

## Oil and Natural Gas Production Update

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The New Mexico Tax Research Institute reports state and local government revenue attributable to the oil and gas industry totaled \$4.7 billion in FY20. Revenues from the industry’s activity include production and ad valorem taxes, royalties and bonuses, income taxes, gross receipts and other sales taxes, and various permitting fees. The significant contributions in tax and royalty collections affect state and local general funds, bonding capacity, and distributions to the permanent funds. These revenues support education, healthcare and human services, and public safety funding across the state.

### New Mexico Production Recovery

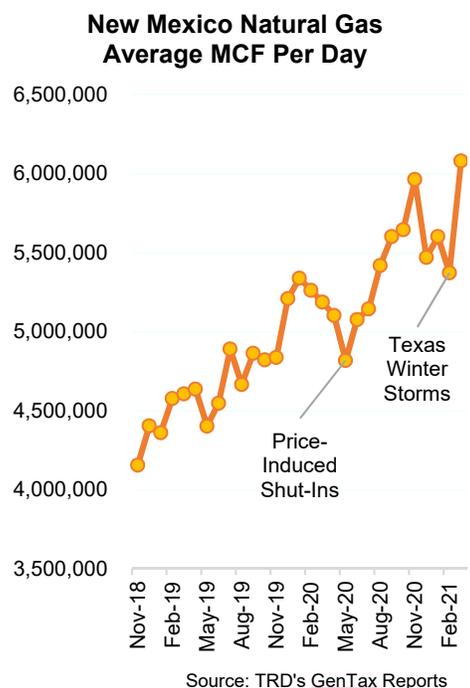
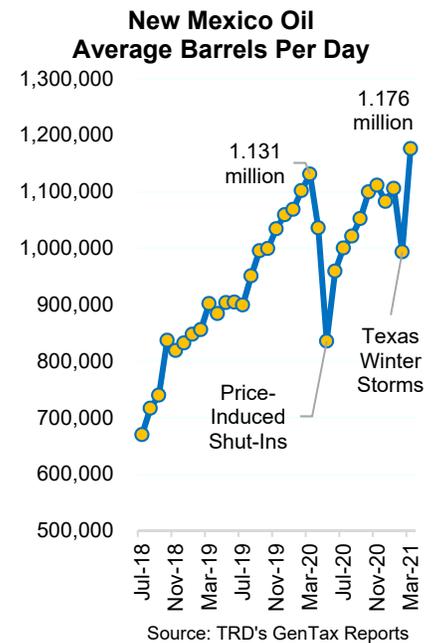
The oil price crash that began in March 2020 caused a rapid decline in drilling rigs, with active rigs in the state falling from a peak of 117 rigs in mid-March 2020 to 48 rigs in July 2020. By early June 2021, the state had 73 active rigs, nearly 38 percent below pre-pandemic peaks (see chart on page 3).

Despite fewer active drilling rigs to drill new wells, New Mexico oil and natural gas producers are completing inventories of previously drilled but uncompleted wells, leading to a recovery in production. By October 2020, daily oil production neared its pre-pandemic levels and daily natural gas production was up 17 percent from the same month the prior year. By March 2021, both oil and natural gas production hit new records – the state produced 36.5 million barrels of oil and 188 trillion cubic feet of natural gas that month.

New Mexico is the only top oil-producing state to have recovered to pre-pandemic levels of production, with daily oil production in the state exceeding that of North Dakota in March 2021 (see Attachment 1). While Texas production was down 12.7 percent that month from the same month a year ago, and North Dakota production was down 27 percent, New Mexico’s production in March was up 4 percent on a year-over-year basis.

The production recovery is supported by a the faster-than-expected recovery in oil prices. Oil prices in the state plummeted below \$15 per barrel in April 2020 and had recovered to just \$38/bbl in November 2020, the latest month of actual data available for the 2021 mid-session consensus forecast. However, a rise in global oil demand in early 2021 following the rollout of several Covid-19 vaccines, combined with continued production cuts from OPEC, led to a sharp increase in oil prices. New Mexico oil prices averaged over \$61/bbl in March 2021, and West Texas Intermediate (WTI) oil prices reached \$70/bbl in early June – New Mexico’s oil prices are currently tracking at about \$2 below WTI prices.

New Mexico oil prices are on track to average \$49.50/bbl for FY21, above the February consensus forecasted average price of \$43.50/bbl. Based on projections from the Energy Information Administration, IHS Markit, and oil market futures, oil prices in New Mexico for FY22 are on track to average \$59/bbl, well above the previous consensus forecast of \$47/bbl. Higher-than-

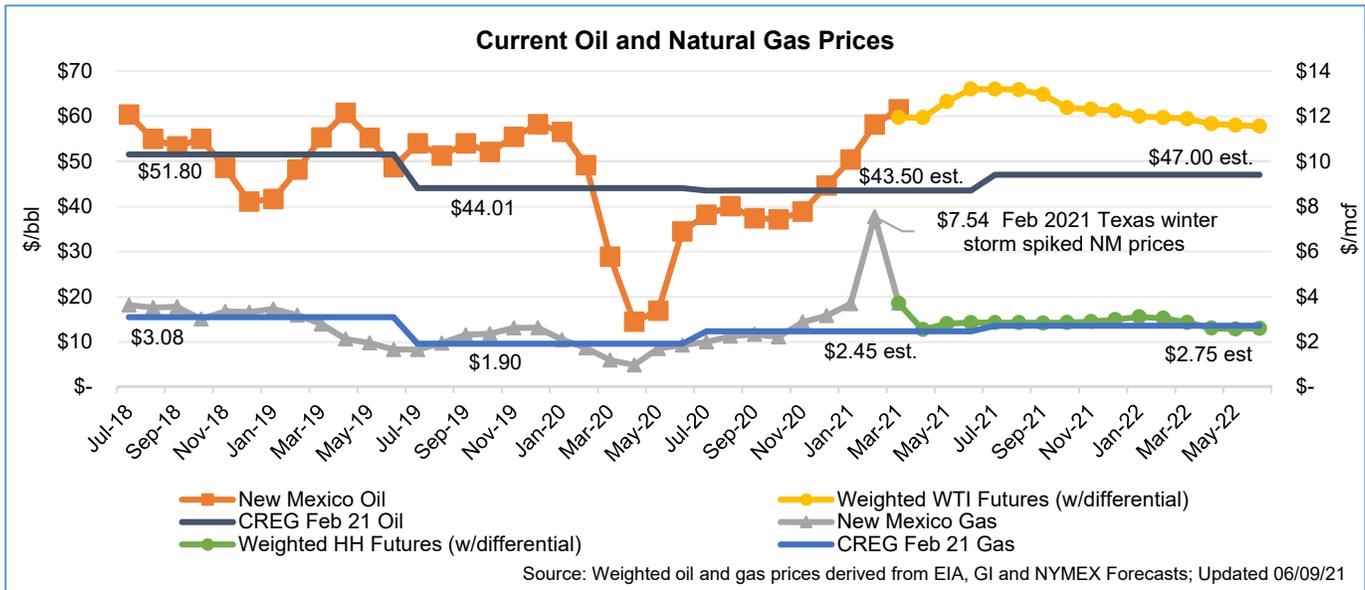


expected prices and recovering volumes are driving oil- and natural gas-related revenue collections to exceed expectations from the February consensus forecast.

### Texas Winter Storm – Impact on NM Production and Prices

Severe cold-weather temperatures in February 2021 caused total U.S. oil production to plunge more than 2 million barrels per day, primarily in the Permian basin, with several refineries forced to close and many producers having to curtail deliveries due to the historic freeze in the region. The winter storms led average daily oil production in New Mexico to fall 10 percent in February compared with the previous month, along with a drop in associated natural gas production from affected oil wells.

New Mexico’s statewide average price for natural gas spiked to \$7.54/mcf in February, since the sharp drop in production was coupled with a strong increase in demand. The natural gas price increase more than offset the production losses, driving up the taxable value of New Mexico’s natural gas and leading to increased severance tax revenue collections and royalty payments in February despite production declines.



## Federal Policies Affecting New Mexico Production

Any changes to the federal regulatory environment will affect New Mexico, since over half of the state’s oil and gas production occurs on federal lands and oil and gas activity accounts for about 30 percent of the state’s general fund revenues (excluding distributions from the permanents and of excess revenue to reserves – see chart in Attachment 3). Therefore, it is necessary to carefully review actions affecting federal lands and evaluate the potential short-term and long-term impacts to the state.

### Federal Permitting

On January 20, 2021, the Department of the Interior (DOI) issued Order No. 3395 temporarily suspending delegated authority of Bureau of Land

Management (BLM) staff to approve permits for drilling on federal lands and granting rights of way and easements. The order did not prohibit approvals during the 60-day period, but instead required higher levels of approval.

**Overall, the temporary order had a small effect on drilling permits during the 60-day period.** In anticipation of a change in the federal administration, operators had already secured hundreds of federal drilling permits, and there are thousands of drilled-but-uncompleted (DUC) wells in the Permian basin. Energy analytics firms Enverus and Rystad Energy both reported this inventory of drilling permits and DUCs is sufficient to sustain current operations for a period of one-to-three years, particularly for larger operators – the top 20 operators in the state account for about 90 percent New Mexico’s oil production.

However, Order No. 3395 was expected to affect short-term operations on existing federal land leases insofar as operators experienced delays or interference in obtaining necessary rights of way and easements to connect drilled wells to a pipeline. Additionally, the order created significant uncertainty within the industry on whether and how the order could be extended or expanded after the 60-day period.

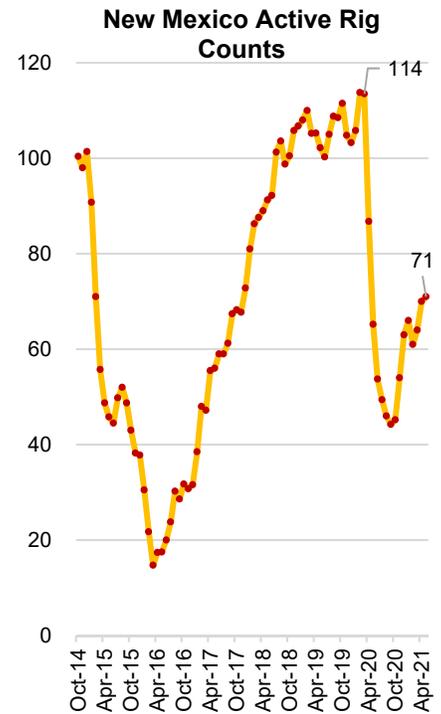
**The order expired in March 2021 and was not extended.** In late March, BLM field offices resumed authority to issue permits. State economists had planned to use actual data for February and March to retrospectively evaluate the effects of the order. However, the impact of cold-weather temperatures on the Permian Basin in February distorts the data, making it difficult to separate out any potential effects of the temporary order.

During the 60-day period of the order’s effectiveness, BLM reports that nearly all permit applications were ultimately approved. While uncertainty regarding the order may have led some operators to mitigate investment plans, the extent to which this occurred is unknown. However, current production in New Mexico is exceeding previous peaks, well completions in the Permian are on the rise, and rig counts in New Mexico are now above the levels in January 2020 prior to the issuance of the order.

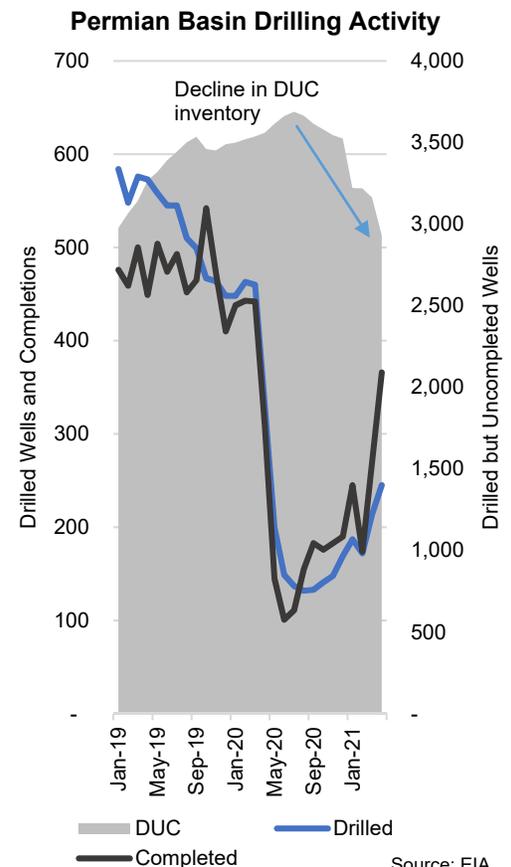
### Moratorium on Federal Land Leases

Section 208 of President Biden’s Executive Order dated January 27, 2021 instructs the Department of the Interior (DOI) to indefinitely pause new oil and natural gas leases on public lands and offshore waters pending a completion of a comprehensive review of federal oil and gas permitting and leasing practices. The review will also consider whether to adjust royalties associated with coal, oil, and gas resources extracted from public lands and offshore waters.

**In mid-June, a Louisiana federal judge blocked the Biden Administration’s ban on new oil and gas leases.** A lawsuit filed by 13 states in March states the order was undertaken without the required comment periods and other bureaucratic steps. The judge granted a preliminary injunction, citing federal laws that say the agency is required to sell the leases. The decision requires DOI to immediately restart its leasing program while the litigation continues. The Interior Department said it



Source: Baker-Hughes



Source: EIA

would comply with the judge’s order, which applies nationwide, but also stated it will continue to review current leasing and permitting practices.

**BLM reports about 90 percent of New Mexico’s federal acreage under lease for oil and gas operations are currently held by production.** The “held by production” clause allows the lessee to continue drilling activities on the property as long as it is economically producing a minimum amount of oil or gas. Essentially, miners for oil, gas, and minerals can extend their land leases after they expire as long as the mines are still productive. Due to this clause, most federal acreage in the state currently under lease will still be able to obtain drilling permits, even if the leasing pause holds up following litigation. This would also be the case for the remainder of current leases as long as those producers start production within their lease period.

While the leasing pause would allow for continued drilling on leases that are held by production, the order would affect exploratory production – i.e. locating new potential sites for oil and gas extraction – and investment decisions in the state. This could result in less production growth than would otherwise be achieved if no leasing pause were in effect.

**Analysis by the Dallas Fed finds a leasing pause would affect future production in the state.** In a June 2021 analysis of New Mexico production, assuming no new federal leasing but existing leaseholders continue receiving drilling permits (see “Hybrid Case” in sidebar), the Federal Reserve Bank of Dallas (i.e. “Dallas Fed”) projects more rigorous permit review, slower approvals, and a costlier operating environment will lead firms with acreage in New Mexico’s portion of the Permian to gradually relocate drilling rigs and completion crews to their nonfederal locations. The analysis estimates New Mexico’s output would be less in 2025 than it would be under a no leasing pause scenario. However, the daily oil production in 2025 under this scenario is still higher than the daily oil production in early 2021 (see chart on Attachment 2).

Notably, it is also possible for production on New Mexico’s federal lands to increase in the near-term as producers seek to utilize their stockpiles of existing DUCs and federal drilling permits. However, once those inventories are exhausted, production could slow or decline if companies choose to focus future production on non-federal land. For example, in both the hybrid and restrictive scenarios of the Dallas Fed analysis, New Mexico production increases in the first year before production declines begin.

## Preparing for an Energy Transition

As the world transitions away from fossil fuels, the state’s production outlook could change, particularly if global demand for oil and natural gas declines or if federal policy changes discourage oil and natural gas investment.

### Net-Zero Carbon Emissions by 2050

The Biden Administration announced a target of cutting U.S. carbon emissions in half by 2030 and a target of net-zero U.S. carbon emissions by 2050, a goal shared by 59 other countries. In a May 2021 report, the International Energy Agency (IEA) calls this an achievable but “formidable” goal that would “require nothing short of the complete transformation of the global energy

#### Federal Oil and Gas Policies in the Permian Basin

The Federal Reserve Bank of Dallas performed a scenario analysis of production in New Mexico’s portion of the Permian Basin. The scenarios include:

1. A Reference Case where drilling and completion activity continues at its current pace;
2. A Hybrid Case where federal oil and gas leasing ends but drilling permits on existing leases are issued; and,
3. A Restrictive Case where federal leasing ends and permit extensions are not granted for existing leases beginning in January 2022.

The analysis shows that some rigs and employment would relocate from New Mexico to Texas in the Hybrid Case, with the pace accelerating in the Restrictive Case.

The production impacts in the Hybrid Case represent an opportunity cost to the state (less growth than could otherwise be achieved), while the production impacts in the Restrictive Case reflect declines from current levels that would result in an actual drop in state revenue collections.

See Attachment 2 for more detail.

Source: Golding & Patel, Federal Reserve Bank of Dallas, June 2021

system.”<sup>1</sup> The report also notes, however, that climate pledges by governments to date would fall short of what is required to bring global energy-related carbon dioxide emissions to net-zero by 2050.

The IEA report states that actually reaching the net-zero goal by 2050 would require steps such as immediately halting investment in new fossil fuel supply projects, halting sales of new internal combustion engine passenger cars by 2035, and phasing out all unabated coal and oil power plants by 2040. While such drastic measures have not occurred in the U.S. to date, additional federal regulatory changes in the coming years could affect the oil and gas industry in the U.S. and New Mexico.

Rystad Energy notes that in a sustainable development scenario, exploration and production investments may never return to pre-Covid-19 levels. Nevertheless, the energy analytics firm points out several key obstacles to IEA’s net-zero scenario, including the lack of a regulatory framework, immature technologies in some low-carbon sectors, need for new infrastructure, lack of economic diversification for some countries, and need for a structural change in global energy demand.

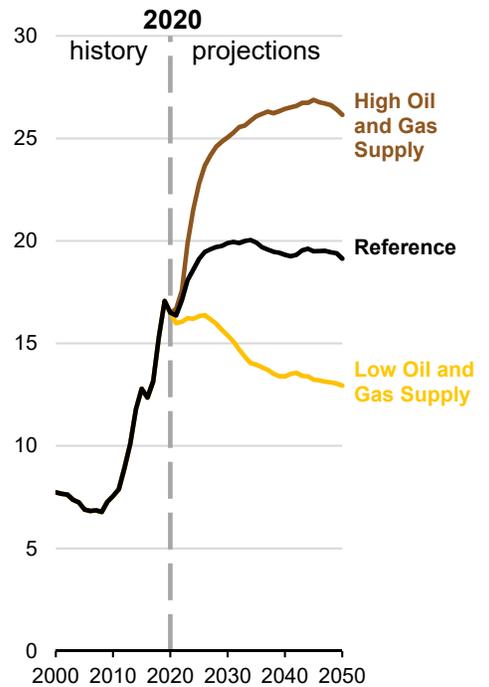
Therefore, even in the most aggressive energy transition scenario, Rystad states investment in oil and gas exploration and production projects is still needed to meet global demand, but the energy transition may leave countries highly dependent on tax revenue from the upstream industry with “no other option” than to diversify their economy to sustain budgets.<sup>2</sup>

### Proposal for Energy Transition Payments to States

In mid-May 2021, U.S. Senator Martin Heinrich introduced federal legislation to provide relief to state and local governments reliant on fossil fuels for operational revenue. The bill, known as the Schools and State Budget Certainty Act<sup>3</sup>, would provide “energy transition payments” to state and local governments if their federal oil and gas royalties (i.e. federal mineral leasing payments) fall below a baseline level. Heinrich’s office states the bill’s intent is to provide budget certainty for fossil fuel-dependent areas by guaranteeing receipt of a certain level of federal revenue as the energy market pushes for lower-carbon sources. However, the bill would not address potential declines in other sources from which the state receives oil and gas revenue (such as severance taxes and gross receipts taxes).

In its current form, the baseline level is determined by the five-year average federal mineral leasing (FML) disbursement for the federal fiscal years 2016 to 2020. The baseline amount would decline by 5 percent per year beginning in FFY 2022, continuing into perpetuity. If federal mineral leasing payments would fall below the baseline amount, the federal government would make energy transition payments to the state equal to the difference of the baseline amount and actual FML revenue. If actual revenues exceed the baseline amount, no energy transition payment would occur.

**U.S. crude oil and natural gas plant liquids production, AEO2021 oil and gas supply cases**  
million barrels per day



Source: U.S. Energy Information Administration, *Annual Energy Outlook 2021*

<sup>1</sup> <https://www.iea.org/reports/net-zero-by-2050>

<sup>2</sup> <https://www.rystadenergy.com/newsevents/news/press-releases/global-petrostates-can-forget-trillion-dollar-oil-and-gas-tax-revenues-as-energy-transition-bites/>

<sup>3</sup> <https://www.heinrich.senate.gov/download/schools-and-state-budgets-certainty-act-of-2021>

### Energy Transition Payment Scenarios

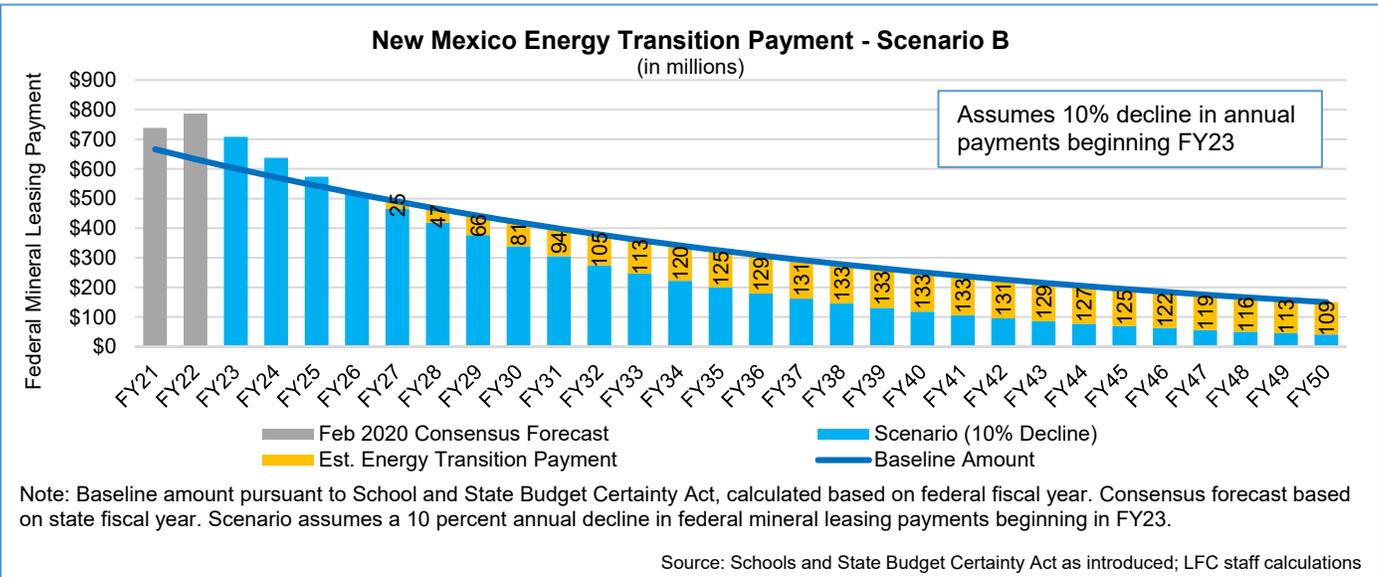
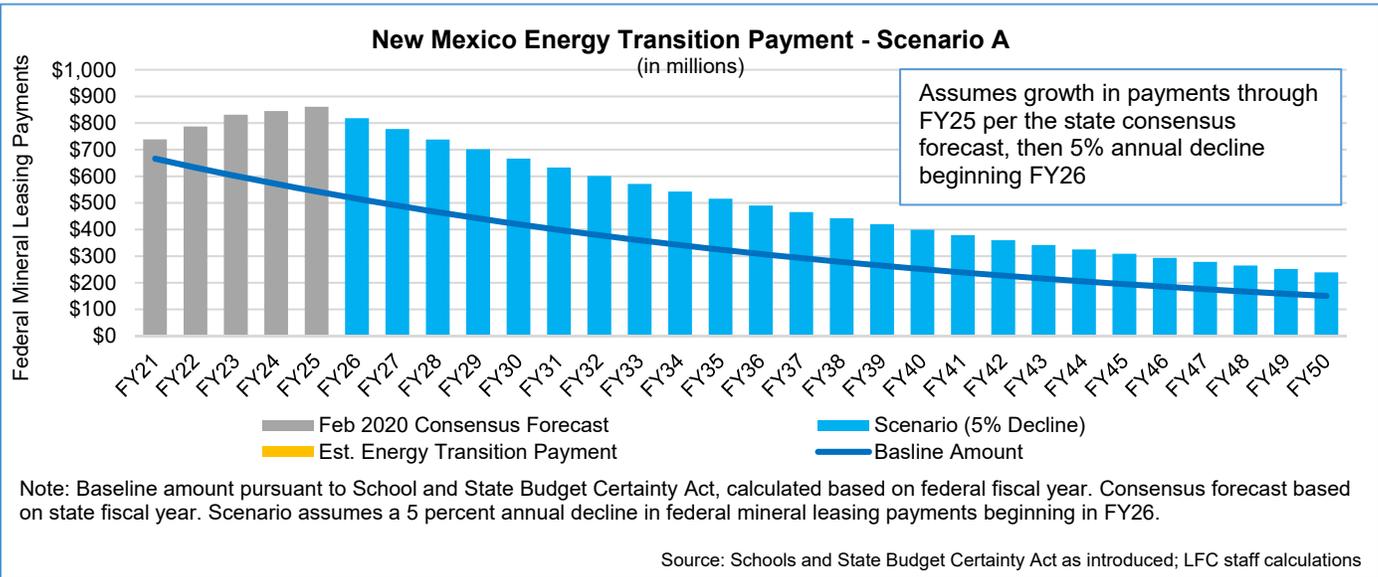
In Scenario A, the bill's calculated baseline amount would decline faster than New Mexico's annual FML revenues. Therefore, no energy transition payments would be made to the state.

In the more aggressive Scenario B, the bill's calculated baseline amount would decline faster than New Mexico's annual FML revenues for the first six years. In FY35, the state's annual FML payment would be 75 percent less than in FY22, and the energy transition payment would replace about 20 percent of the state's lost FML revenue.

**The trajectory of oil and gas production and prices in New Mexico would determine the effectiveness of this proposal.** For example, LFC staff considered two scenarios. Scenario A assumes growth in FML payments through FY25 consistent with the latest consensus forecast, then assumes a 5 percent decline in FML revenue each year thereafter. Scenario B is a more aggressive energy transition scenario that assumes FML revenues begin declining by 10 percent each year in FY23. The degree to which energy transition payments would occur depends on whether FML payments would exceed the baseline amount (see charts below).

Importantly, in either scenario, the proposed energy transition payments would only address a fraction of the state's lost federal mineral leasing revenues. Additionally, if the state's oil and gas production were to actually fall to the levels in either of these scenarios, the state would also lose hundreds of millions of dollars from other revenue sources that would be unaddressed by this bill's energy transition payment.

While this is simply one existing proposal, it outlines the state's need to prepare for possible future revenue declines should the energy transition lead to less oil and gas production in the state.



## Preparing for the Future

**New Mexico’s portion of the Delaware Basin has some of the best economics for oil and natural gas production.** According to the Dallas Fed Energy Survey published in March 2021,<sup>4</sup> producers reported an average breakeven oil price of \$26 per barrel to cover operating expenses for existing wells in the Permian Delaware (the second lowest in the country) and an average oil price of \$49/bbl to profitably drill a new well in the Permian Delaware (third lowest in the country) – see Attachment 4. Enverus previously reported to LFC that great economics have propelled New Mexico’s side of the Delaware Basin into one of the most actively drilled parts of the county.<sup>5</sup>

**However, stockpiles of drilling permits and DUC inventories could mask New Mexico’s production outlook.** While the Permian is a “sweet spot” for oil production, the natural decline rate of production from existing wells means producers must continually drill new wells to maintain or grow production (see Attachment 5). Large inventories of existing permits to drill on federal lands and completions of drilled-but-uncompleted wells have enabled producers in the state to continue bringing new wells online, supporting the recent production recovery. Still, it is important to note that producers may have a harder time maintaining or growing future production in New Mexico once those inventories are depleted. Budget makers should consider the possibility that near-term production growth in the state may not be indicative of New Mexico’s long-term production outlook.

**Global demand for oil persists, but oil markets remain volatile.** The advent of renewable energy technologies, electric vehicles, and growing pressures to decarbonize means oil is facing significant competition for energy demand. Nonetheless, shifts in consumption take time. The Wall Street Journal reports that crude oil is still expected to remain in high demand over the next decade to make transportation fuels and petrochemicals used for plastics and other household products.<sup>6</sup> Nonetheless, oil prices could experience more volatility in the coming years, potentially rising if investment in global oil supply fails to keep up with demand, or falling if faced with another economic shock or OPEC eases its production cuts too soon.

**The state has already taken steps in the right direction.** In FY19, New Mexico implemented a state revenue stabilization mechanism that distributes oil and gas emergency school tax revenue (the largest severance tax flowing into the general fund) in excess of the five-year average to the tax stabilization reserve. This allows the state to capture windfalls in production tax revenue and set those funds aside in a rainy day fund for use in the event of a downturn (see sidebar chart). Similarly, in FY22, the state will begin distributing federal mineral leasing revenue in excess of the five-year average to the early childhood trust fund.

Both mechanisms simplify the revenue estimating process and help mitigate swings in both forecasted and actual revenue from two of the state’s most

Considering the inherent volatility in oil markets and uncertainty on the timing of a future energy transition, New Mexico should prepare by implementing budget stabilization mechanisms, maintaining high reserves, and reducing budget reliance on oil- and gas-related revenues.



Source: February 2021 Consensus Forecast

<sup>4</sup> Dallas Fed Energy Survey, March 2021

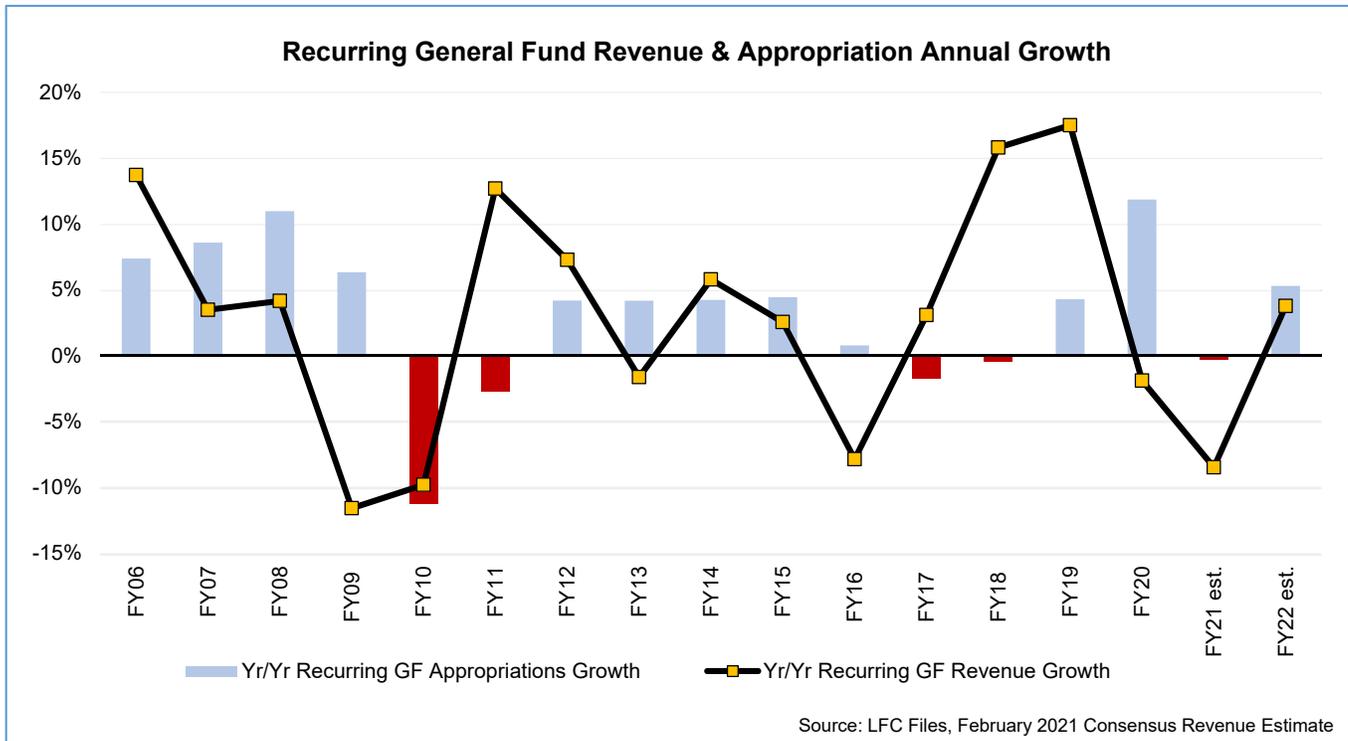
<sup>5</sup> Enverus (previously DrillingInfo), “NM Production & Economics Outlook”, report to LFC, July 2019

<sup>6</sup> Wall Street Journal, “Oil Price Hits Pandemic High as Investors Bet on Green Energy”, June 14 2021

volatile revenue sources. The provisions also prevent the state from incorporating potentially unsustainable revenue collections into recurring budgets.

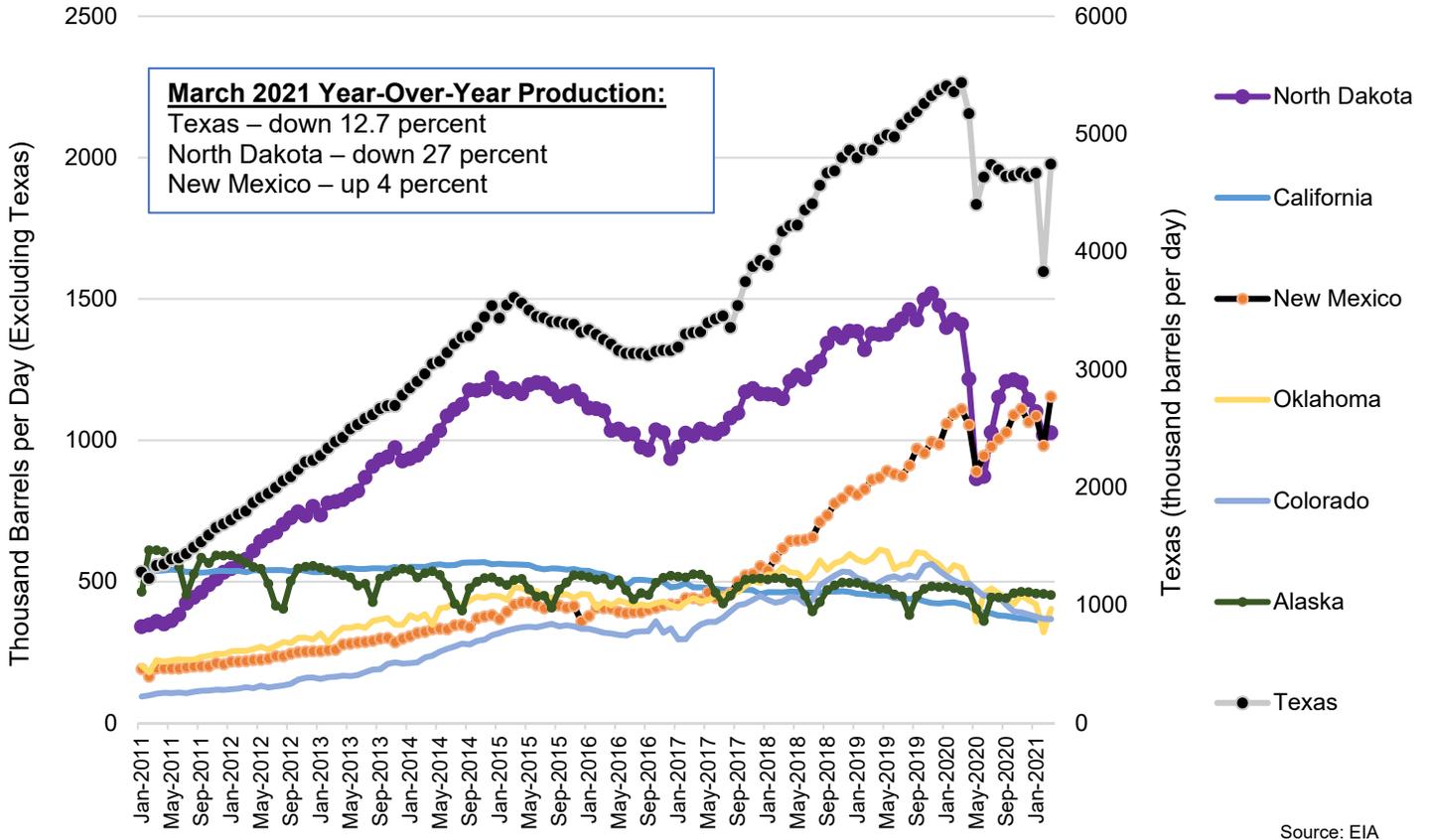
**Maintaining adequate reserves helps protect against short-term revenue shortfalls.** Based on stress-testing of the consensus forecast, LFC economists recommend the state maintain at least 20 percent to 25 percent of general fund appropriations in reserves to reduce the need for budget cuts in the event of a downturn. A high reserve balance enabled the state to avoid painful budget cuts after the onset of the Covid-19 pandemic and subsequent oil price crash. High reserves also allowed the state to enact a variety of pandemic relief and economic stimulus measures in the 2021 legislative session. Still, if a future decline spanned multiple fiscal years, it could deplete reserves and require the state to take additional measures to balance the budget, such as reducing spending, sweeping cash balances, or raising taxes.

**Therefore, moving forward, the state should exercise caution in incorporating future oil and gas revenue growth into recurring budgets.** The state budget’s strong reliance on the oil and gas industry creates a highly volatile structure in which revenues boom and bust along with the energy sector. New Mexico experienced unprecedented revenue growth in FY18 and FY19 as production in the state grew at rapid rates, and this growth was followed by significant revenue declines in FY21 following a crash in oil prices at the onset of the Covid-19 pandemic (see chart below). The more reliant state revenues are on oil and gas activity, the more difficult it will be to adjust to shifts in the market. By enacting measures to reduce budget reliance on oil and gas revenues, the state will be better prepared to face an energy transition in the coming years.



ATTACHMENT 1

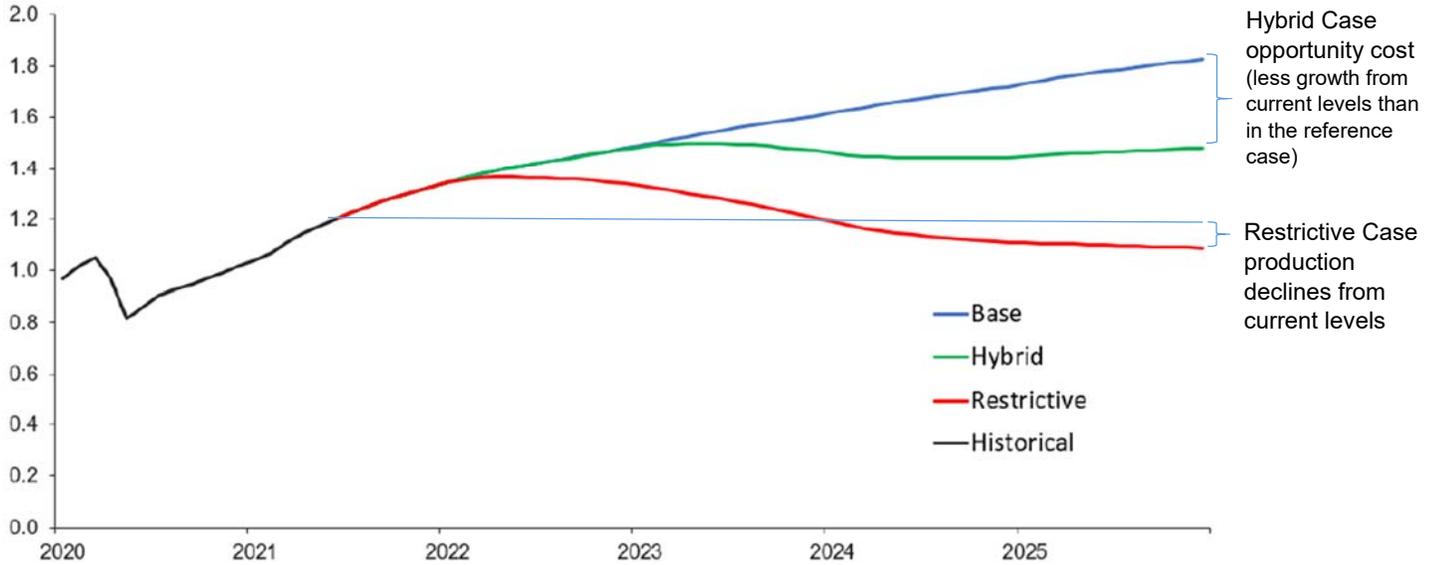
Top Oil-Producing States - January 2011 through March 2021  
(Thousand Barrels per Day)



## ATTACHMENT 2

### Forecast Scenarios for New Mexico Permian Basin Production Under Greater Federal Limits

Million barrels of oil per day



SOURCES: Kayrros; WellDatabase; Federal Reserve Bank of Dallas estimates.

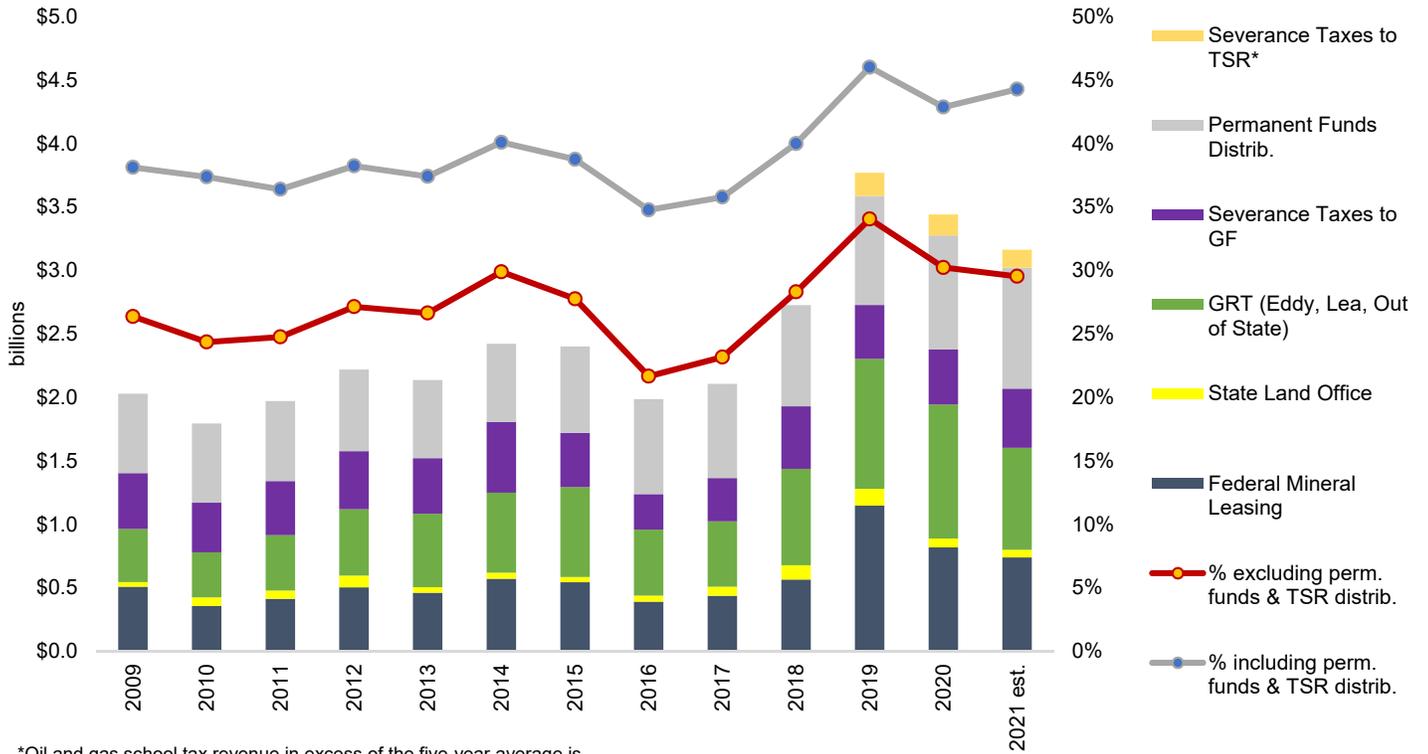
Federal Reserve Bank of Dallas

Note: comments on opportunity costs and realized costs are per LFC staff

1. Reference Case – drilling and completion activity continues at current pace
2. Hybrid Case – federal oil and gas leasing ends but drilling permits on existing leases are issued
3. Restrictive Case – federal leasing ends and permit extensions are not granted for existing leases beginning January 2022.

### ATTACHMENT 3

#### General Fund Revenues Dependent on Oil & Gas Industry

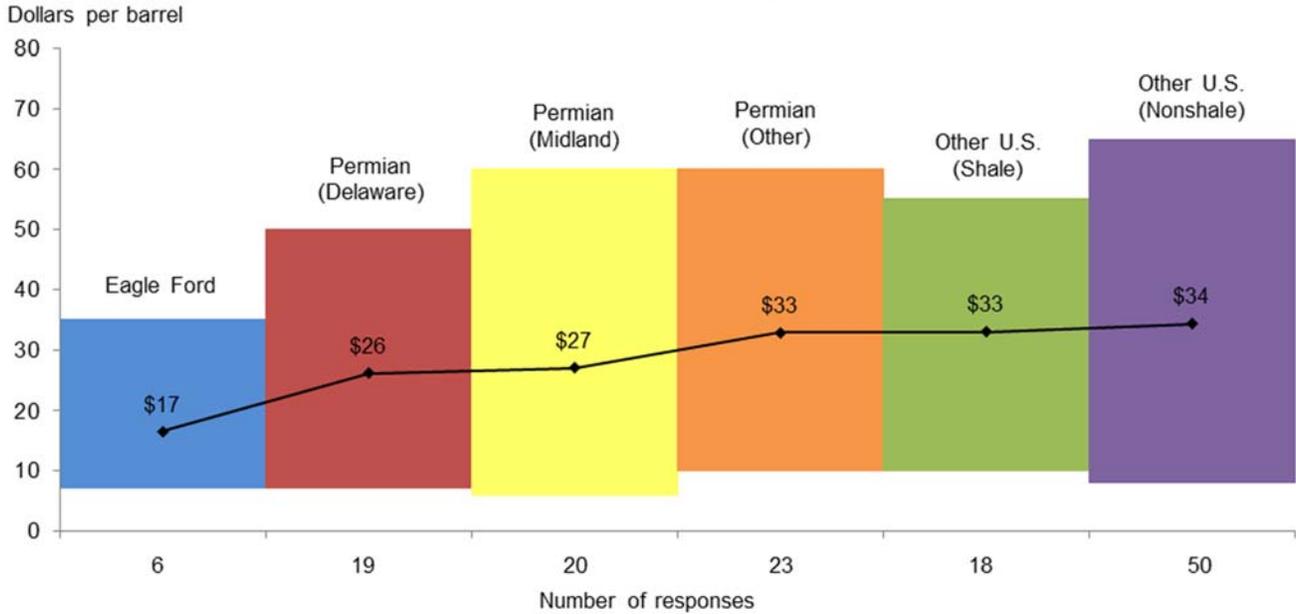


\*Oil and gas school tax revenue in excess of the five-year average is distributed to the tax stabilization reserve (TSR), softening the general fund's reliance on oil and gas revenues.

Source: LFC Analysis based on February 2021 Consensus Revenue Estimate

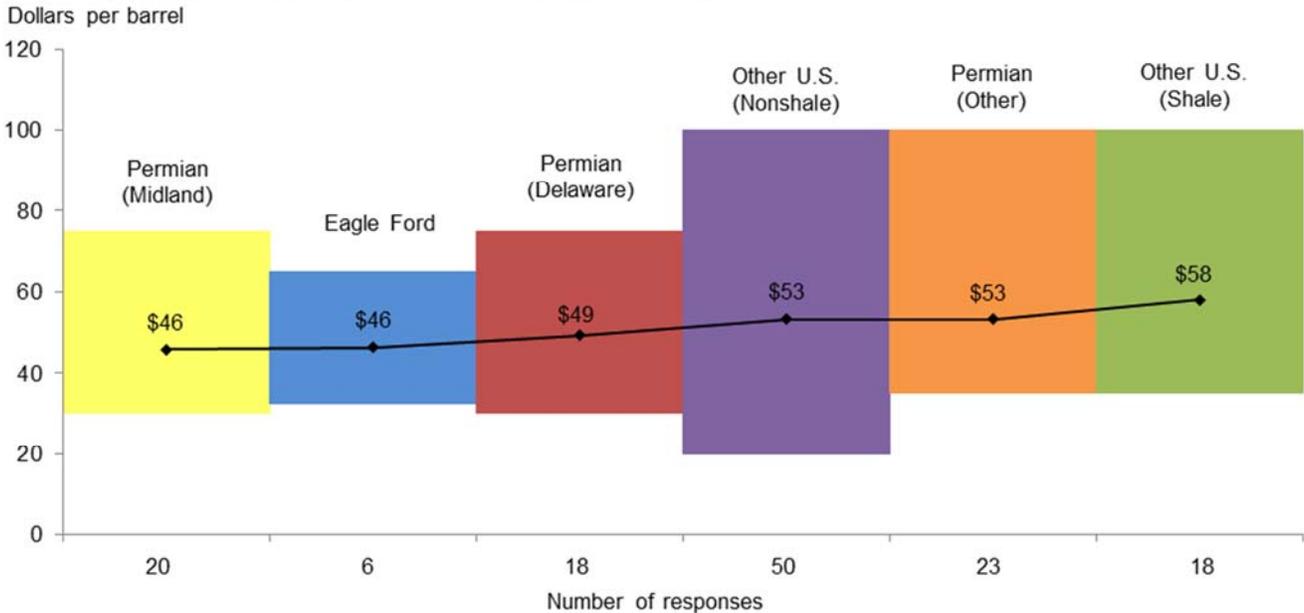
## ATTACHMENT 4

### In the top two areas in which your firm is active: What WTI oil price does your firm need to cover operating expenses for existing wells?



NOTES: Lines show the mean, and bars show the range of responses. Executives from 94 exploration and production firms answered this question during the survey collection period, March 10–18, 2021.  
SOURCE: Federal Reserve Bank of Dallas.

### In the top two areas in which your firm is active: What WTI oil price does your firm need to profitably drill a new well?

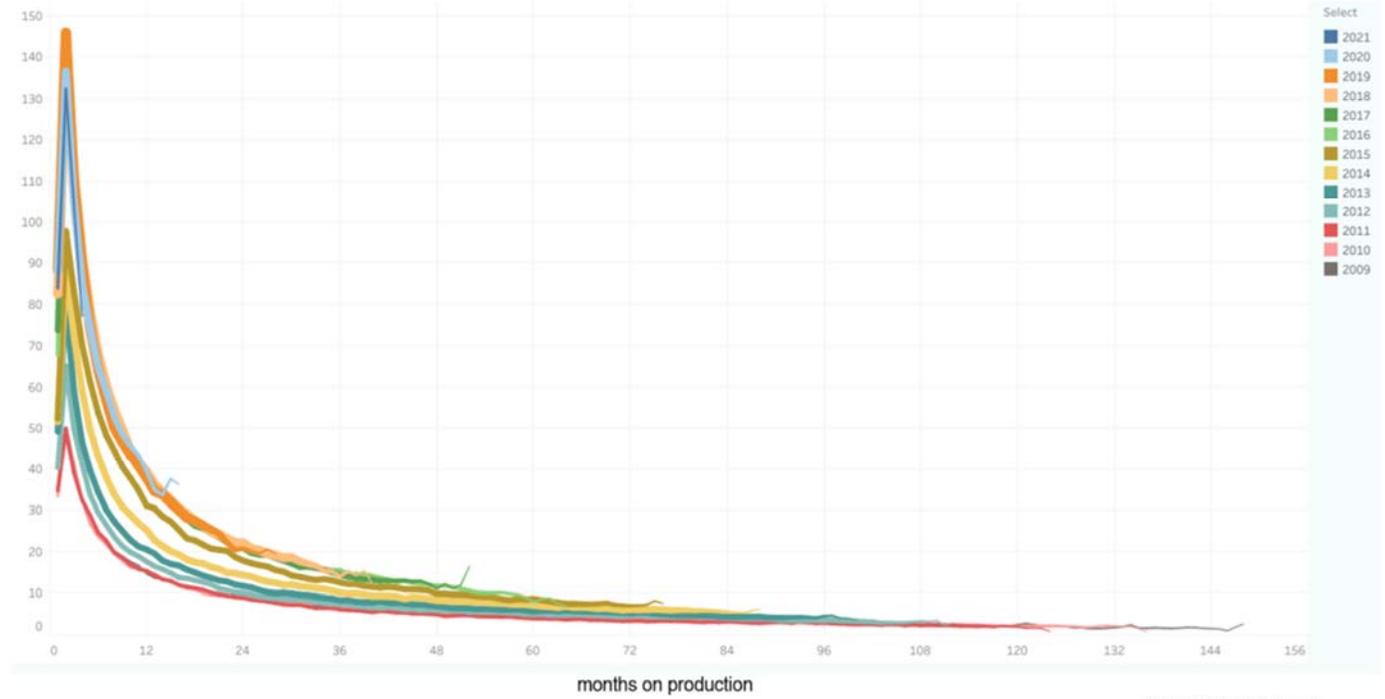


NOTES: Lines show the mean, and bars show the range of responses. Executives from 92 exploration and production firms answered this question during the survey collection period, March 10–18, 2021.  
SOURCE: Federal Reserve Bank of Dallas.

# ATTACHMENT 5

## New Mexico Oil Production Decline Rates

Average daily oil production [bo/d] per 1,000ft vs. months on production



Source: ShaleProfile.com