

# Regional Details: Alaska

In this appendix, we describe the methods the government uses to obtain revenues from oil and gas production in Alaska. We present quantitative estimates of revenues as well as cost and resource value figures over the study period and discuss environmental impacts associated with oil and gas production in the state. We begin with background information on oil and gas production in Alaska.

## Background

In this appendix, we identify the government authorities that play a role in regulating, managing and/or facilitating oil and gas production in Alaska. For each authority, we provide a brief description of its relevant responsibilities. We also present background information on the oil and gas sector, with figures for oil and gas production, employment in the oil and gas sector, and gross domestic product associated with oil and gas production in Alaska.

### ***Responsible Authorities***

The **Division of Oil and Gas** in the **Department of Natural Resources (DNR)** is the main authority for oil and gas developments in Alaska. The Division of Oil and Gas delivers seven primary services:

1. It ensures that promising oil and gas lands are made available for competitive leasing on a timely and predictable basis, and that the state receives full value for the sale of these resources;
2. It advances innovative programs, such as exploration licensing and expanded exploration incentive credits, that promote exploration and development on both state and private lands in frontier interior basins;
3. It ensures that all royalty, rental and bonus revenues due to the state from leasing and production are received, and that shared federal royalties are received and properly allocated;
4. It ensures that the surface operations of lease- and permit-holders are conducted in an environmentally, socially and economically sound manner;
5. It advocates petroleum resource development throughout the state;
6. It develops and advocates marketing strategies for Alaska oil and gas, including negotiating royalty oil purchase agreements with in-state refineries; and,
7. It provides technical and policy support on oil and gas issues for the DNR Commissioner's and Governor's office and Alaska's congressional delegation.

### ***Oil and Gas Production in Alaska***

Oil and gas production in Alaska is centred around two main geographic areas: Cook Inlet and the North Shore. State production started in 1959 with an oil field at Swanson River in Cook Inlet. Numerous other fields became active in the 1960s and 1970s. Oil production began in the North Slope region in 1969. Prudhoe Bay on the North Shore is North America's largest oil field, accounting for about 25 percent of the oil produced in the United States.<sup>1</sup> Table 1 shows oil and gas production from 1995 to 2002, inclusive. As the figures indicate, total oil and gas production in Alaska declined steadily between 1995 and 2002.

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<sup>1</sup> Warrack, Allan A. and Russell R. Keddie. *Alberta Heritage Fund vs. Alaska Permanent Fund: A Comparative Analysis*. Edmonton, Alberta: University of Alberta, Faculty of Business.

**Table 1 Oil and gas production, Alaska, 1995 to 2002 (million BOE)**

<b>PRODUCTION</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>
Total	571	544	508	463	416	388	382	388

Source: [www.dog.dnr.state.ak.us/oil/programs/royalty/production.htm](http://www.dog.dnr.state.ak.us/oil/programs/royalty/production.htm)

While the largest oil fields in Alaska – Prudhoe Bay and Kuparuk – are nearing the end of their lives, smaller and more numerous satellite oil and gas reservoirs are being developed and produced. The long-term picture for oil production is one of gradual decline, supplemented by smaller field oil development and gas field development in or near existing infrastructure. Oil production from the North Shore is expected to remain at current levels for at least the next eight years.

### ***Oil and Gas Employment in Alaska***

Table 2 presents direct employment figures for oil and gas production in Alaska. The table shows total employment figures for the state, as well as the share of total employment attributable to oil and gas production. The figures indicate that, while total employment in the state has increased (by 13 percent between 1995 and 2002), employment associated with oil and gas production has remained relatively constant. As a result, the portion of total employment attributable to oil and gas production has declined slightly.

**Table 2 Employment associated with oil and gas production, Alaska, 1995 to 2002**

<b>EMPLOY'T</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>
Oil and Gas	8,900	8,500	8,300	9,309	7,900	8,700	9,500	8,800
Total	262,000	263,600	268,700	275,000	277,800	283,900	289,300	295,800
% of Total	3.4%	3.2%	3.1%	3.4%	2.8%	3.1%	3.3%	3.0%

Source: Alaska Department of Labor Web site

### ***Oil and Gas Gross Domestic Product in Alaska***

Table 3 presents gross domestic product (GDP) associated with oil and gas production, total state GDP, and oil and gas GDP as a percentage of GDP generated by all industries. The figures indicate that growth of the oil and gas sector has been outpaced by growth of the state economy. While “all industries” GDP increased by 15 percent between 1995 and 2002, GDP associated with oil and gas production in Alaska declined by 4 percent. Despite this decline, the oil and gas sector constituted a significant 19 percent share of total state GDP in 2002.

**Table 3 GDP associated with oil and gas production and state GDP, Alaska, 1995 to 2002 (million 2000\$)**

<b>GDP</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002<sup>2</sup></b>
Oil and Gas	8,544	9,679	9,593	6,082	6,661	8,546	7,703	8,167
All Industries	37,797	37,190	37,964	36,203	39,789	40,689	41,650	43,401
% of Total	23%	26%	25%	17%	17%	21%	18%	19%

Source: [www.bea.gov/bea/regional/gsp](http://www.bea.gov/bea/regional/gsp)

<sup>2</sup> 2002 figures for Alaska are not yet available. Oil and gas GDP is estimated based on total oil and gas production in 2002. Total state GDP is assumed to be the same in 2002 as in 2001, before accounting for inflation.

## Oil and Gas Revenue Generation

In Alaska, licences convey the right to undertake exploration activities and are granted to the applicant who has committed the most money to an exploration program. The recipient of a licence must post a bond in the amount of the work commitment and pay a US\$1 per acre licence fee. During the term of a licence, any portion of the licensed area may be converted to oil and gas leases, which convey the right to develop oil and gas resources and are granted through a competitive bidding process in which the highest bidder is awarded the rights to a tract of land. There is a standard annual rental fee for leases of US\$1 per acre for the first year, increasing to a maximum of US\$3 per acre after the fourth year.<sup>3</sup> Once leases are granted, oil and gas producers are liable for royalties and other taxes payable to the State of Alaska. Table 4 lists the fees used to obtain revenues from oil and gas producers in Alaska.

**Table 4 Key means of revenue generation, Alaska**

COMPONENT	KEY ATTRIBUTES
Oil and Gas Royalties	The State of Alaska can take its share of oil production in kind or in value. When the government takes its royalty share in kind (RIK), it assumes possession of the gas and oil. The Commissioner of Natural Resources may sell the RIK gas or oil in a competitive auction or through a non-competitive sale negotiated with a single buyer. When the government takes its royalty in value (RIV) the lease holders remit cash payments. The royalty rate varies, according to the lease agreement, from 5% to 60%, but is most often 12.5%.
Bonus Bids	Alaska uses a bonus bid system to lease certain state-owned lands for oil and gas exploration and development. Each sale involves a specific group of leases. Sealed bids are accepted for each lease offered in the sale, and the highest bid acquires exploration and development rights, subject to the terms of the lease.
Oil and Gas Settlements	Oil and gas companies must pay these fees to compensate for incorrect fees and royalties paid previously.
Property Tax	The Property Tax Group is responsible for assigning a value to all petroleum exploration, production and pipeline transportation property in Alaska. The oil and gas property tax rate is 2% of the assessed value.
Corporate Income Tax	Alaska levies a corporate net income tax based on federal taxable income with certain Alaska adjustments. Tax rates are graduated from 1% to 9.4% in increments of \$10,000 of taxable income. The 9.4% maximum rate applies to taxable income of \$90,000 or more.
Production Taxes	All oil and gas production in Alaska, except the federal and state royalty share, is subject to the state's production taxes. These taxes comprise the oil and gas production tax and a hazardous release surcharge levied only on oil. For the oil production tax, the tax rate depends on the age and level of production of the well. The statutory tax rate for oil is 12.25% of its value at the point of production for the first five years of field production, and 15% thereafter. There is a minimum tax of US 80 cents per taxable barrel.
Rents	Rents are paid on leases, which permit exploration and development.

<sup>3</sup> See [www.dog.dnr.state.ak.us/oil/programs/licensing/licensing.htm](http://www.dog.dnr.state.ak.us/oil/programs/licensing/licensing.htm).

**Table 4 Continued**

<b>COMPONENT</b>	<b>KEY ATTRIBUTES</b>
Exploration Licences	An area selected for an Exploration Licence must be between 10,000 and 500,000 acres. A licence is awarded to the applicant who has committed the most money to an exploratory program. The recipient of a licence must post a bond in the amount of the work commitment and pay a US\$1/acre licence fee.
Federal Payments	Oil and gas corporations operating in Alaska are subject to federal corporate income tax. They also pay royalties on federal lands and on the Outer Continental Shelf Offshore Alaska.

As in the Canadian regions, oil and gas producers in Alaska benefit from a number of deductions and credits designed to facilitate and encourage oil and gas production in the state. In Alaska, there are incentives related to exploratory wells, productivity, discovery wells and shallow wells.

**Table 5 Key deductions and credits related to oil and gas, Alaska**

<b>COMPONENT</b>	<b>KEY ATTRIBUTES</b>
Exploration Incentive Credit (EIC) Program I	Credits, up to 50% of costs, are available for drilling exploratory wells and geophysical work on state-owned land.
Exploration Incentive Credit (EIC) Program II	EICs, up to 25% of costs, are available for exploratory drilling, drilling a stratigraphic test well and geophysical work on land in the state that is not state-owned.
Royalty Reductions	If a field or pool has not previously produced, the royalty can be lowered to 5%. For producing fields or pools, the royalty may be reduced to a minimum of 3%.
Discovery Royalty	This measure permits reduced royalties for wells in the Cook Inlet sedimentary basin that have discovered oil or gas in a previously undiscovered oil or gas pool.
Shallow Gas Leasing	Non-competitive leases are available to explore for and develop natural gas <sup>4</sup> reservoirs if the field is within 3,000 feet of the surface. Under this program, there is no bonus payment and annual rental payments remain at the minimum level.
Cook Inlet Royalty Reduction	This program grants a 5% temporary royalty on the first 25 million barrels of oil and the first 35 billion cubic feet of gas produced in the first 10 years of production from six specified fields in the Cook Inlet sedimentary basin.

## Quantitative Results of Revenue Generation

Table 6 demonstrates the trend in revenue generation from oil and gas producers in Alaska. The major sources of revenue were royalties, especially natural gas royalties, and income taxes. Total revenue generation declined by 39 percent between 1995 and 2002.

<sup>4</sup> Also applies to coalbed methane.

**Table 6 Revenue from oil and gas production, Alaska, 1995 to 2002 (million 2000\$)**

REVENUE SOURCE	1995	1996	1997	1998	1999	2000	2001	2002
Royalties, Bonus Bids and Rents <sup>5</sup>	1,437	1,316	1,534	1,077	784	1,566	1,654	1,305
Oil and Gas Settlements	2,692	825	835	628	115	669	92	138
Corporate Income and Other Taxes	672	695	810	717	654	617	879	681
Production Tax	1,210	1,136	1,317	849	578	1,016	1,025	754
Federal Income Tax <sup>6</sup>	1,982	1,876	1,857	1,909	2,024	1,880	1,894	1,974
<b>TOTAL</b>	<b>7,993</b>	<b>5,847</b>	<b>6,352</b>	<b>5,180</b>	<b>4,155</b>	<b>5,749</b>	<b>5,544</b>	<b>4,852</b>

Table 7 compares trends in revenue generation with production to determine if the Alaska government is capturing relatively more or less revenue today than in 1995. The figures in the table show that both revenue and production declined between 1995 and 2002. More specifically, between 1995 and 2002, revenue decreased by 39 percent and oil and gas production declined by 32 percent. It is not surprising that revenue per unit of oil and gas produced also declined between 1995 and 2002, from \$13.3/BOE to \$10.5/BOE.

**Table 7 Revenue generation and production, Alaska, 1995 to 2002 (million 2000\$)**

SUMMARY	1995	1996	1997	1998	1999	2000	2001	2002
Revenue (million 2000\$)	7,993	5,847	6,352	5,180	4,155	5,749	5,544	4,852
Production (million BOE)	571	544	508	463	416	388	382	388
<b>Revenue/Production (2000\$/BOE)</b>	<b>13.3</b>	<b>10.5</b>	<b>12.2</b>	<b>10.5</b>	<b>8.7</b>	<b>13.7</b>	<b>13.0</b>	<b>10.5</b>

## Economic Rent in Alaska

Table 8 presents data for the value of oil and gas resources and the cost of oil and gas production annually for Alaska. Figures are shown as 2000\$/BOE, like the revenue figures in the previous section. The value of oil and gas resources in Alaska increased by 58 percent between 1995 and 2002. At the same time, the cost of production increased by 92 percent. The government of Alaska captured a high level of economic rent in every year over the study period. This was the case whether there was relatively little or even no economic rent available or whether significant rent was available for capture.

<sup>5</sup> Includes federal royalty payments.

<sup>6</sup> This is the best available information. The Alaska Revenue Department estimates that oil and gas producers in Alaska have paid US\$1.3 billion per year in federal income taxes since 1990.

**Table 8 Resource value, production costs and economic rent (2000\$/BOE), Alaska, 1995 to 2002**

	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>
Resource Value	17.5	18.7	23.5	20.9	16.2	24.8	31.4	27.6
Production Cost	16.6	20.2	11.5	17.5	19.3	16.8	16.7	31.9
Economic Rent	0.9	0.0	12.0	3.4	0.0	8.0	14.7	0.0
<b>Rent Capture</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>88%</b>	<b>100%</b>

*Source: Value figures from Personal communication with Alaska government*

## Summary

Alaska has experienced a decline in oil and gas production since 1995. It is not surprising, therefore, that the amount of revenue obtained in the state has also declined since 1995. While oil and gas production declined by 32 percent between 1995 and 2002, over the same period the amount of revenue decreased by 39 percent. The fact that revenue and production have declined together explains why the amount of revenue per unit of production has remained relatively constant over the study period. In some years it is obvious that increased revenue is compensating for relatively lower production rates so revenue per unit of production does not vary significantly. For example, revenues obtained in 1996 and 2000 were fairly similar, yet the amount of oil and gas production associated with those revenues was much smaller in 2000 than in 1996. The higher revenues in 2000, despite lower production levels, are due to higher prices for oil and gas in 2000 relative to 1996. Despite swings in commodity prices, the government of Alaska was successful at capturing a high degree of economic rent in every year over the study period.