Mineral Revenues in Louisiana

Status Report Submitted to Senate Committee on Revenue and Fiscal Affairs and House Committee on Ways and Means of the Louisiana Legislature

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Introduction

Significant attention has been given to Louisiana's tax system over the past several years. In 2014, the Louisiana legislature asked a group of economists, led by Dr. Jim Richardson to prepare a report regarding the Louisiana tax structure. Presentations were made to the House committee on Ways and Means and the Senate committee on Revenue and Fiscal Affairs in March of 2015. In the first extraordinary session of 2016, the state legislature passed House Concurrent Resolution 11, which created the Task Force on Structural Changes in Budget and Tax Policy. Dr. Richardson was a co-chair of this Task Force, and Dr. Upton attended regularly and presented information to the Task Force, specifically pertaining to the history of mineral revenues in the state's budgeting process.

Throughout legislative sessions over the course of this study process[1] a number of changes were made to the tax code.[2] But to date, no significant discussion has occurred regarding how Louisiana taxes the production of oil and natural gas, with the exception of placing a mechanism for a reduced horizontal drilling exemption as the price of oil and natural gas rises. In the 2018 second extraordinary session, Senate Concurrent Resolution 4 asked Dr. Richardson and Dr. Upton in connection with their academic affiliation with Louisiana State University to make specific recommendations to the legislature regarding mineral taxes in Louisiana. Specifically, we were asked to balance the following goals:

1. Preserve or improve the competitiveness of the oil and gas extraction sector in Louisiana.
2. Decrease or remove the difference in tax rates for oil and gas.
3. Create an equitable system of severance tax exemptions on all wells, not just horizontal wells.
4. Hold constant or increase mineral revenues for the state.
5. Explore other reasons why oil and gas production is fluctuating in the state of Louisiana and any changes that need to be made to increase production.

[1] Regular legislative session 2015; first extraordinary legislative session 2016; second extraordinary session 2016; first extraordinary legislative session 2017; regular 2017 legislative session; first extraordinary session 2018; second extraordinary session 2018; and the third extraordinary session 2018

[2] For a summary of these changes, see Chapter 1 of "Exploring Long-Term Solutions for Louisiana's Tax System" by James A. Richardson, Steven M. Sheffrin and James Alm. LSU Press, published in November 2018.

We were asked to submit a preliminary status report by February 1, 2019; a final written report by February 1, 2020; and specific bills implementing these recommendations by February 1, 2021. This document serves as the preliminary status report.

Study Process

From the beginning of the study process, we have focused on gathering information from two sources. First, recommendations should be made based on sound economic analysis so we have made every effort to get information from all public sources, overall economic activity in the oil and gas sector, what is occurring in other states, and all other statistical information regarding oil and gas activities. Second, we have and will listen to both government and industry to understand how potential changes might impact investment in the state by the oil and gas industry knowing that statistical information alone is not always sufficient for good policy making. By nature, changes in taxes that are aimed at revenue neutrality will increase the tax burden for some taxpayers and decrease the tax burden for others. Further, changes may impact the administrative burden of taxpayers and state government charged with collecting these taxes. For these reasons, this process was approached by listening carefully to stakeholders, examining alternative oil and gas structures in other states, reviewing the changing nature of the oil and gas industry in Louisiana, applying economic analysis to the current oil and gas tax structure in Louisiana and considering the short and long-term impacts of any changes in this tax structure.

In the first year of this process, we conducted meetings with a number of stakeholders from both government and industry. We found it prudent to go on this "listening tour" before jumping straight into "crunching the numbers." The starting point for these discussions was Chapter 8 of **Exploring Long-Term Solutions for Louisiana's Tax System** entitled *Mineral Revenues in Louisiana*[3] and Chapters 8 and 9 of **Louisiana's Fiscal Alternatives: Finding Permanent Solutions to Recurring Budget Crises.**[4] We then allowed the conversations to go where they went. The main purpose of this document is to categorize the potential areas where changes to mineral tax laws in Louisiana might be appropriate and in the long-term interests of the state. Specific recommendations will come in next year's status report. We will maintain our discussions with government and industry as our recommendations become more specific knowing that each suggestion will have potential benefits and challenges. We are still very open to feedback, as this is an ongoing process.

Topics of Discussion

We have categorized our topics of discussion as follows:

1. Valuation of Oil and Natural Gas for Tax Purposes
2. Differential Tax Rate for Oil and Natural Gas
3. Taxing Horizontal vs Vertical Wells
4. Use of Oil and Gas Collections
5. Other Topics of Discussion

[3] Ibid
[4] Edited by James A. Richardson, (LSU Press, 1988).

a. Orphan Well Fund
b. Alternative Oil and Gas Taxes in Other States
c. Severance Tax on Timber and Pulpwood

Below we provide a synopsis of these topics of discussion and summarize different viewpoints.

1. Valuation of Oil and Natural Gas for Tax Purposes

Severance tax for oil in Louisiana is 12.5 percent of the value of oil as it leaves the ground for most wells.[5] These tax rates were established as of 1974. Prior to 1974, oil severance taxes were based on a volumetric charge that did not vary with changes in the price of oil. Natural gas, on the other hand, is taxed today on a volumetric basis but with the tax rate indexed to changes in the price of natural gas with the tax indexing being initiated in 1990. The tax rate averages about 4 percent of the value but fluctuates in the short run significantly with changes in the price of natural gas alongside lagged changes in the volumetric rate. The volumetric rate is updated once per year.

Our starting point of discussions with stakeholders was on consistently valuing oil and natural gas for tax purposes; either as (a) the value of the oil/gas as sold on the market or (b) a volumetric rate indexed to an average market price (some have referred to an "objective standard price"). We found some interest for a volumetric rate indexed to a market price as opposed to taxing the value of the oil and gas at the wellhead.

Potential Benefits of Volumetric Rate on Oil

Reduced administrative burden: Both industry and the Louisiana Department of Revenue (LDR) indicated that moving to a volumetric rate for oil severance tax could simplify the process of paying taxes and the auditing process. Currently, in order to audit a severance tax payment for natural gas, LDR simply has to audit the amount of natural gas sold and then multiply by the volumetric rate prevailing at the time of production. This process is relatively straightforward. LDR spends considerably more time auditing oil severance tax collections. This is because they have to verify both the quantity of oil sold *and* the price. While the process of auditing the *amount of oil and gas* produced is relatively straightforward, the process of auditing the *price* is more difficult. For this reason, it is suggested that setting a volumetric rate for oil production over a time period could decrease administrative burdens for the state and simultaneously could simplify the process of paying severance taxes for taxpayers.

Potential Challenges of Volumetric Rate on Oil

Time Lag: There is inherently a time lag in setting the volumetric rate. Currently for natural gas, the volumetric rate is updated yearly. This can be problematic for producers, but might make forecasting revenues easier for the state. While in the long run, fluctuations will even out, in the short run if the *price decreases*, the effective *tax rate will increase*. On the other hand, if the *price increases*, the effective *tax rate will decrease* in the short run before the volumetric rate is updated. Taxation based on the value sold does not have this problem.

[5] There are reduced rates for stripper and incapable wells that will be discussed subsequently.

Differential impact on producers receiving different prices: Different producers receive different prices for their oil. For instance, it might be the case that producers closer to market hubs get a higher price for oil because there are less transportation costs. If the tax is volumetric, this could benefit some producers over others. We are currently looking into the extent of these differential prices across the producers.

Oil/condensates more heterogenous than gas: Different sulfur content and gravity can impact the price of oil significantly. This is especially the case for condensates that are treated as oil for the purposes of tax collections. For this reason, producers producing a heavier crude with higher sulfur content (that historically has lower value) might pay a higher effective tax rate than a producer with a lighter and lower sulfur content (that historically has higher value). Further, condensates are taxed at the rate of oil, and have very heterogeneous prices based on their BTU content. For this reason, a BTU adjustment might be considered for condensates. Quality differences in natural gas are not as significant as for oil.

Administrative Burden: Moving to a volumetric rate might impact the administrative burden in that the rate will need to be set. While the specific process for setting the volumetric rate for oil would need to be worked out up front, the ongoing administrative burden of this would be negligible and would likely be more than offset by other proposed changes in this document. Further, we discussed both quarterly and bi-annual re-setting of the rate. Either would likely be sufficiently often (while yearly is too long of a lag and monthly might be too often). We are considering ideas on the process for which a volumetric rate could be established.

Louisiana will be different from other states: While volumetric rates do exist in a few other states,[6] most states set severance taxes on oil and gas based on the value when severed from the ground. Changes in oil and gas taxation have been extremely infrequent among all the states, but, given that the last time that Louisiana really made a major change in its oil and gas tax laws was in the 1970s, it is certainly appropriate to reconsider the overall oil and gas tax structure given the major changes in the energy market over the past 50 years.

Benefits and Challenges of Changing Natural Gas from Volumetric to Value

Much more recently, in 1990, a spirited discussion was had in the Legislature regarding taxing natural gas on a value basis as opposed to a volume basis. The decision to change to a value basis then became a discussion of how to assign value to natural gas with the final decision being to establish a method of indexing the volume rate to an established price of natural gas. We will reconsider this discussion and also the method of indexing the natural gas tax per MCF to changing prices in natural gas. Again, the focus will be on economic efficiency and administrative ease.

[6] California for both oil and natural gas and North Dakota for gas (oil taxed as a percent of value).

2. Differential Tax Rate for Oil and Natural Gas

As previously mentioned, oil is taxed at approximately 12.5 percent of its value, while natural gas is taxed at approximately 4 percent. Thus, oil is taxed at over three times the rate of natural gas. This differential in tax rates was determined in the 1970s under very different market conditions with respect to federal policies on oil and gas pricing. This is not necessarily problematic per se, but it certainly opens up a discussion about the appropriateness of the policy in 2019 with fundamental changes in the oil and gas markets since the 1970s.

After our analysis of the tax differentials, we have identified several potential distortions that taxing at very different rates can cause. Further, a survey of other states reveals that Louisiana is unique in taxing oil at approximately three times the rate of natural gas. In fact, our neighbor Texas taxes natural gas at a *higher rate* than oil (4.6 percent of oil and 7.5 percent for natural gas).[7] Most other states tax oil and natural gas at approximately the same rate.

This would be a major change in oil and gas tax policy and would only be justified if there are major economic benefits to the state, but, it is appropriate to carefully explore such changes and to consider processes to implement such changes if the benefits are deemed sufficient.

Louisiana has reduced rates for stripper and incapable oil wells. Stripper wells are defined as wells that are incapable of producing an average of more than ten barrels of oil per day during the entire taxable month. Incapable wells are incapable of producing an average of more than twenty-five barrels per day during the entire taxable month and which also produces at least fifty percent saltwater per day. On multiple well leases, all wells must meet the criteria to be able to qualify for the exemption. There is also a reduced gas severance rate for natural gas from incapable oil wells and natural gas from incapable gas wells.[8] Any possible changes in stripper rates for oil and natural gas will be considered in conjunction with other severance tax changes.

Potential Benefits of Leveling Oil and Gas Tax Rate

Less Distorting

The first potential benefit of having the same (or closer to the same) tax rate for oil and natural gas is that there will be less distorting incentives between production of the two hydrocarbons. The first potential distortion caused by a difference in tax rates for oil and natural gas comes from the production decision itself. This might impact what areas of the state are developed, which part of a specific play (i.e. areas that have more oil or more gas) and the specific drilling strategies in a reservoir. As economists, we want investment decisions to be made based on the economics of both the cost to produce, which would include any external costs, and value of these resources—not differences in tax rates. In other words, we want the tax structure to be as neutral as possible in terms of the investment decisions to be made.

[7] We should note that Texas also has an Ad Valorem tax on reserves in the ground, which Louisiana does not have.
[8] Louisiana Department of Natural Resources, Technology Assessment Division.

The second potential distortion comes from the Louisiana and Texas border. While Louisiana and Texas on average have historically had similar tax burdens on oil and gas companies,[9] the way in which the taxes are implemented are very different. Louisiana taxes oil at 12.5 percent and natural gas at approximately 4 percent (indexed to value as previously mentioned). Texas, on the other hand taxes oil at 4.6 percent and gas at 7.5 percent, but also taxes the reserves of oil and gas still in the ground as property. Thus, while on average the tax burden is similar, the relative burden on oil and gas are quite different. In particular, at the state line, a company might be incented to drill for oil on the Texas side of the border and gas on the Louisiana side of the border, as Texas taxes gas at a higher rate than oil, while Louisiana taxes oil at a higher rate than gas. Leveling the tax rate for oil and natural gas could reduce this distortion. Obviously, Louisiana only controls its tax rates.

Potential Challenge of Leveling Oil and Gas Tax Rate

The most challenging aspect of any major change in oil and gas tax rates is that the state has been working with the differential tax rates for over 50 years. Long-term decisions have been made by oil and gas producers and the tax incidence has been incorporated into these decisions. This challenge does not suggest that leveling oil and gas tax rates is impossible or not necessarily in the state's long-term best interest, but it does suggest we have to be aware of any short-term adjustment issues.

3. Taxing Horizontal vs Vertical Wells

In 1994, the state implemented a severance tax exemption for horizontal wells. This exemption allows for a complete exemption from severance taxes for either (a) two-years from the beginning of production or (b) well payout, whichever occurs first [R.S. 47:633(7)(c)(iii)]. While this exemption has been law since 1994, this exemption did not become meaningful until the shale oil and gas boom of the 2000s. The 1994 horizontal exemption was modified in 2015 so the exemption gradually phases away with increase in oil and natural gas prices; however, the exemption does not phase away completely until the price of oil is $110 per barrel and natural gas is $7 per MCF. The horizontal exemption is 100 percent as long as the price of oil is less than $70 per barrel and the price of natural gas is less than $4.50 per MCF.

Potential Benefits of Removing Favorable Tax Treatment of Horizontal Wells

Economic rationale for different tax burdens for horizontal and vertical wells: We have found no apparent rationale for taxing production from horizontal wells at a different rate than vertical wells except possibly the definition of horizontal drilling as an "infant industry" when the exemption was passed in 1994. This exemption

[9] "The State of Local Tax Bill of the Louisiana Oil and Gas Producing Industry: A Comparative Analysis." By Allan G. Pulsipher. Center for Energy Studies. Louisiana State University. February 1991.
"State and local taxes minor factors for E&P locations." Allan G. Pulsipher. Oil and Gas Journal April 1991.
"Overall tax levels similar across 11 producing states." Allan G. Pulsipher, Robert H. Baumann, Wumi O. Iledare. Oil and Gas Journal. October 1993.

is an artifact of history that has persisted to the present day. The exemption was never intended for production in shale geological formations.

Reduced administrative burden: There are two administrative burdens associated with the horizontal drilling exemption. First, DNR must certify that the well is indeed a horizontal well and therefore qualifies for the exemption. Second, the exemption is currently for the first two years of production or until well payout, whichever occurs first. This creates a burden for both the producer who must provide evidence of when well payout occurred and the Department of Revenue that has to verify this is correct. Removing the horizontal drilling exemption would reduce administrative burden for all involved.

Potential Challenges of Removing Favorable Tax Treatment of Horizontal Wells

The most challenging aspect of a major change in horizontal drilling exemptions is that the state has been working with this exemption since 1994 and made some revisions to it in 2015. Long-term decisions are being made by oil and gas producers. This challenge does not suggest that eliminating the horizontal exemption is impossible or not in the state's long-term best interest, but it does suggest we have to be aware of any short-term challenges.

4. Use of Oil and Gas Collections[10]

Louisiana in 1991 created the Budget Stabilization Fund with the purpose of providing a cushion during a financial shortfall. Oil and gas revenues, including severance taxes, royalties, bonus payments and rentals, currently above $950 million goes to the Budget Stabilization Fund. There are limits to what can be taken from the Budget Stabilization Fund (no more than the deficit or one-third of the fund, whichever is less) and how much can go into the fund (4 percent of total state revenue excluding disaster relief funds from the federal government). In 2016 the state created the Revenue Stabilization Trust Fund with the following provisions: (1) all corporate income and franchise tax collections above $600 million goes into the fund; (2) 30 percent of applicable mineral revenues between $660 million and $950 million would be used for paying down the unfunded accrued liability (UAL) of the Teachers' Retirement System of Louisiana (TRSL) and the other 70 percent will be put in the Revenue Stabilization Trust Fund; and (3) any mineral revenues above $950 million will go into the Budget Stabilization Fund until it has reached its limit and then the other revenues will flow into the Revenue Stabilization Trust Fund.

[10]The idea behind a "sovereign wealth fund", as they are commonly called, is that a state or country will invest the dollars and use the earnings from these investments to fund future generations. The creation of these funds is particularly compelling in instances where a region benefits from the extraction of a non-renewable resource. Three examples of sovereign wealth funds funded by oil and natural gas include:

- Norway: Established in 1990. Currently over $1 trillion in assets. The world's largest sovereign wealth fund, or about $195,000 per Norwegian citizen.
- Alaska: Established in 1976. Currently is worth approximately $65 billion.
- Texas: Permanent School Fund (PSF) – created 1854, currently work ~$36 billion. Permanent University Fund (PUF) – created in 1876, currently worth ~$15 billion.

The Revenue Stabilization Trust Fund should be re-evaluated frequently given oil and gas price scenarios and production possibilities, but these dollars should not be used to pay for recurring public expenditures. To illustrate the importance of this question in Louisiana, consider that in the early 1980s, more than 40 percent of Louisiana's taxes, licenses and fees came from royalty receipts and severance taxes in Louisiana.[11] If the state had decided to invest some share of those revenues in a long-term trust fund in lieu of offsetting other taxes to Louisiana citizens and/or spending these dollars at the time, the state's financial posture in 2019 would be very different. A Revenue Stabilization Trust Fund is a significant method of sharing a depletable resource with future generations.

5. Other Topics of Discussion

Orphan Well Fund

The Louisiana Oilfield Site Restoration Program was created in 1993 within the Louisiana Department of Natural Resources to address the problem of abandoned or "orphaned" oilfield sites across the state.[12] The fee for full-rate production consists of 1 and one-half cents for every barrel of oil and three-tenths of one cent for every MCF of natural gas. Since the fund inception in 1993, the state has plugged 2,306 wells at a cost of $64 million. According to DNR, there are 2,833 known orphaned wells remaining, 262 of which are in water.

This program should be evaluated in terms of (1) is the program funded properly and (2) are there any process improvements that could increase the effectiveness of how these funds are spent. More consultation from well engineers, geologists and others are welcome in this regard.

Alternative Oil and Gas Taxes in Other States

One of the notable differences between Louisiana and Texas' mineral tax laws is that Texas allows for oil and gas reserves to be taxed as property. Louisiana does not allow this per our constitution. Texas uses severance and ad valorem taxes as opposed to only severance taxes. Given that we want to have a thorough examination of the taxation of oil and gas, we will consider such alternatives as Texas uses, but one of our goals is to minimize any distortions in decision making that might be associated with any tax structure and to minimize administrative costs.

Severance Tax on Timber and Pulpwood

While not the focus of this study, severance taxes are also paid on trees and timber at the rate of 2.25 percent of current stumpage value and pulpwood at the rate of 5 percent of current stumpage value where both values are determined by the Louisiana Forestry Commission. We are examining if there are any major issues regarding these severance taxes given that these tax laws have not been changed in a number of years.

[11] Upton, Greg. Oil Prices and the Louisiana Budget Crisis: Culprit or Scapegoat? An Analysis of the Implications of the Oil Price Drop on the Louisiana Budget. LSU Center for Energy Studies Whitepaper. October 2016.
[12] Source: <http://www.dnr.louisiana.gov/index.cfm?md=newsroom&tmp=detail&aid=17>

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