HISTORIC REVERSAL OF FORTUNE:
US Natural Gas Production Could Plummet This Summer

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The world as we know it has flipped on its head over the past 30 days. The US went from full employment to 17 million Americans filing for unemployment. The White House has discussed how the US might participate in joint action with OPEC+. Oil producers who were searching for every way to cut G&A by $0.25 per barrel are now inquiring about the ability to dispose of oil down disposal wells when crude storage fills. But what hasn't received enough attention is the impact of this new world on natural gas markets. The stage is being set for what could be a historic swing in fortune in natural gas markets.

To say that US natural gas producers have had a rough couple of years is an understatement. Equity valuations have cratered as investors soured on uneconomic growth for growth's sake. Associated gas from crude oil development has been growing at nearly the same pace as demand, and renewables are gaining market share in the power sector that many had earmarked for gas-fired generation.

Most of the large publicly traded gas producers have taken meaningful steps to appease investors, focusing on returns rather than growth and moving to pay down substantial debt burdens. However, gas pricing hasn't provided any favors, as mild weather has capped natural gas prices below $2/MMbtu for most of 2020.

But the one-two punch of COVID-19 and an OPEC+ price war is changing everything. We highlighted three weeks ago in our commentary that US producers were on a collision course with shut-ins as storage nears capacity. As the latest US weekly data (April 3, 2020) showed last week, US stocks are soaring with over 2.1 MMb/d of crude and an additional 2.5 MMb/d of refined products entering storage. Very soon crude will have no place to go. It appears highly likely that millions of barrels of US oil will soon be shut in even with OPEC+ curtailment agreements.

Activity in the field has been cut along with capital budgets, but more cuts are on the way. After all, it will be hard to make a case for bringing new wells online when wells that are already producing will need to be shut-in to balance physical market constraints.

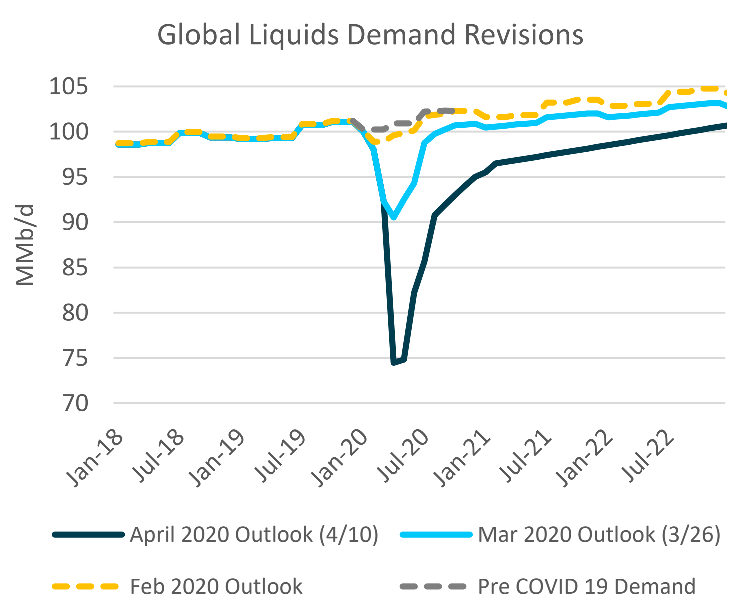
Lowering completion activity, curtailing existing wells, and shutting in wells will all be a part of the solution to re-balancing oil markets. But those same curtailments and shut-ins compounded with lower levels of activity in oil plays could cause massive impacts to the balance of the natural gas market in 2020.

Before stepping through the analysis, note that all analysis in this supplement represents working drafts of BTU estimates and are very likely to be revised. BTU Analytics has decided to publish our working estimates outside of the normal publication cycle due to the need to highlight risks and opportunities currently present in the market.

Magnitude of Oil Shut-Ins

Oil produced in the US either goes to refineries, exports or storage. But COVID-19 lockdowns have demand for gasoline, jet fuel and other refined products plummeting. In the last 4 weeks alone, US petroleum product supplied dropped from the February 2020 average of 20.4 MMb/d to just 14.4 MMb/d from March 28th to April 3rd. This represents a drop-in demand of nearly 6.0 MMb/d.

As a result, refineries are lowering utilizations and Marathon has announced a plan to idle its Gallup New Mexico Refinery beginning April 15. This is true not only here but globally. BTU Analytics currently estimates that global demand will drop by 26.4 MMb/d from December 2019 levels of 101.1 MMb/d in April and May. As lockdown orders begin to ease by the end of May, demand will begin what is likely to be a slow recovery, as individual cities, states, and countries pursue their own strategies for ending lockdowns. Structural changes are also likely ahead, with significant reductions in jet fuel consumption and diminished consumption of gasoline and diesel fuel ahead that could take years to recover from.



As the impact of COVID-19 spreads, the expectations around demand destruction from the virus increases almost daily as more countries enter lockdown and economic impacts reduce the rate of rebound in the system.

Source: BTU Analytics, IEA, Updated 4/10/2020

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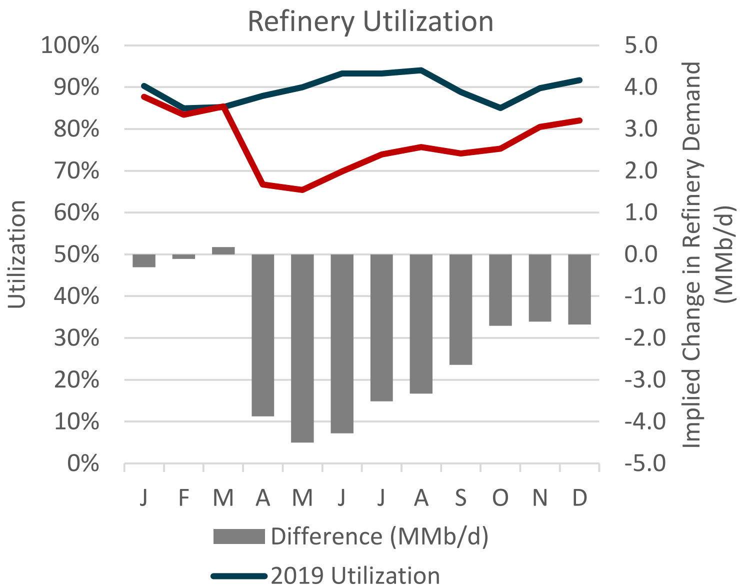
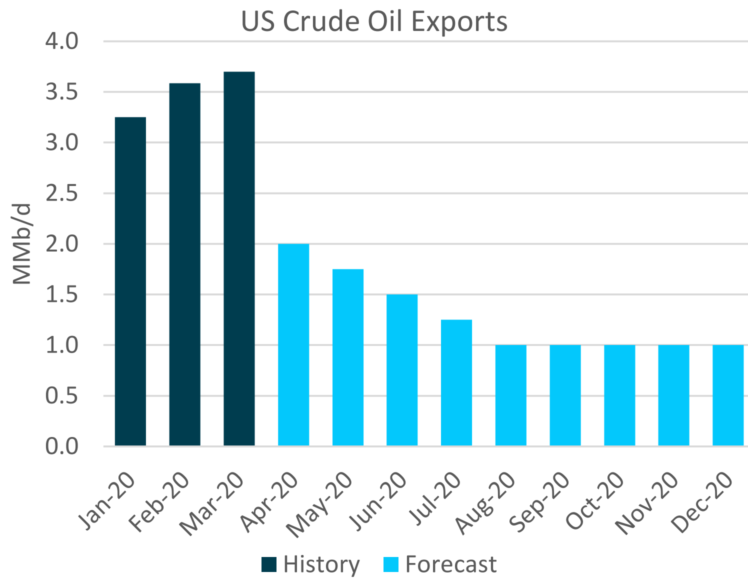
BTU Analytics now models a drop of 10.7 MMb/d in 2020 demand compared to 2019 and a drop of 2.8 MMb/d in 2021 compared to 2019. These drops, even in the face of OPEC+ cuts of 5.6 MMb/d (Full year 2020 with 100% compliance), leave global storage filled to the brim.

As a result, materially lower refinery utilization in the US in the absence of growing exports and filling storage means shut-ins may soon be the reality.



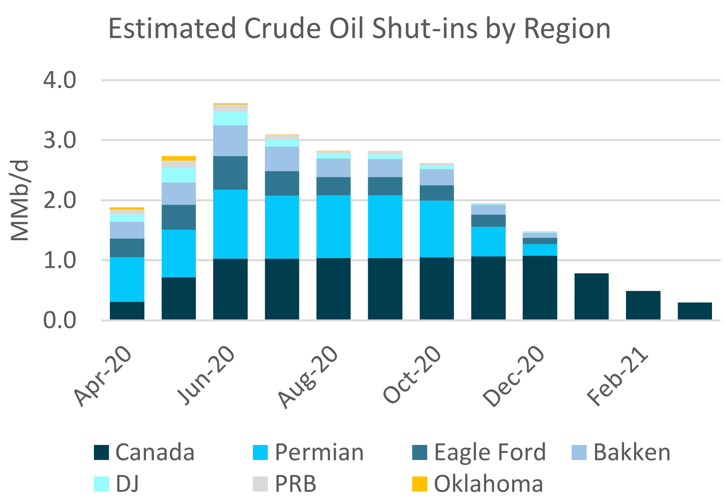


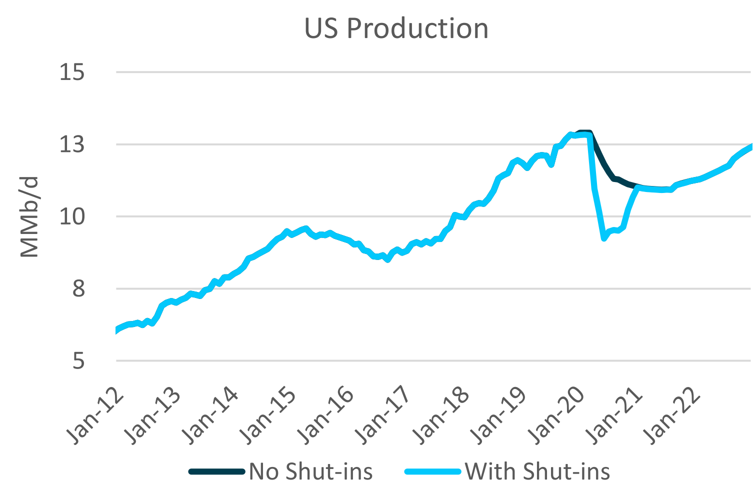
Lower refinery utilizations and declines in crude oil exports likely to force significant shut-ins as storage fills.

Source: BTU Analytics, Updated 4/12/2020

BTU currently estimates that US refinery utilizations will average 74% through the end of the year, down from 90% utilization over the same period last year, resulting in refinery demand falling on average 3MMb/d from April to December. At the same time refinery utilization is plummeting, the demand for barrels on the water is drying up. Crude exports could fall by as much as 2.5 MMb/d over the next several months as countries around the world remain in lockdown and struggle with reactivating economies. With storage at capacity and a lack of export markets, US and Canadian producers are likely to be forced to curtail and shut-in existing production.

The chart below illustrates the impact to crude oil production using a working draft of BTU's production forecast. BTU is modeling crude oil shut-ins of up to 3.5MMb/d in June, which tail off by the end of 2020. These shut-ins are in addition to a significant drop of up to 80% in completions across many of the plays as producers defer most completion activity in 2Q2020 to conserve cash and avoid the worst of the physical constraints on the crude market.



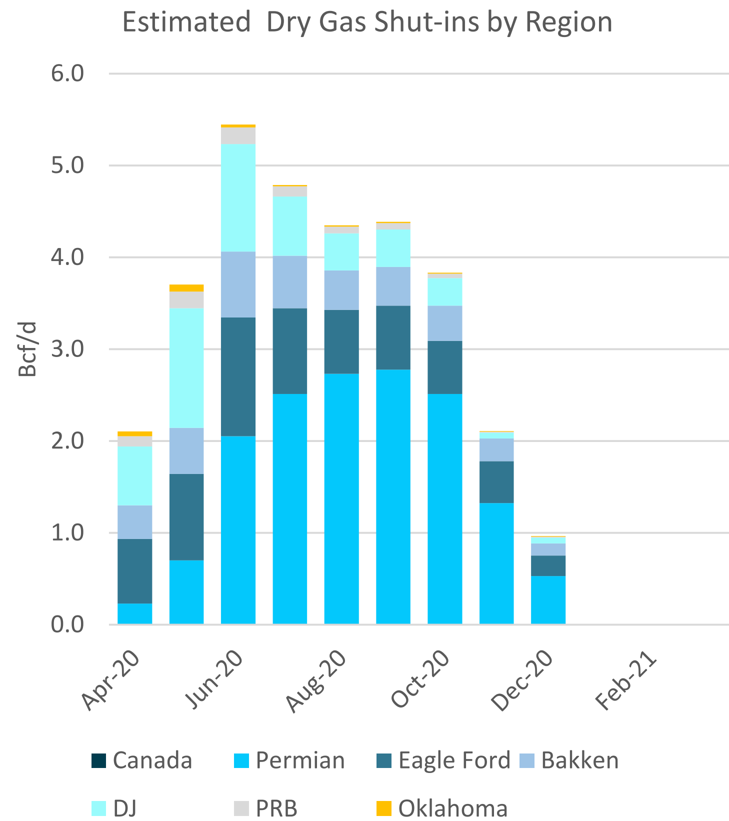


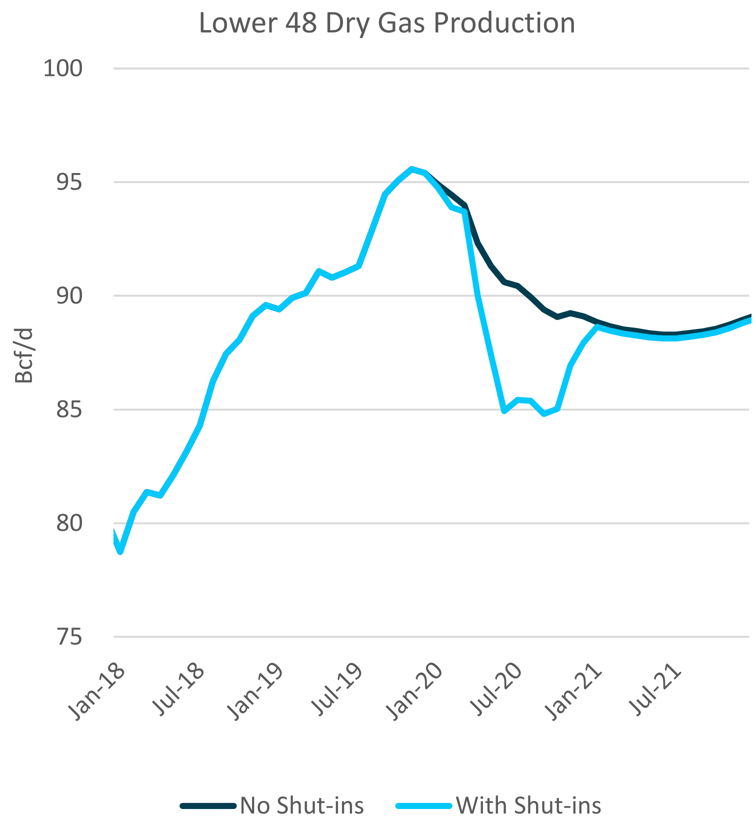
Current modeling indicates US crude shut-ins could peak over 3.5 MMb/d in early summer even as completions fall dramatically in major plays.

Source: BTU Analytics, Updated 4/13/2020

Impact of Oil Shut-Ins on Gas Production

What impact are these shut-ins expected to have on gas production? The slide below highlights both estimates for the volume of dry gas that will be lost with shut-ins and the trajectory of US L48 dry gas production into 2021 based on significantly reduced oil completion activity.





Dry gas shut-ins could peak over 5 Bcf/d just a few months from now.

Source: BTU Analytics, Updated 4/13/2020

Market pricing for gas doesn't currently reflect the risks in 2020 or provide enough incentives to fix a potentially historic 2021 imbalance. While COVID-19 has had a dramatic impact on crude oil demand over the last several weeks, the impact to natural gas demand so far has been relatively muted in comparison to oil markets. Deliveries to industrial customers from interstate pipelines have declined by 8.6% compared to the same week in April 2019 driven by drops in deliveries to ethanol and methanol producers severally impacted by refined product demand destruction. Deliveries to local distribution companies remained flat to 2019 levels. Deliveries to power generators remain up as generation across the major ISOs for natural gas highlights a nearly 9% gain compared to this time last year. Exports to Mexico and LNG continue to remain robust for now, but may be at risk should the production declines highlighted in this analysis come to fruition. Should gas production follow the path anticipated in the analysis above, gas prices will have to move higher to discourage US LNG exports and provide gas producers enough cash to return rigs to the field.

Market dynamics remain in flux. Feel free to call our analyst team to discuss current dynamics as well as opportunities and significant risks inherent in our assumptions and forecasts.