THE STATE
of ALASKA
GOVERNOR BILL WALKER

Department of Natural Resources
COMMISSIONER'S OFFICE
550 W. 7th #1400
Anchorage, AK 99501
Main: 907.269.8431
Fax: 907.269.8918

December 2, 2018

Representative Geran Tarr
Co-chair, House Resources Committee
Room 126, Capitol Bldg.
Juneau, AK 99801

Representative Andy Josephson
Co-chair, House Resources Committee
Room 102, Capitol Bldg.
Juneau, AK 99801

Dear Co-Chairs,

At their September 20, 2018 joint hearing in Anchorage, the House and Senate Resources committees received three presentations specific to oil development in the National Petroleum Reserve-Alaska (NPR-A):

- The Department of Natural Resources (DNR) discussed the resource potential of the NPR-A, the state role in development and permitting these federal lands, and the tax and royalty status of various land designations.
- The Department of Commerce, Community, and Economic Development (DCCED) discussed the NPR-A Impact Mitigation Grant Program, by which the state share of federal royalties is used to mitigate community impacts.
- ConocoPhillips discussed its production outlook, expected timeline, and current exploration program.

Following this hearing, additional information was requested regarding potential state revenue flowing from the proposed developments. Because we recognized this would be the first large-scale oil production from non-state lands, DNR and the Department of Revenue (DOR) had already begun doing research and developing models to understand those impacts.

Attached you will find a white paper discussing potential fiscal and revenue impacts resulting from exploration and development activities in the NPR-A. The analysis identifies certain near-term revenue losses, primarily due to tax offsets from the associated expenditures. This paper is a distillation of the model results and is intended to provide you with information that accurately characterizes the positive and negative impacts of ongoing NPR-A developments.

It is important to recognize oil production from federal acreage is different from oil production on state acreage and in some ways significantly so. These differences are described in the narrative sections of this paper. Identifying and quantifying the associated impacts is the principal reason behind providing you this information. We hope you will find it useful in your discussions about NPR-A development.

If you have any questions or desire further or more detailed information, please contact Division of Oil and Gas Director Chantal Walsh.

Sincerely,

Andrew T. Mack
Natural Resources Commissioner

Sheldon Fisher
Revenue Commissioner

Potential Near-Term Impacts of NPR-A Development on SOA Revenues

North Slope Revenue Analysis

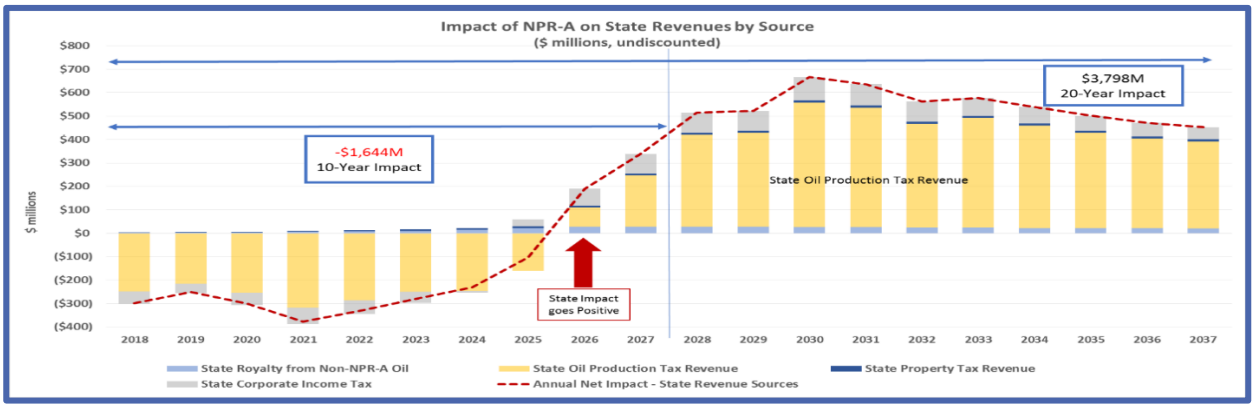
Executive Summary

The purpose of this paper is to provide an analysis of potential National Petroleum Reserve-Alaska (NPR-A) revenues for different Alaska North Slope (ANS) oil price cases. With Department of Revenue (DOR) staff support, Department of Natural Resources (DNR) staff completed this forecast using its North Slope Revenue Forecast Model (Model) for the period 2018 through 2037. All values are nominal and undiscounted. For this analysis, the 50% portion of federal royalty from NPR-A that is shared with the State of Alaska is designated to the NPR-A Impact Fund.

Findings

The ongoing and significant investments in oil and gas exploration and development within NPR-A are widely recognized as being good for Alaska's economy and these long-term direct and indirect benefits of NPR-A development to Alaska will be substantial.

However, in the near-term, under current statutory frameworks and because development in NPR-A will be on federal leases, major NPR-A oil developments will result in lower overall revenues to the State, averaging about $250 million per year for approximately 8 years at a $75 per barrel oil price. (See chart below) These negative State revenues are the result of the deductions of capital costs by the operator against State production taxes in the year of expenditure. These negative production tax revenues to the State will not be offset by royalty revenues given that the 50% shared federal royalties are dedicated to the NPR-A Impact Fund.



Introduction

Over the past several years, Alaskans have been treated to regular good news, with public announcements reporting the exploration, discovery, and planned development of new oil resources within the NPR-A. This large (22.8 million acres) federal reserve is to the west of the current major oil developments, centered on Prudhoe Bay on state lands in the central North Slope.

It is widely recognized oil development is good for the Alaskan economy with the promise of high paying jobs, additional volume in the Trans-Alaska Pipeline System (TAPS), along with many positive secondary and community impacts.

On September 20, 2018, the House and Senate Resources Committees held a joint hearing in at the Legislative Information Office in Anchorage. At the hearing were three presentations specific to NPR-A development:

- DNR discussed the resource potential of the NPR-A, the state role in development and permitting these federal lands, and the tax and royalty status of various land designations.[1]
- Department of Commerce, Community, and Economic Development (DCCED) discussed the NPR-A Impact Grant Program, by which the state share of federal royalties is used to mitigate community impacts.[2]
- ConocoPhillips discussed its production outlook, expected timeline, and current exploration program.[3]

Following this hearing, House Resources Committee Co-Chair Geran Tarr requested additional information from DNR Commissioner Andy Mack about the potential state revenue impact of the proposed developments. The question is particularly relevant because the NPR-A fields will constitute the first major development on non-state lands on the North Slope of Alaska.

Model Overview

The Model anticipates sequential development of the three oil fields known as Greater Mooses Tooth #1 (GMT1), Greater Mooses Tooth #2 (GMT2), and Willow. Commercial production from GMT1 commenced in October 2018. This forecast was completed for the period from 2018 through 2037, at a range of price scenarios. All values are undiscounted. For purposes of this analysis, the 50% portion of the federal royalty from NPR-A that is shared with the State of Alaska and goes to the NPR-A Impact Fund is classified separately as "Federal Royalty Transfer to NPR-A Impact Fund" and is not included in the State revenue amounts.

[1] http://www.akleg.gov/basis/get_documents.asp?session=30&docid=56913
[2] http://www.akleg.gov/basis/get_documents.asp?session=30&docid=56912
[3] http://www.akleg.gov/basis/get_documents.asp?session=30&docid=56907

The production scenarios used in this analysis are "unrisked." This means, broadly, the volumes of oil are assumed to come in with the timing and volume as announced and represented by the producers. These are greater impacts than typically would be presented in the State's official forecasts of production and revenue, which incorporate risk factors that both delay and reduce the potential size and scope of projects.

One important limitation of this analysis is our legal prohibition to use confidential company data. Generally, state agencies can publish confidential oil and data when it is aggregated among three or more companies.[4] The base case (all other production besides that coming from the NPR-A) scenario was developed using DOR production forecasts and DNR internal cost estimates. Because NPR-A development is being done by one company, the NPR-A production and cost forecasts are based on publicly available information from the producer. Therefore, the results of the model can be shared publicly.

Although some of the supporting and comparative graphics include results from four different price scenarios originally analyzed (Spring 2018 Production Forecast, plus per-barrel oil prices of $50, $75, $80), the bulk of this analysis and narrative is focused on the $75 scenario. This is assumed to be a current (2018) market price, which is annually inflated at 2.25% per year for the duration of the analysis.

Capital and operating costs are also assumed to inflate by 2.25% per year. Additional assumptions are described throughout this document.

Production Forecast

To generate a meaningful revenue estimate, the modeling team must first establish a production forecast for the new fields. The process was:

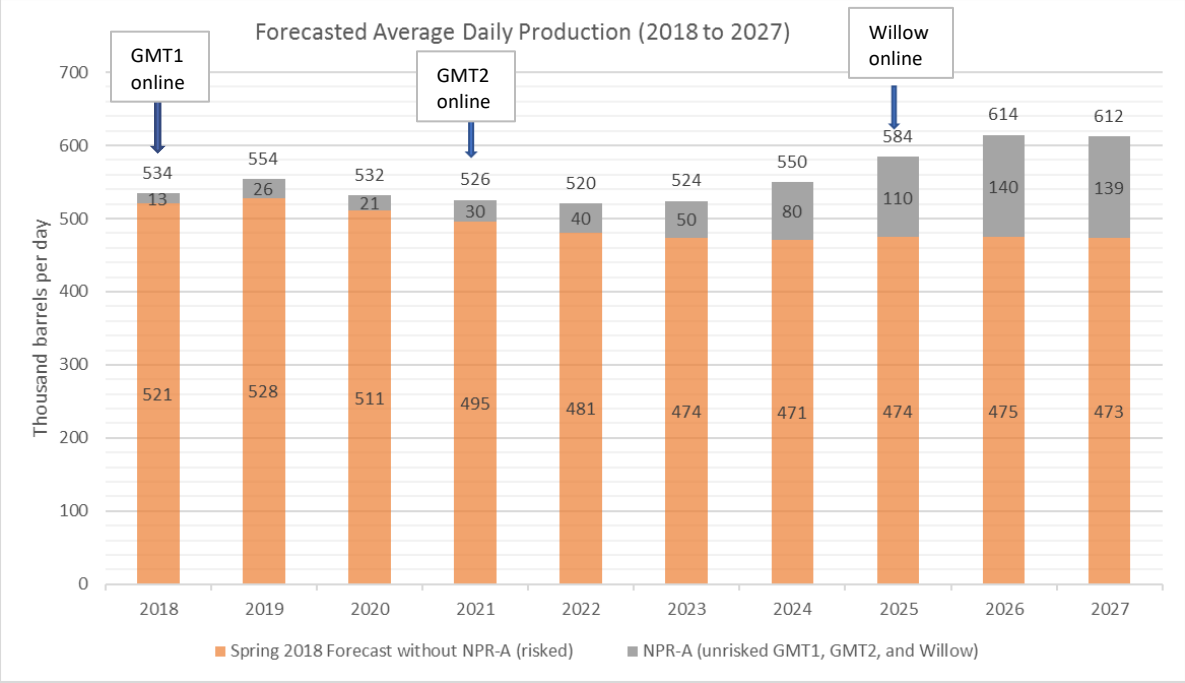
- Derive a Base Case Scenario based on the Spring 2018 Production Forecast less any NPR-A fields that were forecasted to come online during the forecast period (i.e. the "risked" volumes). (Note: due to time limitations with the pending transition, this model was not able to be updated with the Fall 2018 Production Forecast).
- Develop an Alternative Scenario to the Base Case that adds an unrisked NPR-A profile based on publicly available data shown in the table below:

[4] For example, see AS 43.55.890.

NPR-A Field	Total Production Volume (mmbo - million barrels of oil	First Oil Year	Peak Production Year	Peak Production Volume (bpd - barrels per day)
GMT1 [1]	48	2018	2019	26
GMT2 [2]	180	2021	2023	39
Willow [3]	576	2024	2026	95

[5]

- When layered on the official spring 2018 forecast, the combined incremental production volumes used in the analysis are as shown below:



[5] Source data for public field information:

[1] http://www.petroleumnews.com/pnads/50725796.shtml

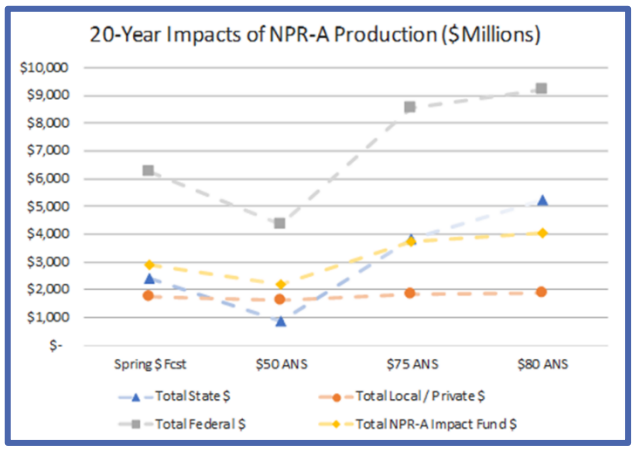
[2] https://static.conocophillips.com/files/resources/fact-sheet-gmt2-current-final.pdf, https://static.conocophillips.com/files/resources/copa-announces-gmt1-first-oil.pdf. Assumption: 5MMBO/Well

[3] https://static.conocophillips.com/files/resources/jepsen-commonwealth-north.pdf

Revenue Baseline and Increment

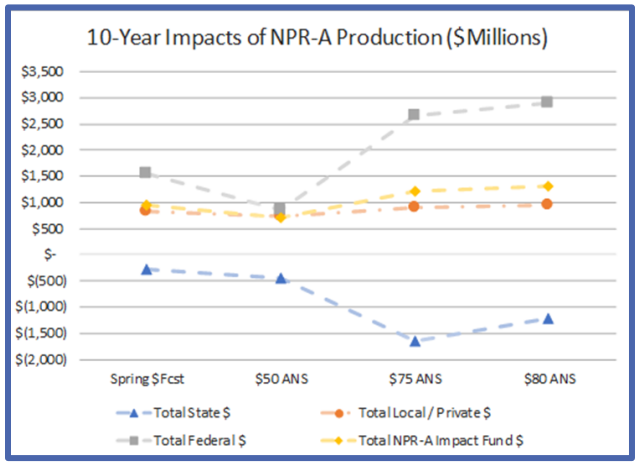
To put the expected incremental revenue figures in this analysis in perspective, it is important to first establish the baseline revenue.

Over the 20-year forecast period (2018-2037), the total state, local, private, and federal revenue from expected Alaska oil and gas production is $102.9 billion. Of this, $65.7 billion will accrue to the state (64%). In the initial 10-year period (2018-2027), total revenue will be $47.2 billion with $29.3 billion (62%) accruing to the state.



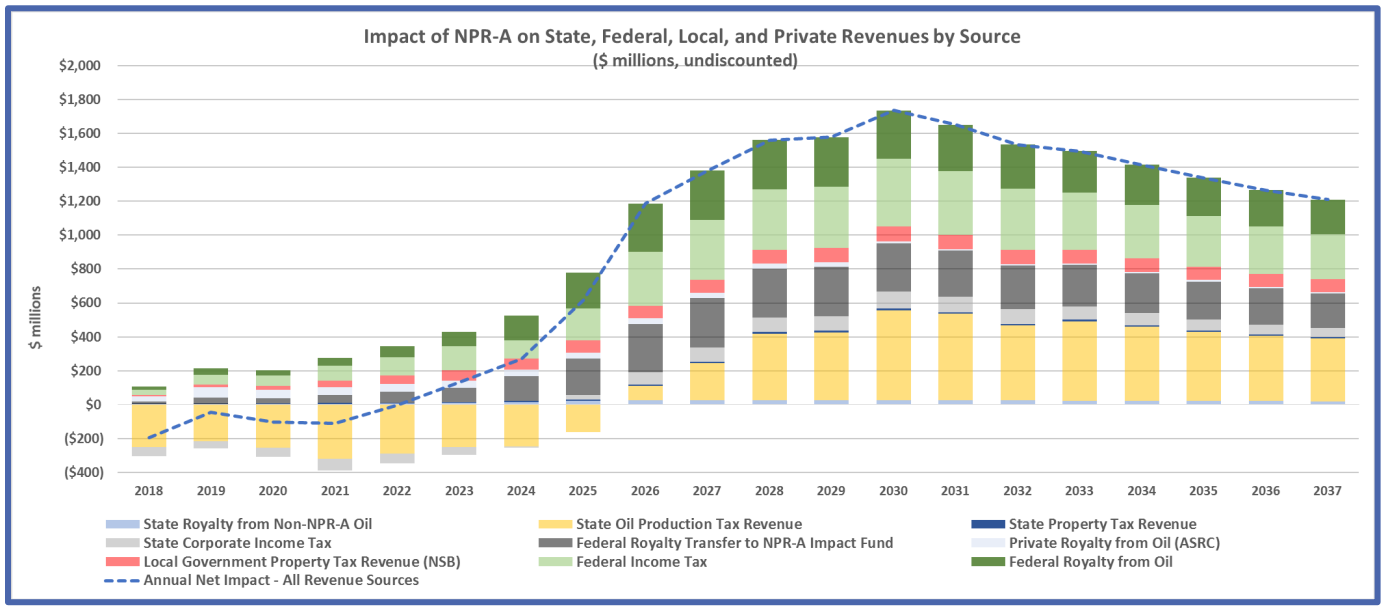
The addition of the unrisked NPR-A volumes add an incremental $17.9 billion in state, local, private, and federal revenue over the 20-year forecast period, with $3.8 billion accruing to the state (21%). This represents a 17% increase to overall revenue and a 6% increase to state revenue.

Over the first 10 years of the forecast, however, the total revenue from the three projects is $3.1 billion, with negative revenue for the state of -$1.6 billion (-52%). This represents a 7% increase to overall revenue and a 6% decrease to state revenue.

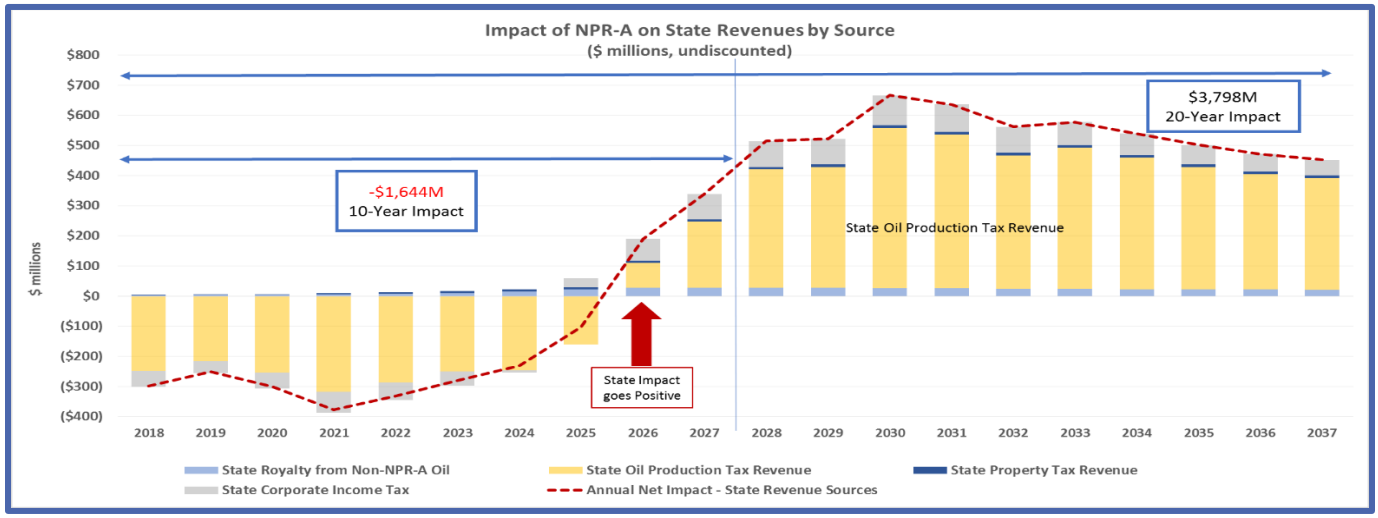


Revenue Detail

Separating revenue categories into nine separate components provides additional insight. This graph includes four state revenue components (production tax, corporate income tax, property tax, and royalty), two federal components (royalty and corporate income tax), two local government components (property tax and Federal Royalty Transfer to NPR-A Impact Fund), and private royalty income.



Further isolating the four state revenue components yields these results:



Discussion of Individual Revenue Items: Royalty

Mineral royalties are generally understood as the landowner's share of a resource. Since the beginning of North Slope production in 1977, the majority of production has been from state lands, with royalty paid to the Department of Natural Resources.

FEDERAL ROYALTY AND STATE IMPACT FUND

In contrast, all receipts from sales, rentals, bonuses, and royalties on federal leases issued in the National Petroleum Reserve-Alaska are paid to the federal treasury. The governing statutes for the Reserve, including those for oil and gas leasing, reside in Title 42 of the United States Code. However, 42 U.S.C. § 6506 directs the Secretary of the Treasury to remit half of that revenue to the State of Alaska each year. Specifically, the statute designates this money be used for:

> *(1) planning;*
>
> *(2) construction, maintenance, and operation of essential public facilities; and*
>
> *(3) other necessary provisions of public service: Provided further, that in the allocation of such funds, the State shall give priority to use by subdivisions of the State most directly or severely impacted by development of oil and gas leased under this Act.*

A special revenue fund for the state share of NPR-A royalties is established in AS 37.05.530. This statute instructs Department of Commerce, Community and Economic Development (DCCED) to administer a grants program to municipalities that can demonstrate "present impact, or the need to determine or plan for future impact" from oil and gas development in NPR-A. Grants can be given to municipalities only, and are currently limited to the six communities "impacted by (NPR-A) oil and gas development": Nuiqsut, Wainwright, Utqiagvik, Anaktuvuk Pass, Atqasuk, and the North Slope Borough. The statute mandates the department "shall fund all meritorious grant applications out of the money appropriated to it each year."

The statute also establishes a priority for use of the funds by the State of Alaska after grants to impacted communities have been disbursed. If there is money left over, the remaining amount shall be deposited first to the Permanent Fund (25 percent of total NPR-A receipts in a fiscal year), then to the Public-School Trust Fund (0.5 percent). If money is left over after these payments, any unfunded deposits to those two funds from prior years must be repaid. After those obligations, any remaining revenue is to be deposited into the Power Cost Equalization and Rural Electric Capitalization funds. To date, all funds received via NPR-A federal revenue sharing (approximately $209 million from FY1987 through FY2019) have been disbursed to municipalities via the grant program. It is expected the communities will apply for 100% of future revenue sharing funds.

Historically, these revenues have been from federal lease bonuses and annual payments. Annual revenues over the past 10 years have ranged between $1.4 million and $16 million. As production and federal royalty income increases, these revenues will increase substantially:

Contribution to NPR-A Impact Fund	Peak Year	Peak Amount ($ Millions)	10-Year Period	20-Year Period
Price Case #1 - Spring 2018 Forecast	2029	$ 228	$ 943	$ 2,916
Price Case #2 - $50 ANS (nominal)	2029	$ 171	$ 712	$ 2,204
Price Case #2 - $75 ANS (nominal)	2029	$ 292	$ 1,211	$ 3,741
Price Case #2 - $80 ANS (nominal)	2029	$ 316	$ 1,311	$ 4,048

In the $75 price scenario, the $3.7 billion in impact fund revenue over the 20-year project period is almost exactly equal to the $3.8 billion the state will receive from NPR-A production from all other revenue sources.

PRIVATE LAND WITHIN NPR-A

There are private inholdings within NPR-A, generally lands that were selected by regional and village Native corporations via rights granted through the Alaska Native Claims Settlement Act. Mineral revenues from these lands goes to the private owner and is not subject to revenue sharing with the state. The approximate private ownership percentage of the leases within the three subject properties are:

- GMT1: Federal (BLM) 18%; Private (ASRC) 82%
- GMT2: Federal (BLM) 92%; Private (ASRC) 8%
- Willow: Federal (BLM) 100%

Clearly, the quantity of royalty sharing funds will increase substantially when GMT2 begins production, in approximately 2021.

OTHER ROYALTY ISSUES

In addition to the NPR-A federal royalty issues, there are two potential additional indirect royalty impacts. These are:

- The additional volumes from NPR-A development will tend to reduce the per-barrel cost (tariff) of shipping crude oil via TAPS. Many of the pipeline's maintenance and operations costs are fixed annual expenses that would be divided among a larger number of barrels. This increases the wellhead value

of all oil using the pipeline, including existing North Slope production from state lands. Royalties and production taxes are based on a percentage of "netback" or wellhead value, so the state should anticipate additional royalty and production tax revenue from current production. This impact is captured within the Model.

- Production from Greater Mooses Tooth #1 and 2 is expected to use existing processing facilities located at the Colville River Unit to separate oil, gas, and water prior to shipment via TAPS. Because these facilities are at capacity, there will be a certain amount of "backout" of current production to make room for this new oil. Generally, a producer will back out older production with a high water to oil ratio and replace it with new production with a lower water component. Any backed-out volumes from Colville River would likely be state royalty-paying production, so the state should expect to see reduced royalty revenue, at least in early production years, from the backouts. This impact is not currently captured in the model.

Discussion of Individual Revenue Items: Production Tax

OVERVIEW

All production in Alaska, whether on state, federal, or private land, is subject to the oil and gas production (sometimes called "severance") tax. Alaska's oil and gas production tax is based on a measure of net profits. A producer can deduct certain costs (called lease expenditures) incurred in exploring for, developing, and producing the resource from the taxable value of the oil. The resulting amount, referred to in statute as "production tax value" is subject to a 35% tax rate. The tax is then offset by a production credit of $8 per taxable barrel produced at wellhead values below $80 (equal roughly to a market price of $90). This per-barrel credit is gradually reduced at higher prices.

Additionally, oil meeting specific statutory definitions qualifies for a "gross value reduction," or GVR, which further reduces production tax value by a percentage of gross value. This reduced value is then taxed at the same statutory 35% rate, and then receives a fixed $5 per taxable barrel production credit. After three to seven years, depending on the price of oil, new oil production ceases to receive the reduced GVR tax treatment and reverts to the regular legacy oil tax.

Oil production is also subject to an alternative minimum tax, or "floor", equaling 4% of wellhead value. For legacy oil, the per-barrel credit cannot reduce taxes below this level. For GVR-eligible oil, the per-barrel credit can reduce the tax liability to zero.

DEVELOPMENT IMPACT

The production tax is based on the taxable value of oil and/or gas in various areas of Alaska, generally referred to as "segments." Most oil and gas from the North Slope is considered a single segment for tax purposes.[6]

During the years when a field is under development, the production tax has a very different impact on a new producer without any other production on the North Slope, versus an incumbent producer with existing production. A new producer will incur a net operating loss, which can be carried forward into a future year and used to offset tax liability once the field is in regular production. In contrast, an incumbent producer can generally offset the costs of a new field from income received from its other North Slope property. The three NPR-A properties in this analysis are on lands leased by an incumbent producer.

By far the largest portion of the negative cash flows seen for the first eight years of NPR-A development is due to production tax offsets. Each $1 million spent on capital and operating costs reduces a producer's income by that amount, resulting in a tax savings of $350,000 at $75 per barrel oil. The per-barrel credit calculation is not impacted by this spending. The result is an average production tax loss for these eight years of $247 million per year at $75 per barrel oil.

Because of the staggered sequence of the planned development – GMT1, then GMT2, then Willow – these impacts extend over multiple years. As one field comes into production, the profits are immediately reinvested in the next field.

Further compounding the production tax offset is the technical structure of the production tax itself. Although the statutory (nominal) tax rate is 35%, the effective rate, after the use of the per-barrel credits, is substantially less. At $75 oil and current cost assumptions, the effective rate is about 15%. So while a company is able to enjoy a 35% tax offset for incremental spending, it generally pays 15% of incremental profits.

PRODUCTION TAX FROM PRIVATE LAND

As described in the Royalty section, there are substantial private land interests within the NPR-A resulting in significant private royalty revenues for the landowners. Private royalty interests are subject to a separate oil and gas production tax of 5% of the gross value for oil and 1.667% of the gross value for gas.[7] This tax has not historically been a major revenue source for the state. With

[6] On the North Slope, gas that is produced and used in state is subject to separate, favorable tax treatment based on the Cook Inlet gas tax regime, and is considered a separate segment. Also, beginning in 2022 North Slope gas that is exported will be subject to a 13% "gross" tax rather than the current "net" tax. However, lease expenditures associated with both oil and gas production will remain deductible from the production tax on oil.

[7] AS 43.55.011(i)

the start of production from CD-5 in 2015 and GMT1 in 2018, both of which have significant private land components, this is beginning to change.

Discussion of Individual Revenue Items: Property Tax

OVERVIEW

The State's petroleum property tax, AS 43.56, is an ad valorem tax based on 2% (20 mills) of the depreciated value of all tangible oil and gas property in the state. Although assessed and administered by the DOR, the bulk of property tax revenue accrues to local governments. A municipality may claim a portion of the 20 mill tax equal to the tax rate it collects on the non-oil property within its jurisdiction. In the North Slope Borough case, the local mill rate is currently 17.99%, meaning that just under 90% (18/20) of the tax goes to the borough and only 10% to the state.

The additional capital spending required to build the NPR-A fields will result in several billion dollars' worth of additional taxable property, including wells, drill pads, pump stations, and processing facilities.

TAX CAP DISCUSSION

There is a protection provision built into statute to prevent a single municipality from unequally benefiting due to it hosting a disproportionate portion of statewide property value. Substantial new upstream development could potentially trigger this "tax cap."[8] In practice, however, the North Slope Borough has been "tax capped" for many years but has still been able to capture roughly 90% of the property tax value. This is not likely to change, due to three key features in the cap formula that will allow the cap to adjust with new development. These are:

1) The tax cap formula includes a factor based on the population of a municipality. The NSB tax cap calculation customarily includes nonresident worker populations in this formula. The additional workforce associated with new development in NPR-A will add substantial additional cap space;
2) The tax cap formula includes another factor that is based on the statewide average per capita assessed value. This factor will increase with billions of dollars in new investment, and thereby increase NSB's tax cap; and
3) Perhaps most significantly, it is only a municipality's operating costs that are subject to the tax cap.[9] In practice, NSB is already subject to the cap, with its capped mill rate substantially below the 17.99 mills it collects on property in the Borough. However, the Borough can be very flexible with its annual

[8] AS 29.45.080
[9] AS 29.45.100

debt service payments, which are not subject to the cap. The Borough typically calibrates its debt service each year so that, when added to its capped operating revenue, it equals the full mill rate.

Therefore, it is unlikely that major new development would impact the North Slope Borough's ability to continue to claim 90% of the associated property tax revenue. The modeling assumes this 90/10 split for the duration of the forecast period.

Discussion of Individual Revenue Items: Corporate Income Tax

STATE CORPORATE INCOME TAX

Alaska's corporate income tax is only applicable to traditional "C" corporations. Companies structured as partnerships, S-corporations, and LLCs do not pay this tax. These are considered "pass-through" entities, where the profits are accounted for within the income of the individual owners. As Alaska is one of seven states without a state income tax, income from these types of entities is not taxed by the state.

For this analysis, all production in NPR-A is attributed to companies that are subject to the state and federal corporate taxes. Like the production tax, an incumbent producer is able to deduct their costs associated with developing a new field from their profits earned on their existing fields. The corporate income tax analysis assumes an average state rate of 6.5%.[10] Therefore, each $1 million investment in a new field reduces taxable income by that amount, and thereby reduces corporate income tax revenue by approximately $65,000.

FEDERAL CORPORATE INCOME TAX

After all state and local taxes are paid, the remaining income is subject to the federal income tax, which is estimated at the top marginal rate (based on the 2018 tax bill) of 21%. During the early years of development when state production and corporate taxes are reduced due to the spending offsets, company after-tax profits will tend to increase. Therefore, in the Model the federal income tax is a positive increment in all years of the forecast period.

Disclaimer

The Model is intended to forecast the potential impacts from new North Slope oil developments for state, federal and local (private and government) revenues. This

[10] Alaska's corporate income tax, AS 43.20, for oil and gas producers has a top marginal rate of 9.4%. However, the business income of a taxpayer is not based on their Alaska-specific income. Rather, it is based on a share of their worldwide income, apportioned to their Alaska-specific share of their sales, property, and production. In practice, this calculation results in a typical current producer paying an effective corporate tax rate of about 6.5%.

includes royalties, production taxes, corporate income taxes, and property taxes. The Model was created ***as a forecasting tool only*** and ***is not intended to precisely calculate the future revenue*** and cost streams to the State of Alaska, other governments, or the North Slope Producer(s). The accuracy is adequate for a forecasting tool and to show new developments coming online and their potential impacts on the various revenue streams.

The information presented here is highly speculative. The Departments of Natural Resources and Revenue work to provide forecasts with the best information available to them at the time. Certain fields have unknown cost and risk profiles, which could significantly alter the results.