 barrels/day by 2024.

*The above information partially obtained from the EIA and American Association of Professional Landmen’s (AAPL) publications.*
## Rotary Rig Count

by Kayla Rowan, Relationship Manager

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The above information partially obtained from Baker Hughes Northern America Rotary Rig Count dated 1/30/2020
Figure 3. U.S. crude oil production in the AEO2020 Reference case

million barrels per day

Source: U.S. Energy Information Administration, Annual Energy Outlook 2020
Figure 1. U.S. crude oil production in the *Annual Energy Outlook* cases

U.S. natural gas prices
dollars per thousand cubic feet

Monthly crude oil prices (Jan 2016-Dec 2021)
dollars per barrel

Sources: Short-Term Energy Outlook, January 2020, and Refinitiv