Fiscal oil boom from page 6

not doing enough to "plan for life after oil. There was none of that" during the most recent session. He pointed to recent nonpartisan reports about the state's future (North Dakota 2.0 and North Dakota 2020 & Beyond) that offer numerous recommendations about what the state can and should be doing. "We suffer from a lack of action, not from lack of a plan," Schneider said.

That's not to say the state has done nothing. It has a series of permanent and special-use funds that, at the very least, set aside a growing pot of money for future needs, however defined by future legislative sessions (see sidebar on page 6). One of the most far-reaching is the Legacy Fund, a permanent fund set up two years ago that has about $1.2 billion and was adding $80 million a month. This money cannot be spent until at least 2017, and any efforts to spend its assets must be approved by a two-thirds majority in both houses. (A separate *fedgazette* article is forthcoming on permanent oil trusts in other U.S. states, Alberta and Norway.)

Ultimately, assessing local and state progress in catching up with oil development is a big challenge because the state is undergoing an economic transition like none it has ever seen, one that is dynamic and hard to analyze. Almost unbelievably, the state is still on the leading edge of this boom. Oil production is projected to grow for the next 10 to 12 years—possibly doubling, maybe more—before settling into a slow, sustained downward slope. At least for a while, that means more of everything, good and bad.

Sources across the state repeatedly said clear progress has been made at the local level and (some admit grudgingly) at the Legislature. Many sources pointed to the state's conservative nature, which often prevents sweeping moves in favor of more incremental ones. In due time, they said, more progress will be made. Whether it's occurring at the speed and in the direction necessary to tap the full potential will be gauged in years and in the remainder of the oil and gas still to be pulled from the ground.

Wayne Biberdorf is the state's energy impact coordinator, appointed by Gov. Jack Dalrymple in March of last year to improve coordination between western North Dakota communities and state agencies. "I keep the governor's office updated with respect to the needs of local political entities," he said.

In Biberdorf's opinion, "Everybody's picked up their game. There's no doubt in my mind." Places like Williston and Watford City have witnessed unprecedented economic activity, "and the scale at which they are ramping up [to meet that demand] is amazing." f

Fine-tuning the oil tax machine

Taxes on oil and gas vary widely among states, with North Dakota mostly in the middle of the pipeline

By RONALD A. WIRTZ
Editor

Taxes can be simple mechanisms. Their application in the hands of lawmakers is often anything but.

Oil and gas tax revenue is a function of both energy production and tax structure. While states can't control the former, they have total control over the latter.

No two states take the same approach to taxing oil and gas production. They vary on what, how and how much to tax—even when to tax. And once that's all done, they differ on how much to give back in exemptions, credits and incentives designed to encourage exploration and production. As a result, tax revenue among energy-producing states varies widely.

Have oil, will tax

The first requirement for taxing oil and gas is, of course, oil and gas. Only 31 states produced oil last year, and 33 states marketed natural gas. Many East Coast and Midwestern states (like Minnesota and Wisconsin) have little or no oil or gas production.

Oil production is flat or declining in most states; it's growing significantly only in North Dakota and Texas (see Chart 1), but is rising modestly in a few states like New Mexico and Oklahoma. Still, given today's prices, even falling production can represent significant tax revenue.

Some states have seen natural gas production explode in recent years—like Pennsylvania, whose daily production rose almost 10-fold from 2010 to 2012, to more than 6 billion cubic feet per day, second only to Texas. While gas revenues are not trivial, in most states they do not match those of oil because taxes are usually based on the value of production, and natural gas prices have been low since 2009.

Once there is production, the most obvious component of state tax policy is so-called severance taxes that are levied at the wellhead on the gross production or market value of energy extracted (or severed) from the ground. These rates tend to vary considerably among states.

Headwaters Economics, a consulting firm in Bozeman, Mont., has studied the matter, "and we expected to find that states were quite similar … and that they equalized to their peers," said Mark Haggerty, an economist with Headwaters. Instead, rates turned out to be quite different.

North Dakota's severance tax rate is 11.5 percent (see description sidebar on page 3). That's both high and low, depending on the comparison (see table). California levies no severance tax (technically, it levies a 10th of 1 percent tax to pay for related government agency work). Texas, the nation's largest oil producer by a wide margin, levies a 4.6 percent severance tax.

On the other end of the scale is Alaska, which this spring passed a new 35 percent severance tax rate, with a $5 per barrel tax credit. This new rate replaces a progressive tax formula that started at 25 percent but increased progressively with oil prices, nearing 50 percent when oil prices hit $100 per barrel.

Haggerty noted that states with higher tax rates have often had high rates from the start, which he said was "lucky" because states struggle to increase tax rates after the fact. Pennsylvania, for example, has unsuccessfully attempted to create a severance tax to capture revenue from surging natural gas production there. In California, a top oil-producing state for decades, opponents have defeated several recent efforts to implement a severance tax.

Oil severance tax rates

California	0%
New Mexico	3.75%
Texas	4.6%
Colorado	5%
Wyoming	6%
Oklahoma	7%
Kansas	8%*
Montana	9% to 14.8%**
North Dakota	11.5%
Louisiana	12.5%
Alaska	35%***

* Kansas' rate does not reflect 3.67 percent property tax credit.

** Montana's rate depends on working/nonworking well interest.

*** Alaska's rate does not factor for $5/barrel tax credit, as well as revenue exclusions that can reduce the base rate to as low as 14 percent.

Source: State energy and other agencies

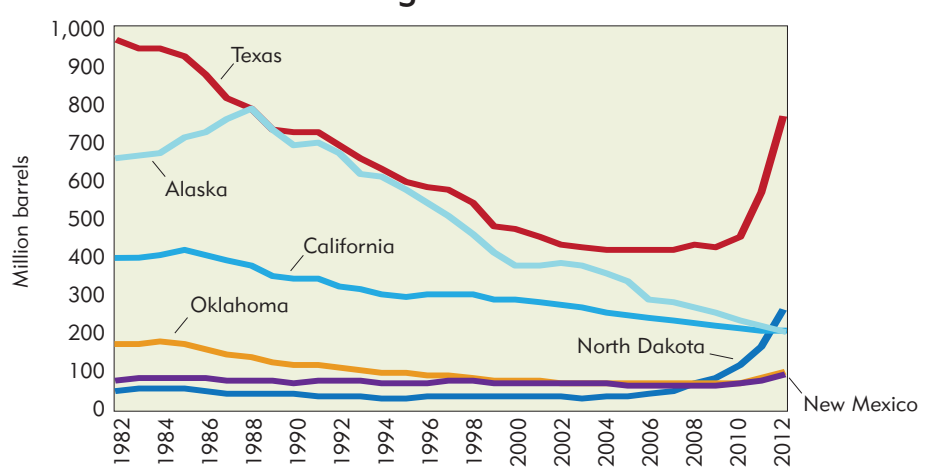
Royalties fit for a king

States collect oil and gas revenue from a variety of other sources, including energy production on state-owned lands. States sell the rights to extract oil and gas on publicly owned land to private producers, receiving one-time lease-bonus payments. Once production starts, states receive royalty payments (usually to special land trusts) for every barrel of oil produced and at rates comparable to those received by private landowners.

In North Dakota, royalty rates range from 12.5 percent in marginal-producing counties up to 18.75 percent in the seven largest oil-producing counties; the

Chart 1

Annual oil production among leading U.S. states



Source: Energy Information Administration

latter rate was increased in 2012 to reflect the fact that royalty rates on private land were widely known to be higher. In fiscal year 2012, the state earned nearly $320 million in royalties and lease-bonus payments.

State royalty rates elsewhere tend to run between 12 percent and 19 percent, but revenue streams can vary tremendously based on the amount of oil production that takes place on public land. Alaska's comparatively modest royalty rate of 12.5 percent brought in $3 billion in 2012, easily the most of any U.S. state because virtually all oil production occurs on public land.

Many states also levy so-called ad valorem taxes on property and production equipment used for energy production. North Dakota is one of the few major producing states that do not. Wyoming makes up for a comparatively low severance tax (6 percent) with a 6.7 percent property tax.

Complicating the math of taxes is a laundry list of industry exemptions, tax credits and other incentives in each state, most of which apply to severance taxes. In Texas, for example, certain tax incentives can reduce severance tax rates to between 2.3 percent and zero. In Alaska, significant revenue exclusions can take the severance tax rate as low as 14 percent, according to one analysis done for the state.

Most states have exemptions for stripper (or low-producing) wells, most of which are late in their production life cycle. In Louisiana, wells producing less than 10 barrels a day are taxed at about one quarter the normal rate. In Wyoming, the normal 6 percent severance tax drops to 4 percent for stripper wells. North Dakota had steep tax discounts for stripper wells until this spring when the Legislature voted to eliminate the exemption, a move the state expects will yield an additional $50 million in annual tax revenue.

Apples-to-oil comparisons

Given these many moving parts, uncovering the impact of state tax policy on effective tax rates and revenues is difficult. Two studies, however, offer a glimpse.

Headwaters analyzed the tax ramifications of an average Bakken formation well in four states (including hypothetical wells in Colorado and Wyoming, which lie outside the Bakken). During the first three years (when production is at its highest), this well would generate about $15.4 million in gross market value given recent oil prices.

But over this three-year period, the four states took in different amounts of revenue depending on tax rates, exemptions and credits. Montana would receive less than half the revenue of North Dakota (see Chart 2), mostly because the state has an exemption that lowers severance taxes to less than 1 percent for the first 18 months of production.

"I was surprised there were not more studies [on effective tax rates]. Getting an apple-to-apple comparison is really tough" given the many different tax laws, assessment practices, credits and exemptions that each state has approved over decades.

—Rod Backman
Covenant Consulting Group

Last December, Rod Backman of the Covenant Consulting Group, located in Bismarck, N.D., looked at effective tax rates (total taxes paid, including credits and exemptions, divided by the value of oil and gas produced) at the behest of the North Dakota Department of Commerce. The study sample included some of the largest state producers as well as some (like Montana) in reasonable proximity to North Dakota.

"I was surprised there were not more studies," said Backman. But after digging into the matter, he also found that "getting an apple-to-apple comparison is really tough" given the many different tax laws, assessment practices, credits and exemptions that each state has approved over decades. Even finding state bureaucrats who could help with the accounting was difficult, he said, because state personnel were often familiar with only one tax area, like severance or property taxes, or oil taxes and not gas taxes.

Backman's study divided the sum of severance and ad valorem taxes (including credits and exemptions) by the average market value of energy production to arrive at an overall effective rate for each state. It showed a wide divergence—with California and Alaska as bookends—along with some relative grouping among other states (see Chart 3; these rates do not include state royalty income and lease-bonus payments).

The difference in rates can amount to billions of dollars annually. Alaska produces about 4 percent more oil in a year than California and about one quarter less than North Dakota. Yet Alaska collected $6.2 billion in severance and property taxes in fiscal year 2012—about three times that of North Dakota and roughly 15 times the tax revenue collected in California. And those figures don't include Alaska's 2012 oil royalties of $3 billion.

That might seem counterintuitive; all things equal, higher taxes should discourage exploration and production. Then again, the supply of extractable oil is finite and geographically bound, and producers will stay active in areas where profits can be reaped, even in the face of high tax rates, as evidenced by Alaska's historic status as one of the top producing states.

That's not to say tax rates don't matter. For one, they can affect where companies choose to explore for more oil. Oil well output starts to fall after just a few years, and without more drilling, a state's production falls as wells age. In Alaska, production since 1990 has fallen faster than in any other state and was a major legislative rationale for lowering tax rates this spring in hopes of jumpstarting more exploratory drilling. This justification also applies to states that offer credits or tax exemptions during early production.

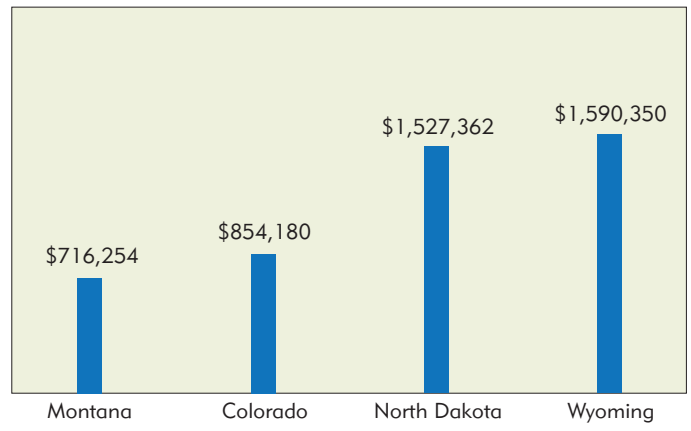
Tax considerations for individual firms also depend on the phase of production. Ron Ness, president of the North Dakota Petroleum Council, said tax rates matter less in the drilling phase because leasing activity will concentrate where the resource looks most promising, and wells have to be completed to preserve lease agreements. But once wells are completed, energy companies evaluate their portfolio of leases to see where capital will be most productive.

"If your return is better in the Eagle Ford [shale formation in Texas] or elsewhere, resources will be diverted," Ness said. "It's no different than any other business—capital chases the best return. With growing shale resource plays, companies are continuously evaluating their options." f

Chart 2

Incentives = big effect on early tax revenue

Cumulative tax revenue for first three years of production from average unconventional (Bakken-like) oil well

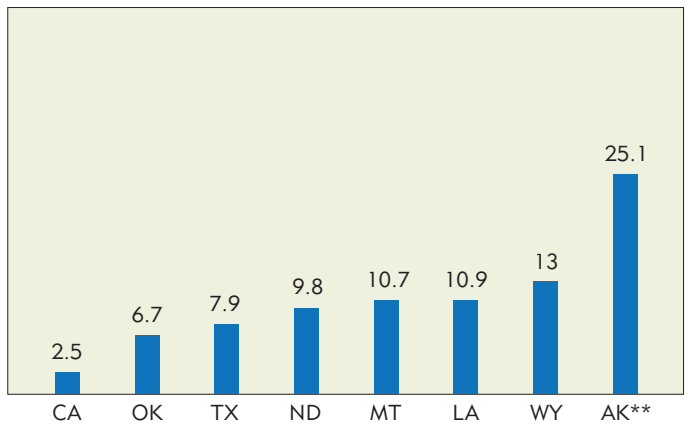


Source: Headwaters Economics

Chart 3

Wide tax disparities

Effective tax rates for oil and gas production*



* Includes severance/production and ad valorem taxes, and is based on FY2010 taxes, credits, exemptions, oil production and pricing.

**Alaska changed its tax structure in April. The value above reflects analysis completed before this change. Updated effective tax rates are projected to be lower going forward.

Source: Covenant Consulting Group, December 2012