

## 3 THINGS YOU MAY NOT KNOW...

1. I am a pretty advanced chess player.
2. I spend a lot of my free time cooking pretty difficult dishes.
3. I was almost expelled from the university the first year of my Bachelor's degree, because I tried to spend the night inside the main university building (just for fun).



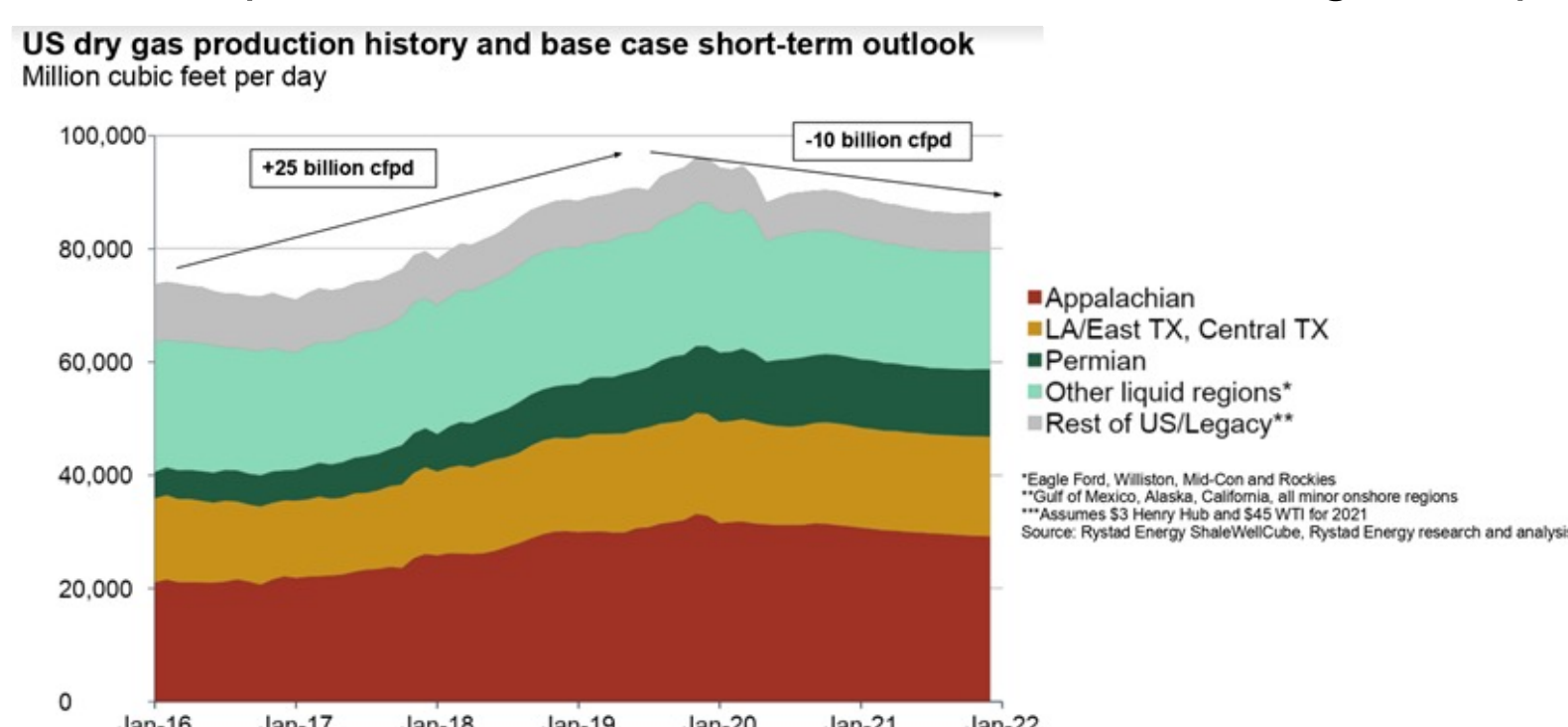
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## Q&A Another New Age of an Old Industry

### How is the reduction in associated gas from oil wells and the surge in EVs going to impact the demand for Natural Gas?

We started the year with oversupplied US gas markets despite record-high LNG exports. The oversupply was driven by both strong production performance in 4Q19 and mild winter conditions. Gas prices responded promptly and then the oil market downturn came in March. Dry gas production in the US had declined by ~8 billion cfpd by May -but- LNG exports nearly stopped amid weak global gas markets (in Asia and Europe). The market hoped to see faster reduction in associated gas output from oil basins, however, much of the lost associated gas returned on production in 3Q20 when production curtailments were reactivated. The Permian Basin exhibits particularly resilient gas output, supported by maturation of the base output (typical for oil basins during the downturn). While US LNG exports started recovering in late-August, the market remains cautious about total demand projections next year. So, Henry Hub strip for 2021 averages \$3 per MMBtu. This is sufficient for gas-focused producers in Appalachia and Haynesville to go for maintenance capital programs (modest growth could be expected for selected producers), but it is not enough to trigger a new up cycle. If LNG exports are truly incentivized and full recovery is needed, structural supply deficit in the US cannot be avoided next year in the current price environment. Either WTI of \$50 or Henry Hub of \$3.5-4.0 is needed now to incentivize substantial incremental gas production from either oil or gas basins for the next 9-12 month horizon. In the long-term, domestic gas demand in the US is expected to remain robust. While some structural energy transition trends are happening already, they first affect medium-term projections for oil consumption. On the gas side, we are yet to fully displace coal in the power generation segment so even with increasing penetration of solar and offshore wind, there are good growth prospects for US gas consumption. In 2019, domestic gas consumption in the US averaged 85 billion cfpd. In the most conservative scenario, we anticipate that it will surpass 90 billion cfpd in the late-20s (upside potential suggests long-term peak of 95 billion cfpd in the early 30s).



### How are new technologies, software, or data management changing the marketing and evaluation of oil and gas properties? (Or changing returns over time)

All segments of the oil & gas industry have been exposed to automation and digitalization processes in recent years. The decisions are made much faster these days, thanks to better availability of high quality data and powerful software which covers all common evaluation workflows. Ultimately, we are seeing continuous focus of the industry on cost efficiency. Many cost efficiencies come from operational aspects (improved project design, standardization of drilling and completion techniques and innovative technologies), but, the decision-making process became much more data-driven which also contributed to cost efficiencies in the industry. One example would be adoption of various data feeds. Our customers are now able to take our data and push it into their systems quickly and efficiently using cloud-based data storage with direct API connectivity. The shift in this direction resulted in significant simplification of data management workflows for our clients and saved a lot of time and costs on their side.

### Potential policy impact on O&G after elections?

The future of oil & gas activity on federal land remains uncertain. In the US onshore, the Delaware/New Mexico and Powder River basins along with parts of the Utica and Bakken are exposed. We saw several operators fast-tracking the permitting process on federal acreage in the last 3-4 quarters to protect themselves against potential “adverse effects” of the election. In the Gulf of Mexico and Alaska, significant low cost oil potential is yet to be discovered, so, if no new lease rounds are held, most of this potential might never be discovered and developed. Meanwhile, we do not think there are any realistic scenarios which will ban all new oil & gas activity on already producing fields and discovered projects. From a macro perspective, if Biden wins the election, the US oil & gas industry might benefit from this in the short-term, though this will come as an indirect impact. We think it is possible that the relationships between the US and China will improve under Biden’s administration. Ultimately, we might see the end of the trade war – very positive for the global economy and eventually for global oil consumption. Higher oil prices will incentivize additional activity in US oil. Meanwhile, from a long-term perspective, we will likely see an acceleration of the energy transition process in the US under Biden’s administration.

### Thoughts on the current bid/ask spread and what might close the gap?

The biggest challenge for US onshore corporate M&A markets right now is too much debt among potential targets and the lack of willingness among potential buyers to assume new debt. In addition, any downturn results in an increase of bid/ask spreads when it is accompanied by the lack of external capital injection into the industry. I say “any downturn”, but in reality this downturn is quite unique as in 2015-2016 we had a large number of investors willing to make a bet on both better oil prices and steep learning curve in the future. As a result, a lot of capital was available and the M&A market was hot. Now we have a lot of mid-size producers (both private and public operators) in the Permian Basin who are willing to exit. However, they are pretty far into the game (and, arguably know how to maximize acreage value) and they are unwilling to use a \$40 WTI deck as the implied oil price for deal value. Meanwhile, buyers are not ready to assume “standard” \$50 WTI in the deal valuation either - especially if they are to take a target with poor financials.

### What is the ideal size of debt in the Capital structure?

The industry did a pretty good job in 2018-2019 on reducing total debt. However, given poor stock market performance, leverage ratios of many tight oil producers still look unsustainable in the long-term from the investor perspective. Optimal leverage ratio is a function of where you are in your growth cycle. I do not think we should use supermajors as a role model for mature tight oil producers, so even 5-10 years down the road I think we will see just a small number of the largest tight oil producers with single-digit percentage of debt in total capital structure. The average for the industry (especially, if we see a new up cycle in the future) will likely move towards 20-25% over time.

### What is something interesting that you picked up during Covid Quarantine?

The most positive impact of quarantine on my life was that I returned to regular outdoor running.

**Management Article of the Month - “The Spend Control Tower”**

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