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# **Analysis of Alaska's Tax System, North Slope Investment and The Administration's Proposal SB21 / SRES CS SB21**

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**March 1, 2013**

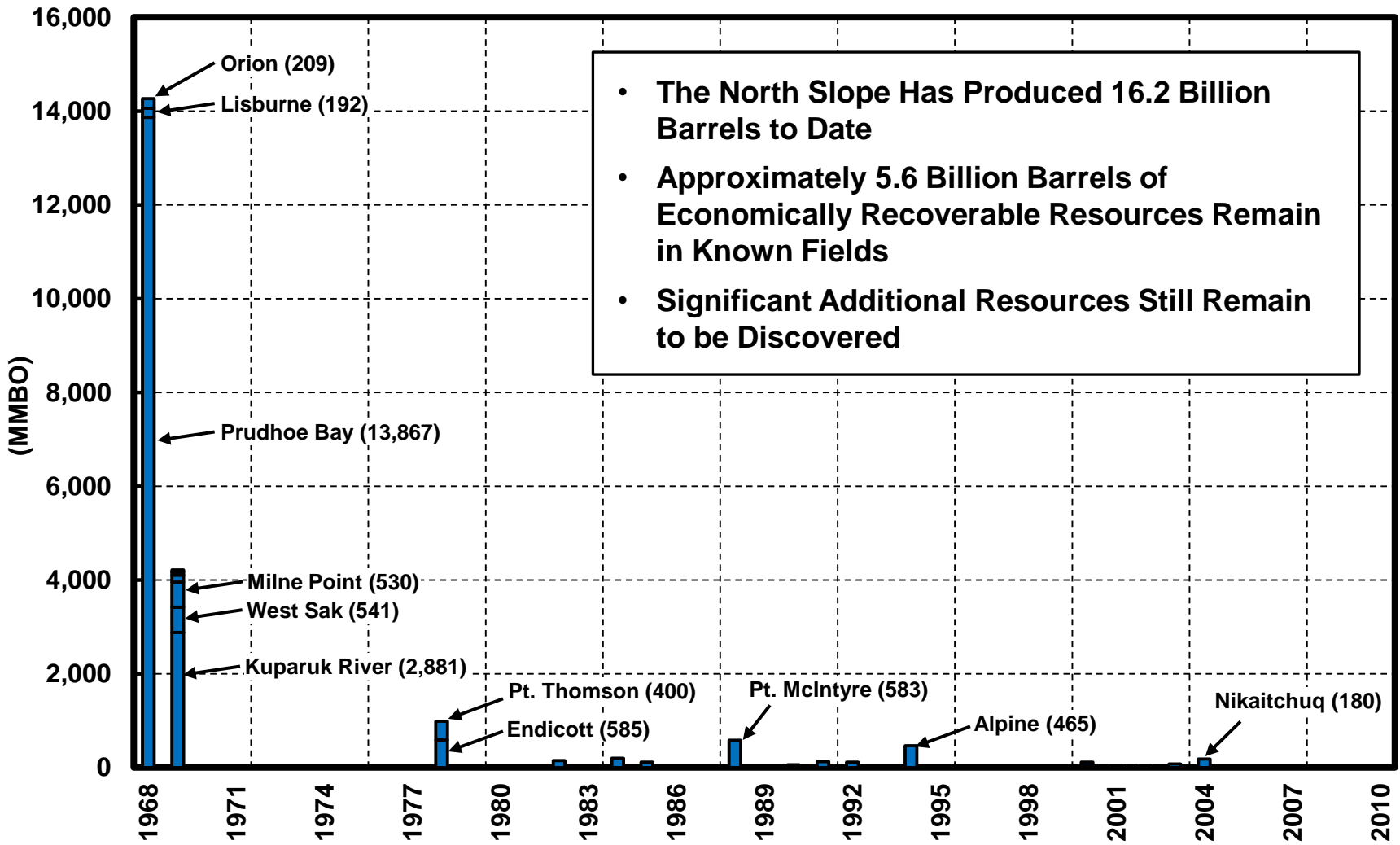
# Econ One: Who We Are

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- **Economic Research and Consulting Firm**
  - **We Provide Economic Analysis In Energy and Other Industries**
- **We Have Advised the State of Alaska on Petroleum Related Matters For Over Two Decades**
- **We Have Worked With the Cowper, Hickel, Knowles, Murkowski, Palin, and Parnell Administrations**
- **We Assisted the Legislature Between 2005 and 2008 on Tax and Gas Development Issues**
- **Our Energy-Related Work Outside Alaska**
  - **State Governments: Texas, Louisiana, New Mexico, Oklahoma, California**
  - **Federal Government Agencies: Department of Interior, Federal Trade Commission**
  - **Energy Companies: Producers, Refiners, Mid-Stream Services, Pipelines, Chemicals**

# Background

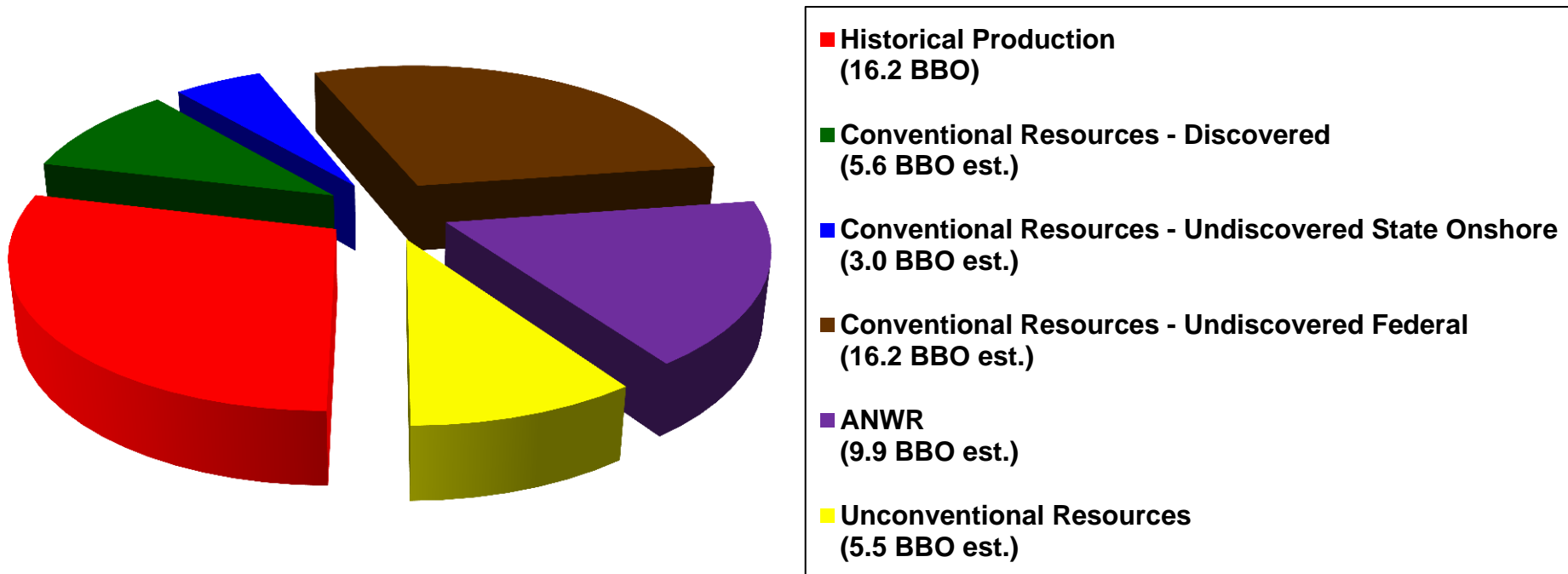
# Alaska North Slope Discovered Resources by Discovery Year (1969 – 2010)



Source: DNR: The Historical Resource and Recovery Growth in Developed Fields, Arctic Slope of Alaska, 2004; DOE/NETL-2009/1385; AOGCC.

# Alaska North Slope Production and Resources

- **Many North Slope Fields are Now at Mature Stages. However, Less Than Half of its Potential Economic Oil Resources Have Been Produced to Date**
- **In Total, the North Slope Contains Approximately 40 Billion Barrels of Additional Estimated Economic Recoverable Resources at Today's Prices**



# Estimated Undiscovered Conventional Oil Resources on Alaska North Slope

	Technically Recoverable Resources			Economically Recoverable	Expected Typical
	P95	Mean	P5	@ \$90/bbl	Field Size
	(1)	(2)	(3)	(4)	(5)
	(Million Barrels)				
Central North Slope	2,800	3,400	3,900	3,000	32 - 64
Beaufort Sea	400	8,200	23,200	5,800	-
Chukchi Sea	2,300	15,400	40,100	9,900	-
NPRA	400	900	1,700	500	32 - 64
ANWR	5,900	10,400	15,200	9,900	64 - 128
<b>Total</b>		<b>38,300</b>		<b>29,100</b>	

Source:

USGS Reports 2011-1103 and 2009-1112;

BOEM, Assessment of undiscovered technically recoverable oil and gas resources of the nation's outer continental shelf.

# Estimated Undeveloped Unconventional Oil Resources on Alaska North Slope

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**Shale** **~ 1 Billion Bbls**  
 (Mean Estimated Technically Recoverable Barrels)  
*(USGS, 2012)*

**Viscous and Heavy Oil**  
 (Includes All Schrader/West Sak and Ugnu Reservoirs in the Kuparuk River,  
 Prudhoe Bay, Milne Point and Nikaitchuq Units, Not Just PAs or Areas  
 Under Development )

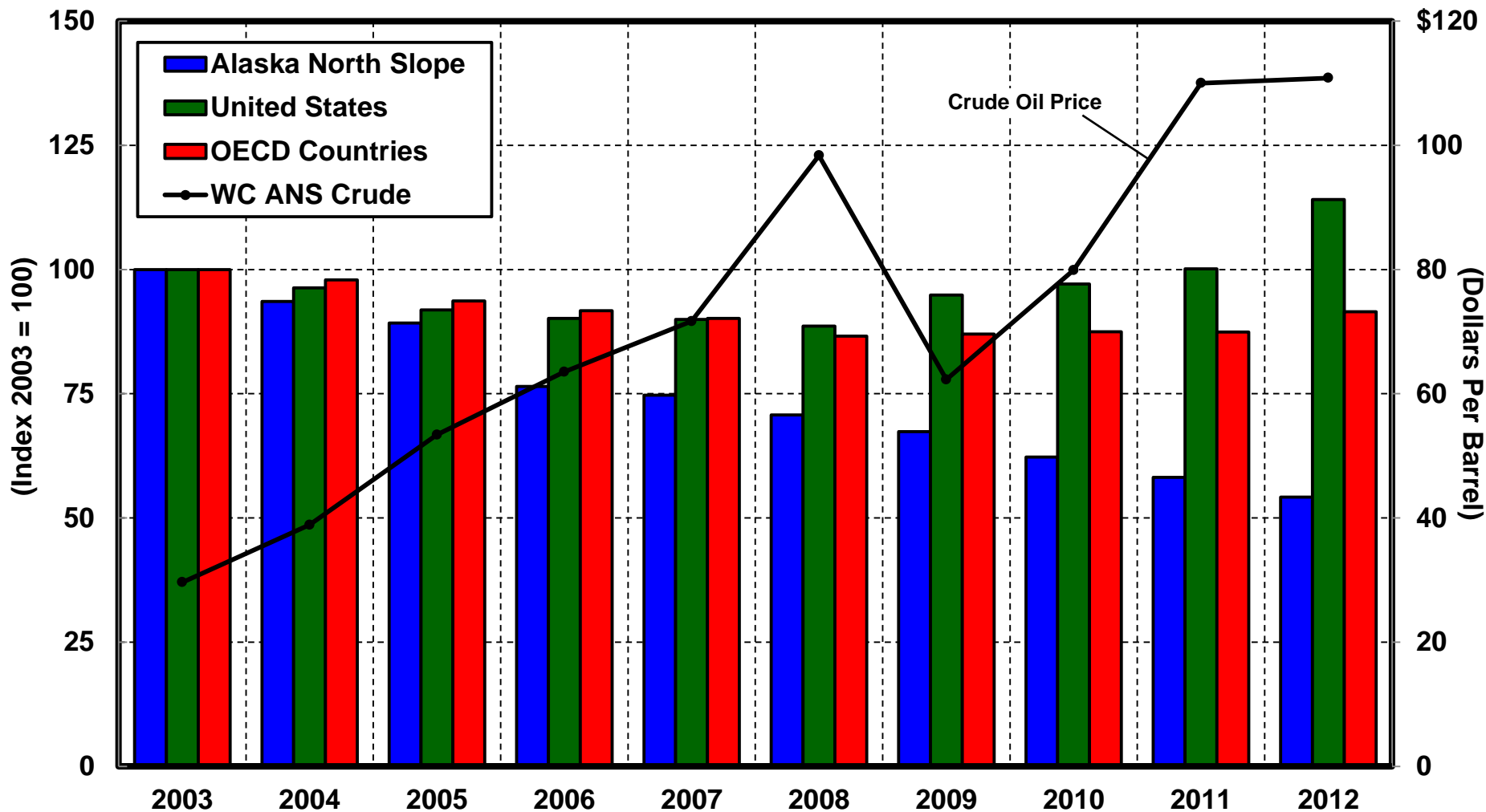
**Total In-Place Resource** **24 - 27 Billion Bbls**  
*(Hartz, et al., 2007; AOGCC)*

**Economically Recoverable** **3.6 - 5.6 Billion Bbls**  
*(Assuming 15% Average Recovery)*

# Crude Oil Production

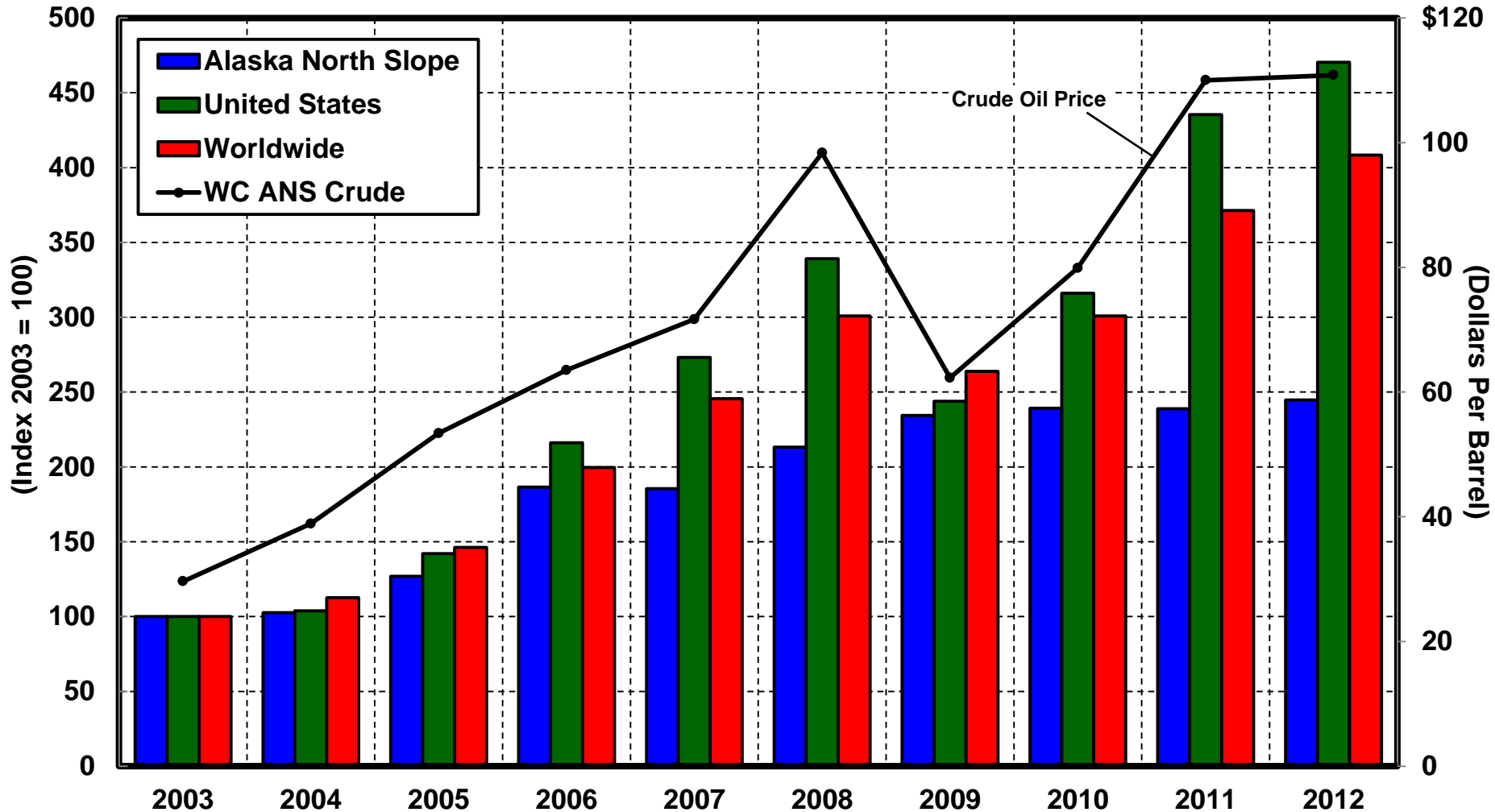
## Alaska North Slope vs. United States and OECD Countries

### 2003 - 2012





# Estimated Capital Spending for Exploration and Development Alaska North Slope vs. United States and Worldwide Spending\* 2003 - 2012



\* North Slope based on tax return information; U.S. based on top 50 public companies; worldwide based on top 75 public companies

# Fundamentals of Tax Calculation, Potential Development, and State Exposure Under ACES

# How ACES Works

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- **Tax is Calculated on “Net Value” of Taxable Production**
    - Taxable Production is Total Production Less Royalties
    - Net Value is Gross Wellhead Value Less Cost of Production
    - Costs of Production are Capital Expenses, Operating Expenses and Property Tax Payments
  - **Base Tax Rate of 25%**
  - **Progressive Tax Rate of 0.4% Per \$1/Barrel (4% Per \$10/Barrel) Increase Over \$30/Barrel Net Value and 0.1% Per \$1/Barrel (1% Per \$10/Barrel) Over \$92.50, Capped at 50% Total**
  - **Example: Taxable Value = \$100/Barrel “Production Tax Value”**
    - Base Rate = 25%
    - Progressive Rate =  $(\$92.50 - \$30) \times 0.4\% + (\$100 - \$92.50) \times 0.1\% = 25.75\%$
    - Total Rate =  $25\% + 25.75\% = 50.75\%$
  - **Credit of 20% for Capital Expenditures (Taken Over 2 Years)**
  - **Small Producer Credit of \$12 Million Per Year (Phased Out for Production over 50 MBD)**
  - **State Purchases Credits and Net Operating Losses (NOLs) From Companies Without Tax Obligation**
    - Equals 45% of Capital Expenditures and 25% of Operating Expenditures
-

# Calculation of ACES Taxes: Varying Prices

Annual Taxable Production (Bbls)	50,000,000	50,000,000	50,000,000	50,000,000	50,000,000
West Coast ANS Price (\$/Bbl)	\$60.00	\$80.00	\$100.00	\$120.00	\$140.00
Transportation Costs (\$/Bbl)	- 10.00	10.00	10.00	10.00	10.00
Wellhead Value (\$/Bbl)	= \$50.00	\$70.00	\$90.00	\$110.00	\$130.00
Operating Costs (\$/Bbl)	- \$15.00	\$15.00	\$15.00	\$15.00	\$15.00
Capital Expenditures (\$/Bbl)	- 15.00	15.00	15.00	15.00	15.00
Taxable Value (\$/Bbl)	= \$20.00	\$40.00	\$60.00	\$80.00	\$100.00
ACES Base Tax Rate (%)	25.0%	25.0%	25.0%	25.0%	25.0%
ACES Progressive Tax (%)	+ 0.0%	4.0%	12.0%	20.0%	25.8%
Total Tax Rate (%)	= 25.0%	29.0%	37.0%	45.0%	50.8%
Total Wellhead Value (\$)	\$2,500,000,000	\$3,500,000,000	\$4,500,000,000	\$5,500,000,000	\$6,500,000,000
Operating Expenditures (\$)	- 750,000,000	750,000,000	750,000,000	750,000,000	750,000,000
Capital Expenditures (\$)	- 750,000,000	750,000,000	750,000,000	750,000,000	750,000,000
Production Tax Value (\$)	= \$1,000,000,000	\$2,000,000,000	\$3,000,000,000	\$4,000,000,000	\$5,000,000,000
Production Tax Before Credits (PTV x Total Tax Rate) (\$)	\$250,000,000	\$580,000,000	\$1,110,000,000	\$1,800,000,000	\$2,537,500,000
Capital Credits (20% x Capital Expenditures) (\$)	- 150,000,000	150,000,000	150,000,000	150,000,000	150,000,000
Production Tax After Credits (\$)	= \$100,000,000	\$430,000,000	\$960,000,000	\$1,650,000,000	\$2,387,500,000
Effective Production Tax Rate After Credits (%)	10.0%	21.5%	32.0%	41.3%	47.8%

# Calculation of ACES Tax: Varying Costs

## \$100 West Coast ANS Price

Annual Taxable Production (Bbls)		50,000,000	50,000,000	50,000,000
West Coast ANS Price (\$/Bbl)		\$100.00	\$100.00	\$100.00
Transportation Costs (\$/Bbl)	-	10.00	10.00	10.00
Wellhead Value (\$/Bbl)	=	\$90.00	\$90.00	\$90.00
Operating Costs (\$/Bbl)	-	\$10.00	\$20.00	\$30.00
Capital Expenditures (\$/Bbl)	-	10.00	15.00	20.00
Taxable Value (\$/Bbl)	=	\$70.00	\$55.00	\$40.00
ACES Base Tax Rate (%)		25.0%	25.0%	25.0%
ACES Progressive Tax (%)	+	16.0%	10.0%	4.0%
Total Tax Rate (%)	=	41.0%	35.0%	29.0%
Total Wellhead Value (\$)		\$4,500,000,000	\$4,500,000,000	\$4,500,000,000
Operating Expenditures (\$)	-	500,000,000	1,000,000,000	1,500,000,000
Capital Expenditures (\$)	-	500,000,000	750,000,000	1,000,000,000
Production Tax Value (\$)	=	\$3,500,000,000	\$2,750,000,000	\$2,000,000,000
Production Tax Before Credits (PTV x Total Tax Rate) (\$)		\$1,435,000,000	\$962,500,000	\$580,000,000
Capital Credits (20% x Capital Expenditures) (\$)	-	100,000,000	150,000,000	200,000,000
Production Tax After Credits (\$)	=	\$1,335,000,000	\$812,500,000	\$380,000,000
Effective Tax Rate After Credits (%)		38.1%	29.5%	19.0%

# Calculation of ACES Tax: Varying Costs

## \$80 West Coast ANS Price

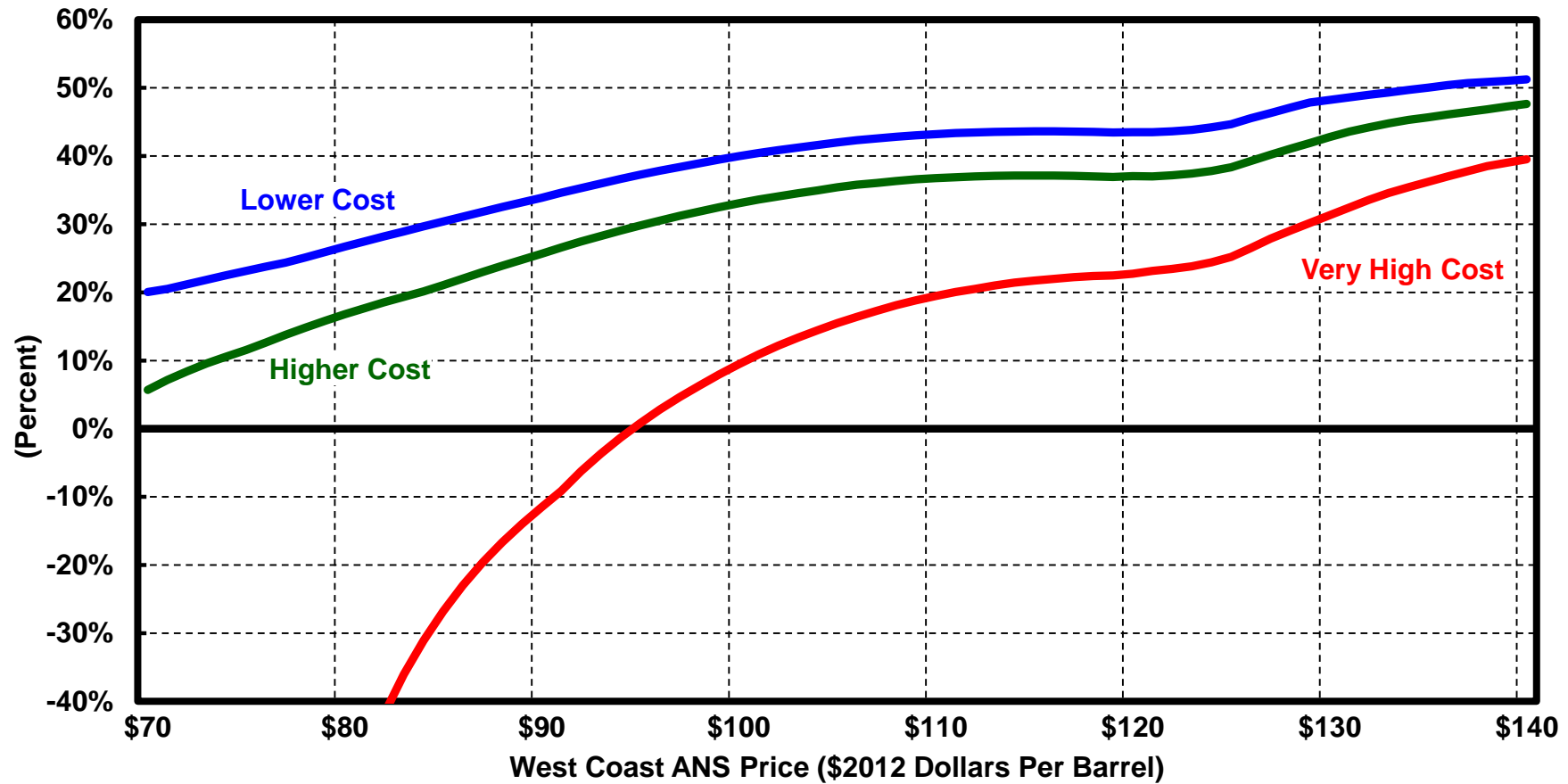
Annual Taxable Production (Bbls)		50,000,000	50,000,000	50,000,000
West Coast ANS Price (\$/Bbl)		\$80.00	\$80.00	\$80.00
Transportation Costs (\$/Bbl)	-	10.00	10.00	10.00
Wellhead Value (\$/Bbl)	=	\$70.00	\$70.00	\$70.00
Operating Costs (\$/Bbl)	-	\$10.00	\$20.00	\$30.00
Capital Expenditures (\$/Bbl)	-	10.00	15.00	20.00
Taxable Value (\$/Bbl)	=	\$50.00	\$35.00	\$20.00
ACES Base Tax Rate (%)		25.0%	25.0%	25.0%
ACES Progressive Tax (%)	+	8.0%	2.0%	0.0%
Total Tax Rate (%)	=	33.0%	27.0%	25.0%
Total Wellhead Value (\$)		\$3,500,000,000	\$3,500,000,000	\$3,500,000,000
Operating Expenditures (\$)	-	500,000,000	1,000,000,000	1,500,000,000
Capital Expenditures (\$)	-	500,000,000	750,000,000	1,000,000,000
Production Tax Value (\$)	=	\$2,500,000,000	\$1,750,000,000	\$1,000,000,000
Production Tax Before Credits (PTV x Total Tax Rate) (\$)		\$825,000,000	\$472,500,000	\$250,000,000
Capital Credits (20% x Capital Expenditures) (\$)	-	100,000,000	150,000,000	200,000,000
Production Tax After Credits (\$)	=	\$725,000,000	\$322,500,000	\$50,000,000
Effective Tax Rate After Credits (%)		29.0%	18.4%	5.0%

# Calculation of ACES Tax: Additional Capital Spending

Annual Taxable Production (Bbls)		50,000,000	50,000,000	50,000,000	50,000,000	50,000,000
Initial Operational Expenditure (\$)		\$750,000,000	\$750,000,000	\$750,000,000	\$750,000,000	\$750,000,000
Initial Capital Expenditure (\$)	+	750,000,000	750,000,000	750,000,000	750,000,000	750,000,000
Additional Capital Expenditure (\$)	+	<b>250,000,000</b>	<b>250,000,000</b>	<b>250,000,000</b>	<b>250,000,000</b>	<b>250,000,000</b>
Total Lease Expenditure (\$)	=	\$1,750,000,000	\$1,750,000,000	\$1,750,000,000	\$1,750,000,000	\$1,750,000,000
WC ANS Price (\$/Bbl)		\$60.00	\$80.00	\$100.00	\$120.00	\$140.00
Tax Value Prior To Additional Expenditure (\$/Bbl)		\$20.00	\$40.00	\$60.00	\$80.00	\$100.00
Additional Capital Spending Per-Barrel of Existing Production (\$/Bbl) -		5.00	5.00	5.00	5.00	5.00
Tax Value After Additional Expenditure (\$/Bbl)	=	\$15.00	\$35.00	\$55.00	\$75.00	\$95.00
<b>Taxes Before Additional Expenditure</b>						
Tax Rate (%)		25.0%	29.0%	37.0%	45.0%	50.8%
Production Tax Before Credits (\$)		\$250,000,000	\$580,000,000	\$1,110,000,000	\$1,800,000,000	\$2,537,500,000
Capital Credits (20% x Capital Expenditures) (\$)	-	150,000,000	150,000,000	150,000,000	150,000,000	150,000,000
Production Tax After Credits (\$)	=	\$100,000,000	\$430,000,000	\$960,000,000	\$1,650,000,000	\$2,387,500,000
<b>Taxes After Additional Expenditure</b>						
Tax Rate (%)		25.0%	27.0%	35.0%	43.0%	50.3%
Production Tax Before Credits (\$)		\$187,500,000	\$472,500,000	\$962,500,000	\$1,612,500,000	\$2,386,875,000
Capital Credits (20% x Capital Expenditures) (\$)	-	200,000,000	200,000,000	200,000,000	200,000,000	200,000,000
Production Tax After Credits (\$)	=	\$0	\$272,500,000	\$762,500,000	\$1,412,500,000	\$2,186,875,000
<b>Reduction in Taxes From Additional Expenditure</b>						
Before Credits (\$)		\$62,500,000	\$107,500,000	\$147,500,000	\$187,500,000	\$150,625,000
Additional Credits (\$)	+	50,000,000	50,000,000	50,000,000	50,000,000	50,000,000
Total Reduction in Taxes After Credits (\$)	=	<b>\$112,500,000</b>	<b>\$157,500,000</b>	<b>\$197,500,000</b>	<b>\$237,500,000</b>	<b>\$200,625,000</b>
Reduction in Tax as % of Expenditure		45%	63%	79%	95%	80%
Due to Change in Taxes (Buy Down Effect)		25%	43%	59%	75%	60%
Due to Additional Credits		20%	20%	20%	20%	20%

# Effective Tax Rates For New Development Under ACES

## Additional Tax as % of Production Tax Value: Incumbent Producer



**Lower Cost:** \$16 Per Barrel Development Capex; \$14 Per Barrel Opex; 16.67% Royalty Rate; 50 MMBO New Development by Existing Owner With Initial Ongoing Production of Approximately 100 MBD and Costs Consistent with Prudhoe Bay/Kuparuk River Units

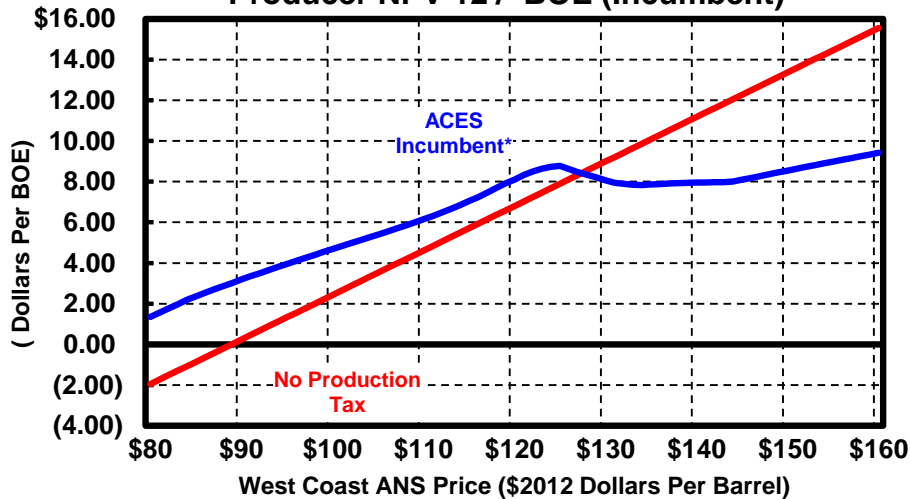
**Higher Cost:** \$25 Per Barrel Development Capex; \$14 Per Barrel Opex; 16.67% Royalty Rate; 50 MMBO New Development by Existing Owner With Initial Ongoing Production of Approximately 100 MBD and Costs Consistent with Prudhoe Bay/Kuparuk River Units

**Very High Cost:** \$34 Per Barrel Development Capex; \$21 Per Barrel Opex; 16.67% Royalty Rate; 50 MMBO New Development by Existing Owner With Initial Ongoing Production of Approximately 100 MBD and Costs Consistent with Prudhoe Bay/Kuparuk River Units

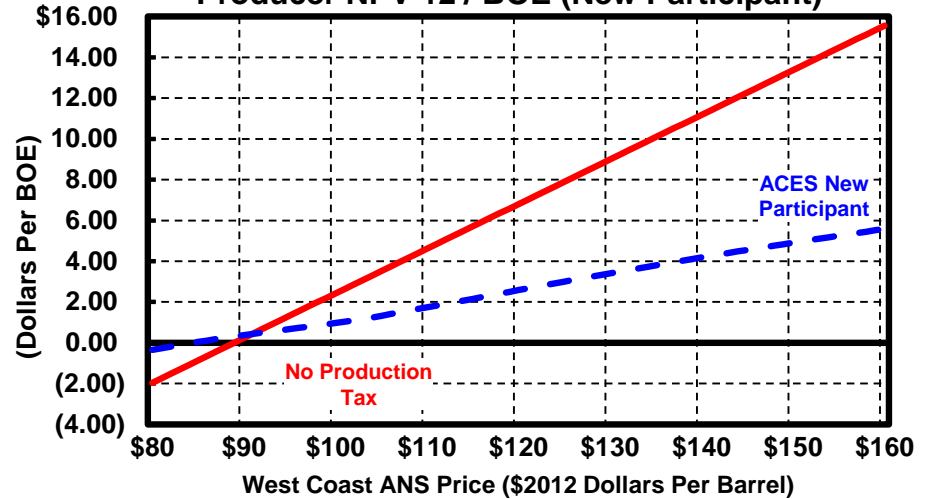


# The Economics of Higher Cost Oil Development

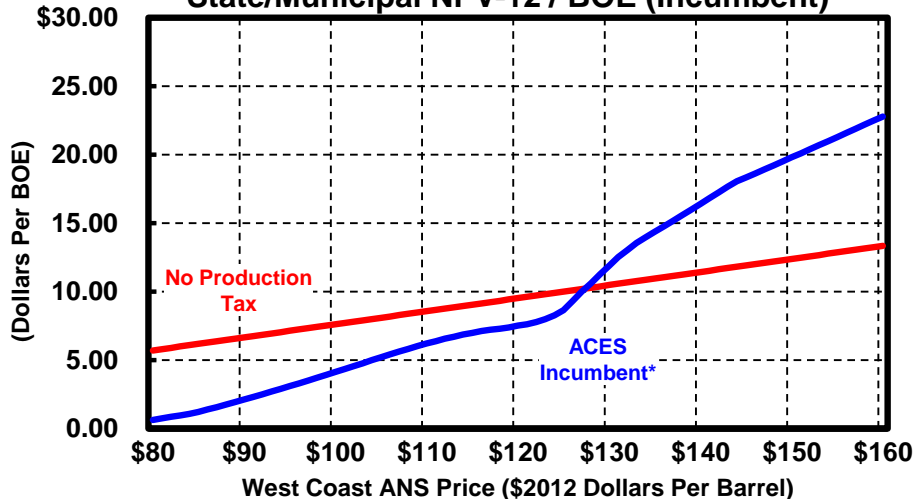
**Producer NPV-12 / BOE (Incumbent)**



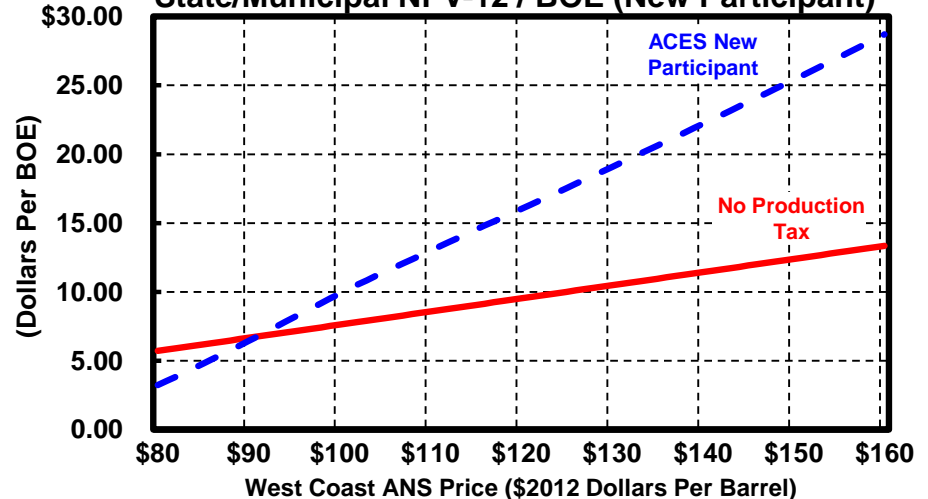
**Producer NPV-12 / BOE (New Participant)**



**State/Municipal NPV-12 / BOE (Incumbent)**



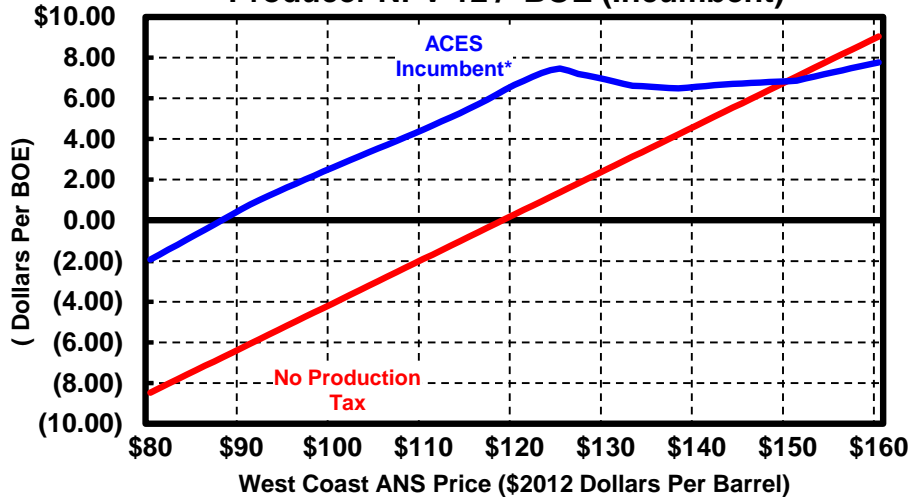
**State/Municipal NPV-12 / BOE (New Participant)**



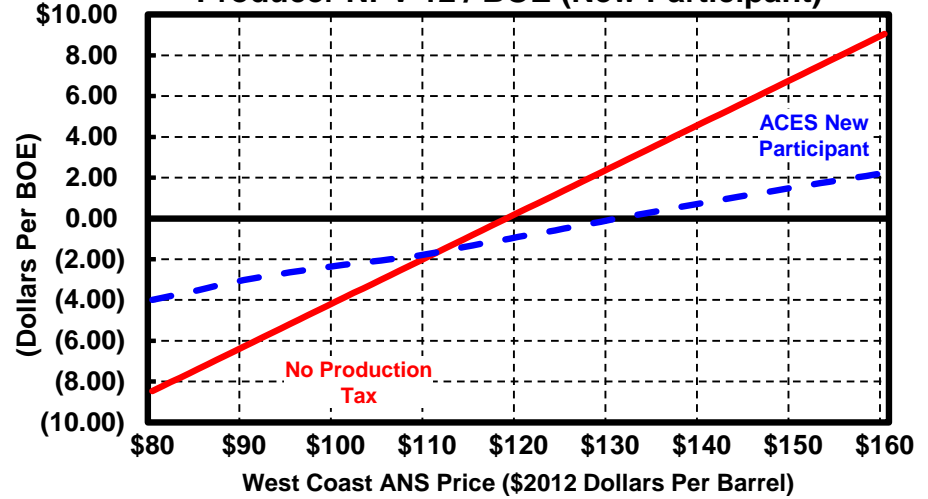
\* Analysis of incumbent production includes "buy-down" impact for reduced taxes on existing production.  
Higher Cost: \$25 Per Barrel Development Capex and \$14 Per Barrel Opex

# The Economics of Very High Cost Oil Development

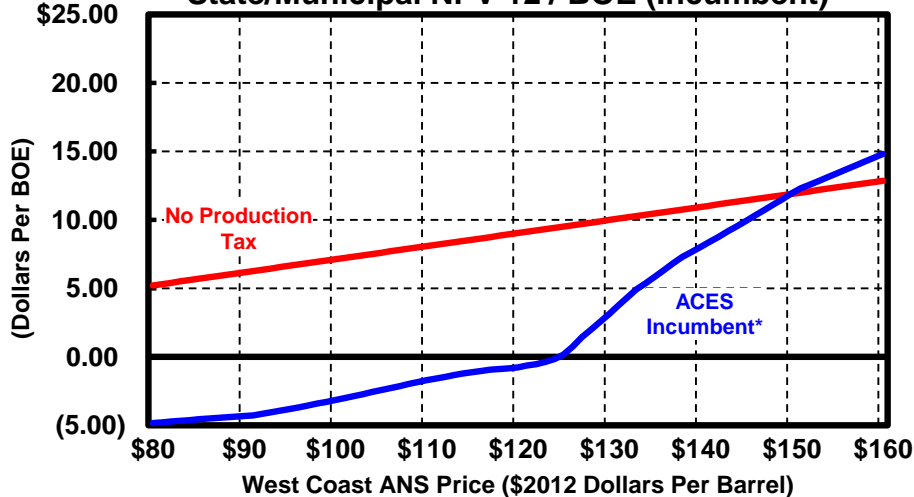
**Producer NPV-12 / BOE (Incumbent)**



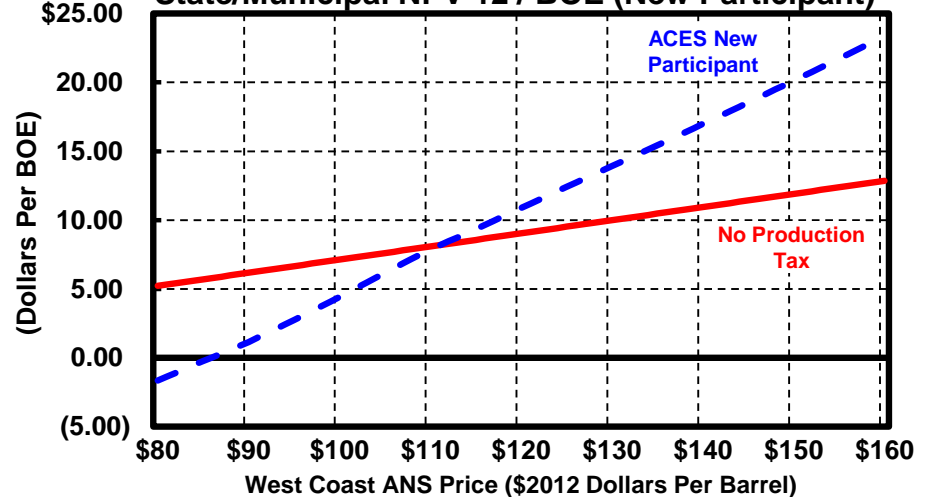
**Producer NPV-12 / BOE (New Participant)**



**State/Municipal NPV-12 / BOE (Incumbent)**

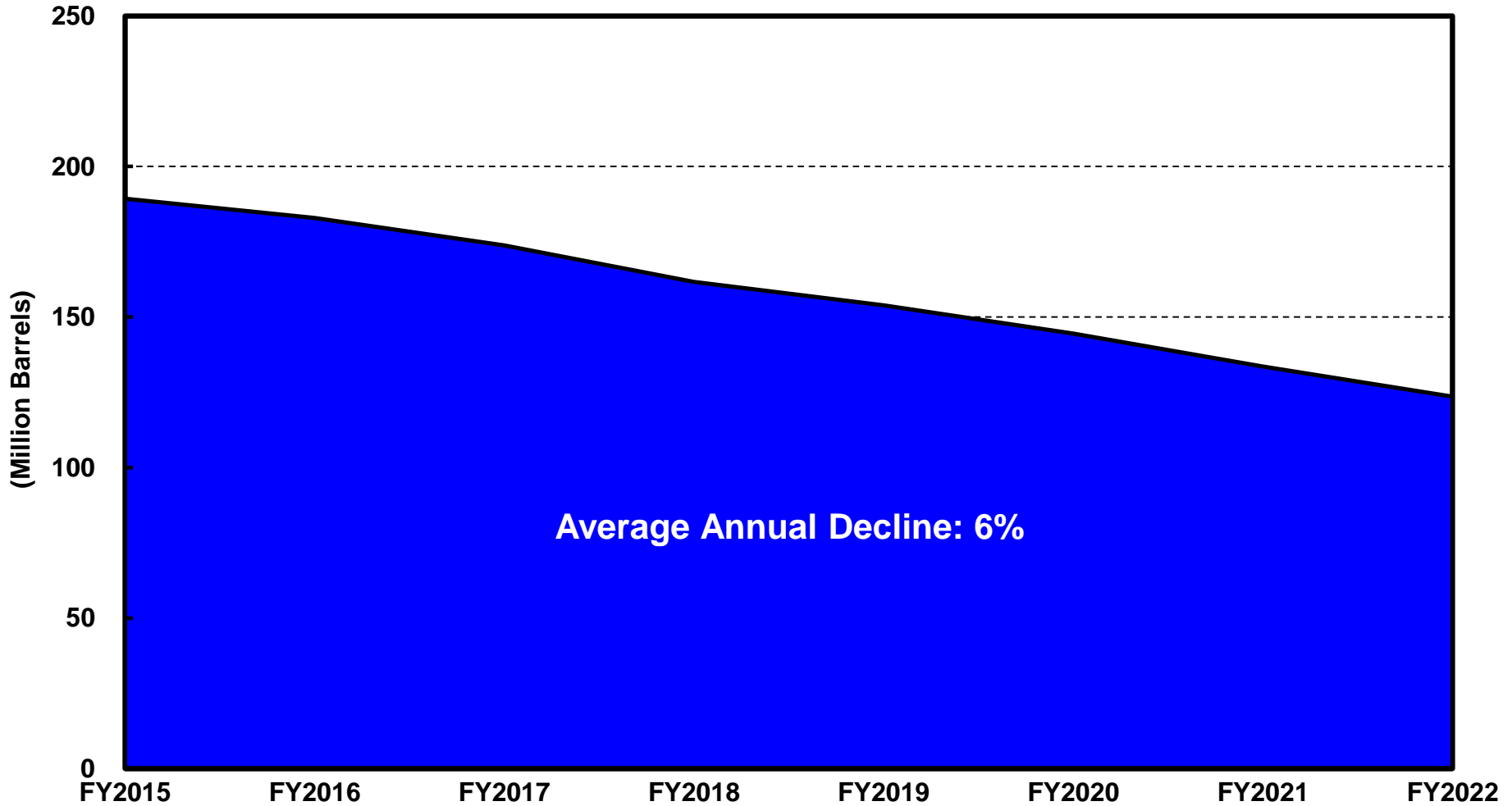


**State/Municipal NPV-12 / BOE (New Participant)**

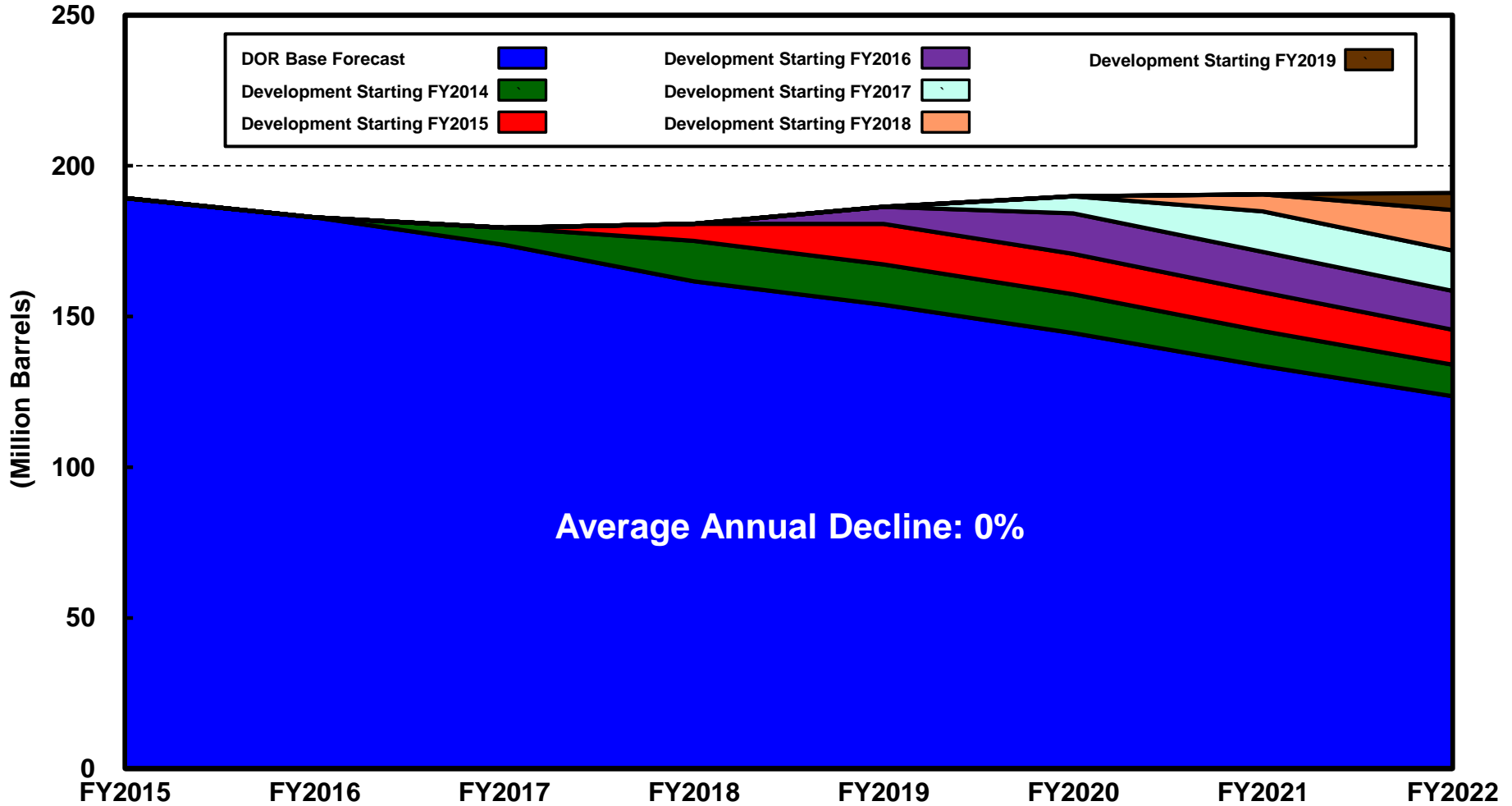


\* Analysis of incumbent production includes "buy-down" impact for reduced taxes on existing production.  
Very High Cost: \$34 Per Barrel Development Capex and \$21 Per Barrel Opex

# DOR Forecast Levels of Production FY2015 - FY2022



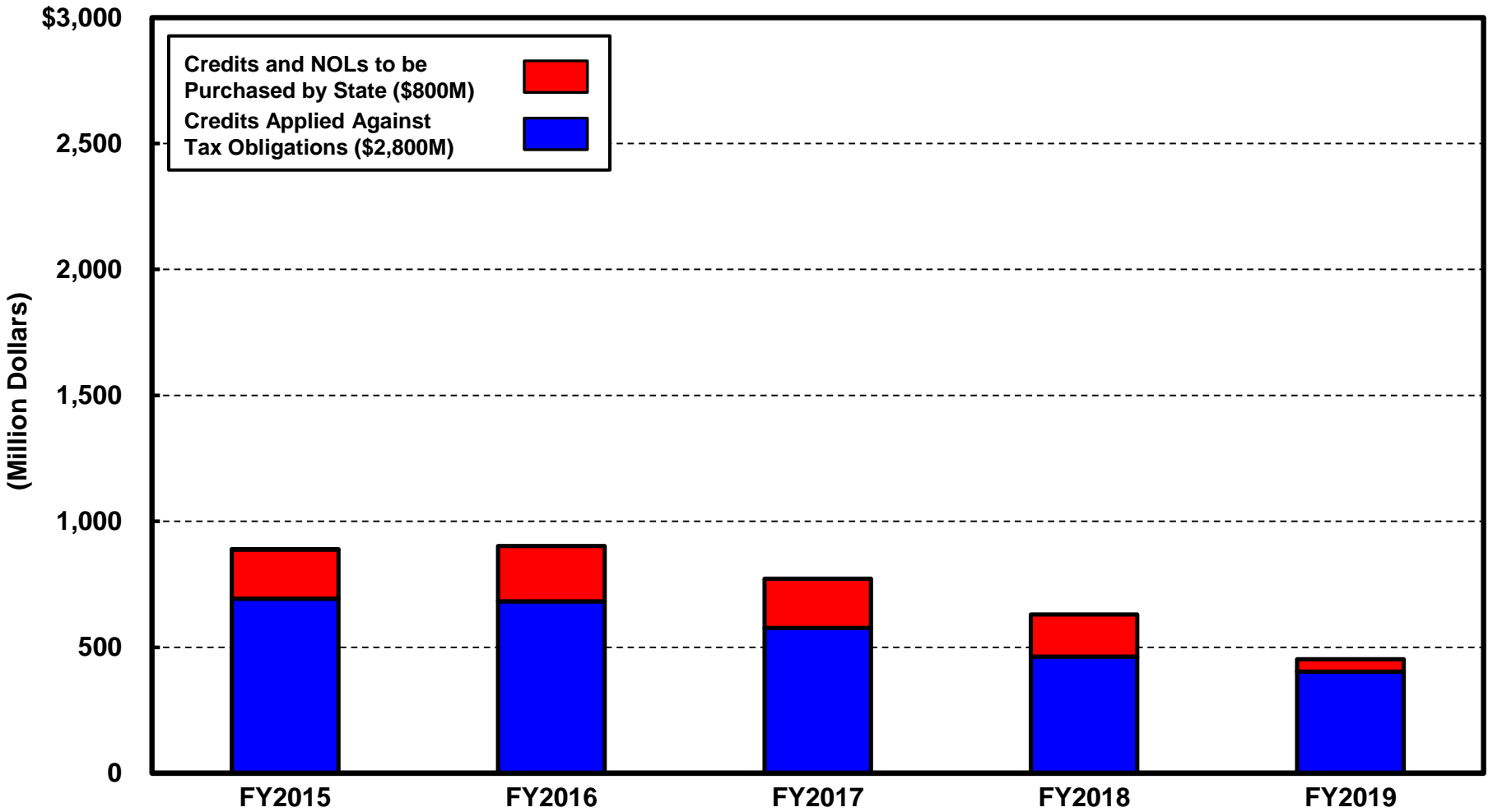
# Production With Development of 150 MMB of Reserves Annually FY2015 - FY2022



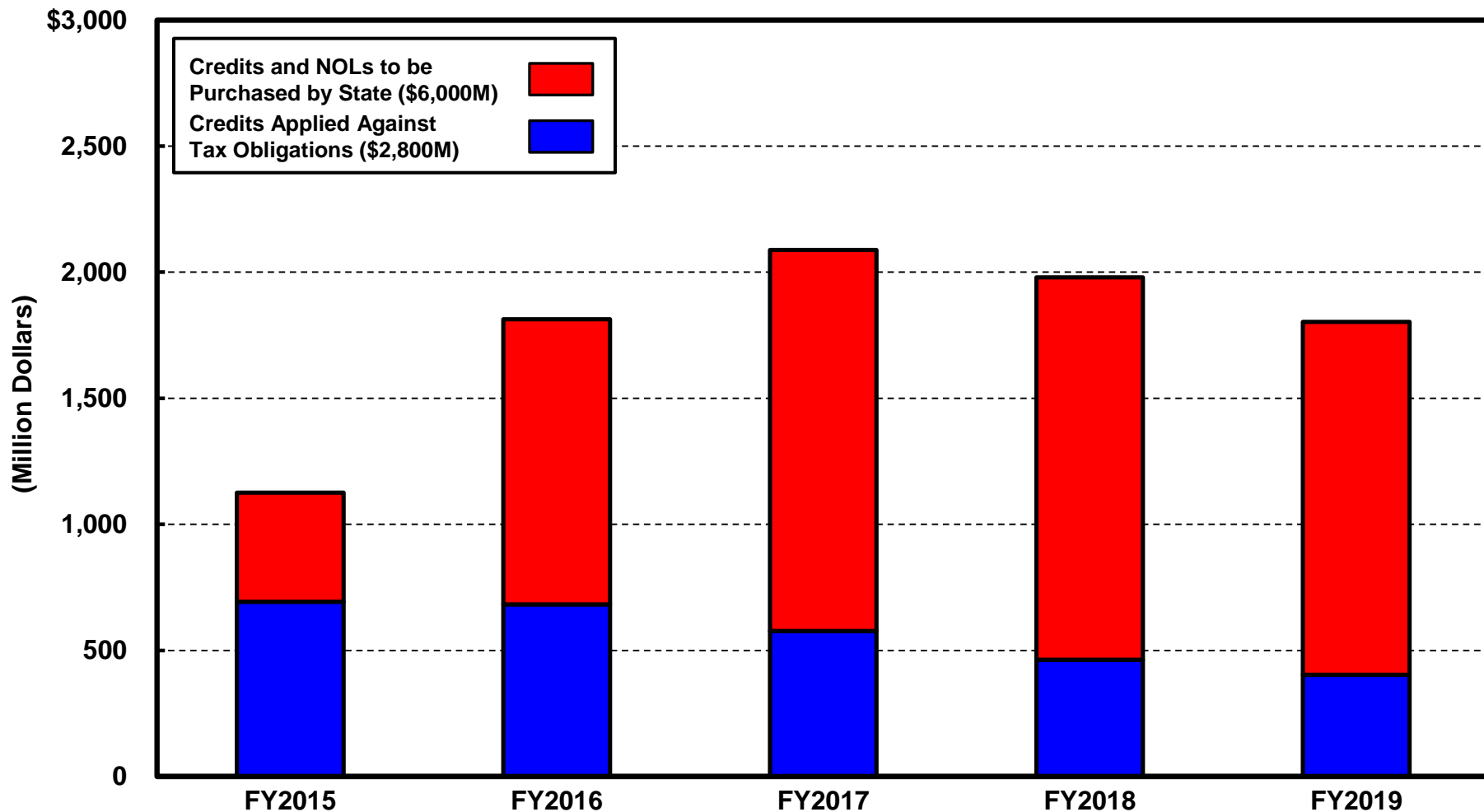
Note: Assumes 150 MMB of new production begins development each year starting in FY2014.

# Forecast Levels of Capital Credits and NOLs

## FY2015 - FY2019

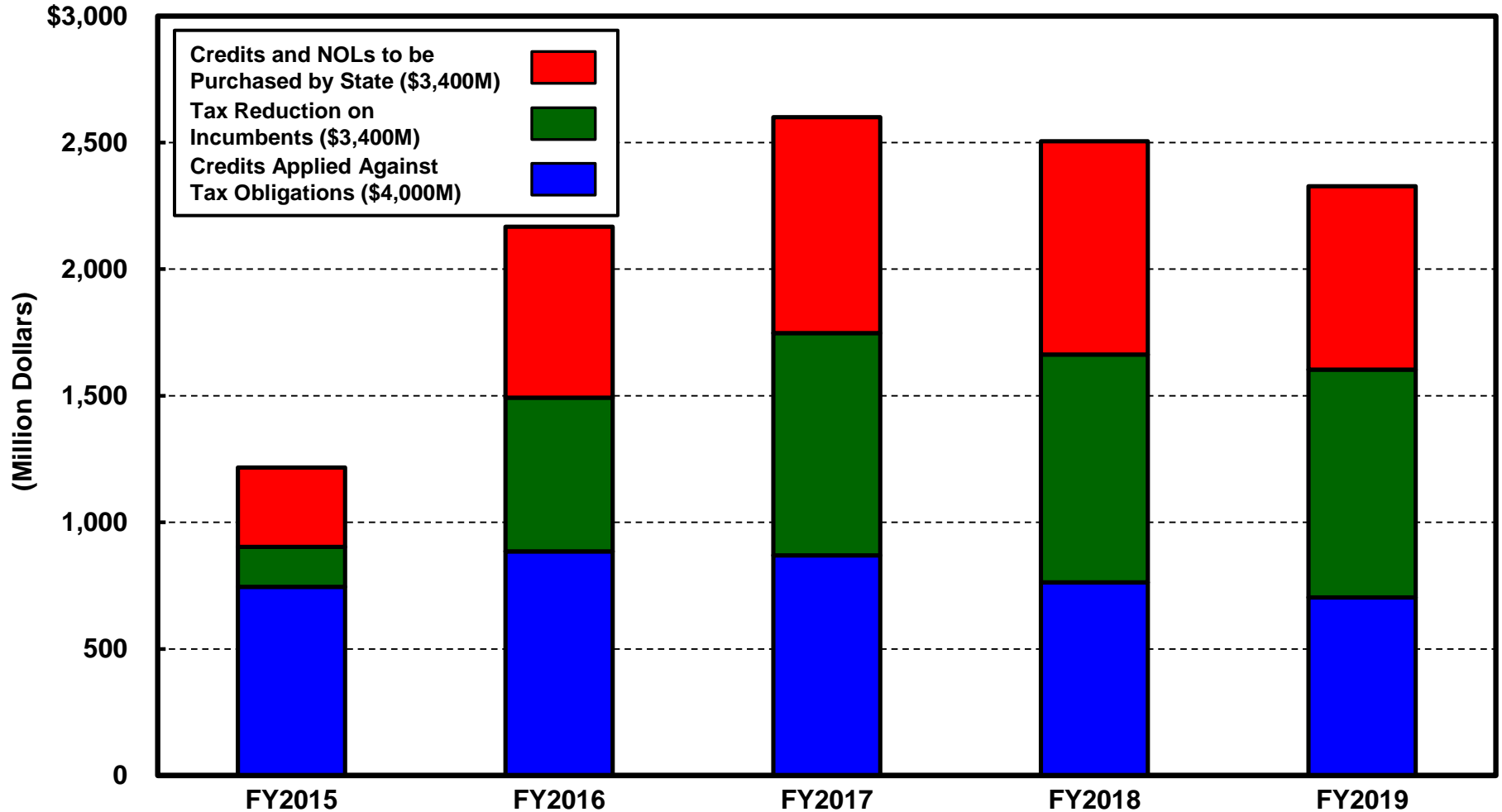


# Capital Credits and NOLs Assuming Development of Additional 150 MMB of Oil Per Year Over Forecast By New Participant



Note: Assumes 150 MMB of new production begins development each year by new participants starting in FY2014. Total exploration and development costs assumed to be \$20/bbl.

# Capital Credits and NOLs Assuming Development of Additional 150 MMB of Oil Per Year Over Forecast 50% by New Participant and 50% by Incumbent

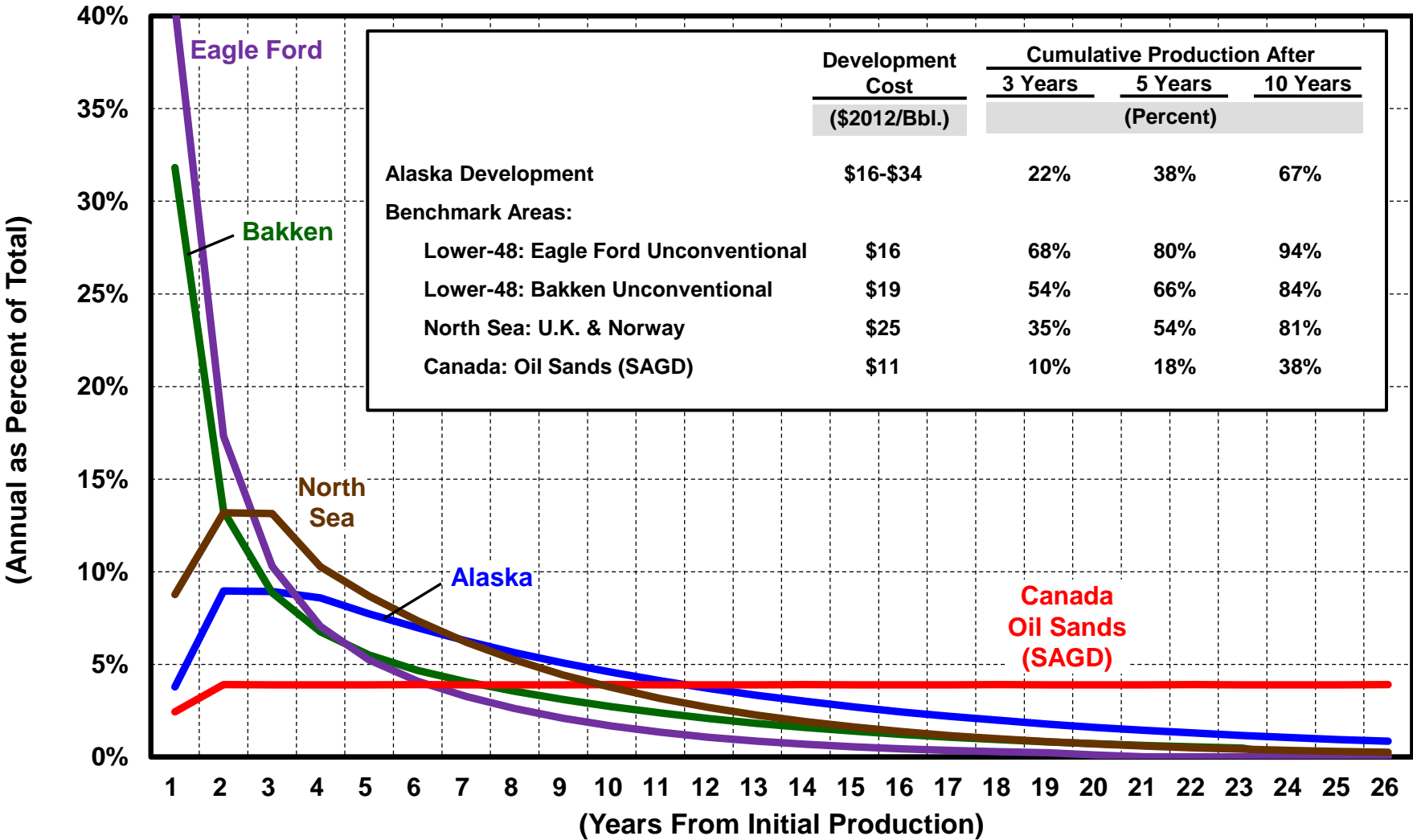


Note: Assumes 150 MMB of new production begins development each year by (50% new participants, 50% incumbents) starting in FY2014.  
 Total exploration and development costs assumed to be \$20/bbl.  
 For the incumbent, 20% credit and 60% of capital is shielded in the form of reduced taxes on existing production.

# **Analysis of Potential Investments In Alaska Under ACES Versus Other Areas**



# Summary of Production Profiles Examined For Alaska and Benchmark Developments



# Summary of Investment Measures (New Participant)

Real \$2012 West Coast ANS Price	50 MMBO Alaska			Unconventional Lower-48		Canada Oil Sands	Norway	United Kingdom	
	Lower Cost	Higher Cost	Very High Cost	Eagle Ford	Bakken	SAGD		Pre-1993 w/ Brownfield Allowance*	Post-1993 w/ Brownfield Allowance*
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<b>Producer NPV-12 / BOE (Dollars Per BOE)</b>									
\$80	\$2.55	(\$0.35)	(\$4.00)	\$3.61	\$0.67	(\$0.93)	\$0.24	\$4.81	\$4.62
\$100	\$3.85	\$0.97	(\$2.33)	\$6.75	\$4.29	\$0.46	\$2.34	\$7.09	\$8.25
\$120	\$5.48	\$2.58	(\$0.91)	\$11.17	\$9.16	\$2.01	\$4.44	\$9.09	\$11.88
<b>Profitability Index-12</b>									
\$80	1.19	0.98	0.86	1.25	1.04	0.88	1.01	1.22	1.21
\$100	1.29	1.05	0.92	1.47	1.28	1.06	1.14	1.33	1.38
\$120	1.41	1.12	0.97	1.78	1.60	1.26	1.27	1.42	1.55
<b>IRR (Percent)</b>									
\$80	19.7%	11.3%	5.3%	29.9%	13.6%	9.7%	12.4%	34.5%	24.7%
\$100	23.4%	14.0%	8.2%	46.3%	22.7%	13.1%	16.0%	45.2%	32.9%
\$120	27.6%	17.1%	10.6%	73.6%	37.0%	16.3%	19.3%	53.5%	40.2%
<b>5-Year (2017-2021) Cash Margins (Dollars Per BOE)</b>									
\$80	\$25.84	\$28.03	\$28.73	\$23.39	\$28.39	\$26.07	\$34.51	\$22.94	\$29.35
\$100	\$28.84	\$31.03	\$32.48	\$29.99	\$36.48	\$29.14	\$39.42	\$28.85	\$37.82
\$120	\$33.13	\$35.32	\$36.02	\$36.87	\$44.91	\$33.37	\$44.32	\$31.29	\$46.30
<b>Government Take (Percent)</b>									
\$80	70.8%	71.6%	72.4%	71.7%	77.1%	63.4%	67.8%	61.0%	52.0%
\$100	75.8%	76.9%	77.2%	67.9%	72.1%	63.5%	71.7%	68.6%	55.8%
\$120	77.2%	78.1%	79.5%	65.1%	68.7%	63.0%	73.4%	72.0%	57.5%
<b>State/Municipal NPV-12/BOE (Dollars Per BOE)</b>									
\$80	\$6.67	\$3.24	(\$1.66)	-	-	-	-	-	-
\$100	\$13.32	\$9.86	\$4.42	-	-	-	-	-	-
\$120	\$19.46	\$16.02	\$10.88	-	-	-	-	-	-

\* Brownfield Allowance applied to 100 MMBOE development.

Lower Cost: \$16 Per Barrel Development Capex and \$14 Per Barrel Opex; Higher Cost: \$25 Per Barrel Development Capex and \$14 Per Barrel Opex; Very High Cost: \$34 Per Barrel Development Capex and \$21 Per Barrel Opex

# Summary of Investment Measures (Incumbent Participant)

Real \$2012 West Coast ANS Price	50 MMBO Alaska			Unconventional Lower-48		Canada	Norway	United Kingdom	
	Lower	Higher	Very High	Eagle Ford	Bakken	Oil Sands		Pre-1993	Post-1993
	Cost	Cost	Cost			SAGD		w/ Brownfield	w/ Brownfield
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<b>Producer NPV-12 / BOE (Dollars Per BOE)</b>									
\$80	\$3.71	\$1.34	(\$1.93)	\$3.61	\$0.67	(\$0.93)	\$0.24	\$4.81	\$4.62
\$100	\$6.14	\$4.68	\$2.58	\$6.75	\$4.29	\$0.46	\$2.34	\$7.09	\$8.25
\$120	\$8.82	\$8.10	\$6.66	\$11.17	\$9.16	\$2.01	\$4.44	\$9.09	\$11.88
<b>Profitability Index-12</b>									
\$80	1.28	1.06	0.93	1.25	1.04	0.88	1.01	1.22	1.21
\$100	1.46	1.23	1.09	1.47	1.28	1.06	1.14	1.33	1.38
\$120	1.67	1.39	1.24	1.78	1.60	1.26	1.27	1.42	1.55
<b>IRR (Percent)</b>									
\$80	26.2%	15.4%	8.1%	29.9%	13.6%	9.7%	12.4%	34.5%	24.7%
\$100	41.1%	27.2%	18.5%	46.3%	22.7%	13.1%	16.0%	45.2%	32.9%
\$120	65.3%	46.0%	33.8%	73.6%	37.0%	16.3%	19.3%	53.5%	40.2%
<b>5-Year (2017-2021) Cash Margins (Dollars Per BOE)</b>									
\$80	\$24.26	\$26.45	\$26.79	\$23.39	\$28.39	\$26.07	\$34.51	\$22.94	\$29.35
\$100	\$27.22	\$29.41	\$30.52	\$29.99	\$36.48	\$29.14	\$39.42	\$28.85	\$37.82
\$120	\$31.18	\$33.37	\$33.98	\$36.87	\$44.91	\$33.37	\$44.32	\$31.29	\$46.30
<b>Government Take (Percent)</b>									
\$80	68.9%	67.8%	63.8%	71.7%	77.1%	63.4%	67.8%	61.0%	52.0%
\$100	73.0%	71.2%	66.7%	67.9%	72.1%	63.5%	71.7%	68.6%	55.8%
\$120	73.8%	71.6%	68.1%	65.1%	68.7%	63.0%	73.4%	72.0%	57.5%
<b>State/Municipal NPV-12/BOE (Dollars Per BOE)</b>									
\$80	\$4.88	\$0.64	(\$4.84)	-	-	-	-	-	-
\$100	\$9.79	\$4.15	(\$3.14)	-	-	-	-	-	-
\$120	\$14.31	\$7.53	(\$0.76)	-	-	-	-	-	-

Note: Analysis of incumbent production includes "buy-down" impact for reduced taxes on existing production.

\* Brownfield Allowance applied to 100 MMBOE development.

Lower Cost: \$16 Per Barrel Development Capex and \$14 Per Barrel Opex; Higher Cost: \$25 Per Barrel Development Capex and \$14 Per Barrel Opex; Very High Cost: \$34 Per Barrel Development Capex and \$21 Per Barrel Opex

# **The Administration's Proposed Changes SB21 / SRES CS SB21**

## Key Aspects of Administration's Proposal (SB21)

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- **Establishes 25% Flat Net Tax Rate; No Progressivity**
- **Eliminates Capital Credit and State Purchase of Losses**
- **Establishes 20% Gross Revenue Exclusion (GRE) to Incent Production of New Oil**
- **Losses May be Carried Forward and Applied Against Tax Obligation When Production Occurs**
- **Extends New Entrant Credits Through 2022**
- **No Change Outside of North Slope**

## Key Aspects of Administration's Proposal (cont'd)

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- **Provides Balance Between State and Producers**
  - **Reduction of Tax Rates at High Prices, Balanced with Elimination of Credits**
  - **State Continues to Receive Largest Percentage of Oil Production Revenues at Any Price**
- **Simplifies Tax System and Provides Clarity for Planning**
  - **Eliminates Question of Marginal Tax Rate / Take for Investment Planning**
  - **Eliminates Incentives for “Gold Plating” Caused by High Marginal Rates**
- **Maintains Alignment Between State and Producer Incentives**
  - **Net Tax Allows for Deduction of Costs Against Tax**
- **Provides Incentive for Development of New Resources Without Taxing State Treasury**
  - **GRE Provides Lower Effective Tax Rate for New Development**
  - **New Developers can Recover Costs of Development Once Production Begins**
  - **Does Not Require State to Fund Development Costs Through Potentially Expensive Credit Purchases**
- **Extremely Positive Message to Potential Investors**
  - **Will Encourage Broader Participation in Development of Alaska's North Slope**
  - **Economics of New Participants Closer to Incumbents'**

# Key Changes to SB21 From Senate Resources CS

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- **Base Tax Rate Increased from 25% to 35%**
- **\$5/Bbl Production Allowance (Credit)**
- **GRE Raised to 30%**
- **Allows Producers to Apply for GRE in Legacy Units for Targeted Development of New Oil**
- **Relaxes Current Restriction on Exploration Credits**

## Key Attributes of Senate Resources CS SB21

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- **Results in Slightly Progressive Government Take Overall Without Problems Associated with “Progressivity”**
- **Reduces Effective Tax Rate and Government Take at Low Prices, While Increasing Tax Rates and Government Take at Higher Prices**
- **Effect of Fixed \$/Bbl Allowance is to Provide Support at Low Prices Where Needed, Diminishing as Prices Rise**
- **Provides System in Competitive Range for Taxpayers/Investors**
- **Provides Simple, Straightforward and Understandable Tax Framework**
- **Allows DOR/DNR to Address Individual Circumstances as Needed**
- **Allows for Significant Investment on North Slope Without Taxing State Treasury**



# Illustration of Tax Calculation Under Senate Resources CS for SB21

Taxable Barrels (Bbls)	50,000,000	50,000,000	50,000,000	50,000,000	50,000,000	50,000,000
West Coast Price (\$/Bbl)	\$60.00	\$80.00	\$100.00	\$120.00	\$140.00	\$160.00
Transportation (\$/Bbl)	- 10.00	10.00	10.00	10.00	10.00	10.00
Gross Value (\$/Bbl)	= \$50.00	\$70.00	\$90.00	\$110.00	\$130.00	\$150.00
Lease Expenditures (\$/Bbl)	- 30.00	30.00	30.00	30.00	30.00	30.00
Per-Barrel Taxable Value (\$/Bbl)	= \$20.00	\$40.00	\$60.00	\$80.00	\$100.00	\$120.00
Total Production Tax Value (\$)	\$1,000,000,000	\$2,000,000,000	\$3,000,000,000	\$4,000,000,000	\$5,000,000,000	\$6,000,000,000
Production Tax Before Allowance @ 35%	\$350,000,000	\$700,000,000	\$1,050,000,000	\$1,400,000,000	\$1,750,000,000	\$2,100,000,000
Production Allowance @ \$5/Bbl	- 250,000,000	250,000,000	250,000,000	250,000,000	250,000,000	250,000,000
Production Tax After Allowance	= \$100,000,000	\$450,000,000	\$800,000,000	\$1,150,000,000	\$1,500,000,000	\$1,850,000,000
Nominal Tax Rate	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%
Reduction in Tax Rate From Allowance	25.0%	12.5%	8.3%	6.3%	5.0%	4.2%
Effective Tax Rate After Allowance	10.0%	22.5%	26.7%	28.8%	30.0%	30.8%
Allowance as % of Gross Value	10.0%	7.1%	5.6%	4.5%	3.8%	3.3%

# State Outlays Prior to Production Associated With Development of 50 MMBO by Non-Taxpayer Under ACES and SRES CS SB21

	<u>Lower Cost Field</u>	<u>Higher Cost Field</u>
Costs (\$M)		
Exploration	\$125	\$125
Development	+ 800	+ 1,250
Total	= \$925	= \$1,375
State Funding Prior to Production (\$M)		
ACES:		
QCE 20%	\$185	\$275
Purchased Losses 25%	+ 231	+ 344
Total	= \$416	= \$619
% of Costs	45%	45%
SRES CS SB21		
Exploration Credit 30%	\$38	\$38
% of Costs	4%	3%
Savings Under SRES CS SB21 (\$M)	\$379	\$581
% of Costs	41%	42%

Note: Assumes \$2.50/bbl exploration costs and \$16/bbl and \$25/bbl development costs for lower and higher cost field, respectively.

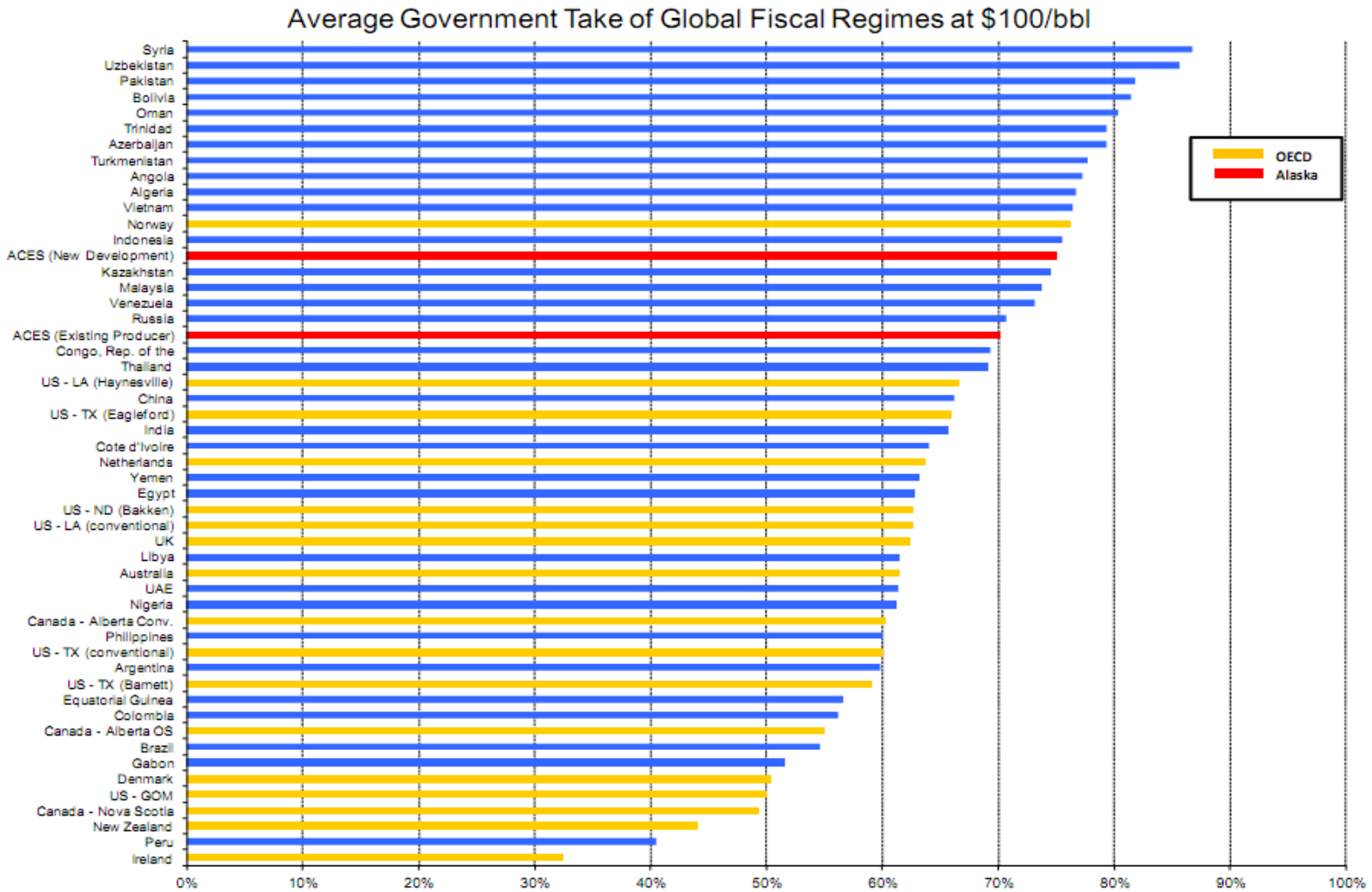
# Expected Annual State Outlays Necessary to Replace Current Production by Non-Taxpayer Under ACES and SRES CS SB21

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	<u>Lower Cost Field</u>	<u>Higher Cost Field</u>
Annual North Slope Production (MMBO)	150	150
Number of 50 MMBO Developments Required to Replace Annual Production	3	3
Exploration Costs (\$M)	\$375	\$375
Development Costs (\$M)	+ 2,400	+ 3,750
Total (\$M)	= \$2,775	= \$4,125
State Outlays Under ACES (\$M)	\$1,249	\$1,856
State Outlays Under SRES CS SB21 (\$M)	- 113	- 113
Savings Under SRES CS SB21 (\$M)	= \$1,136	= \$1,744

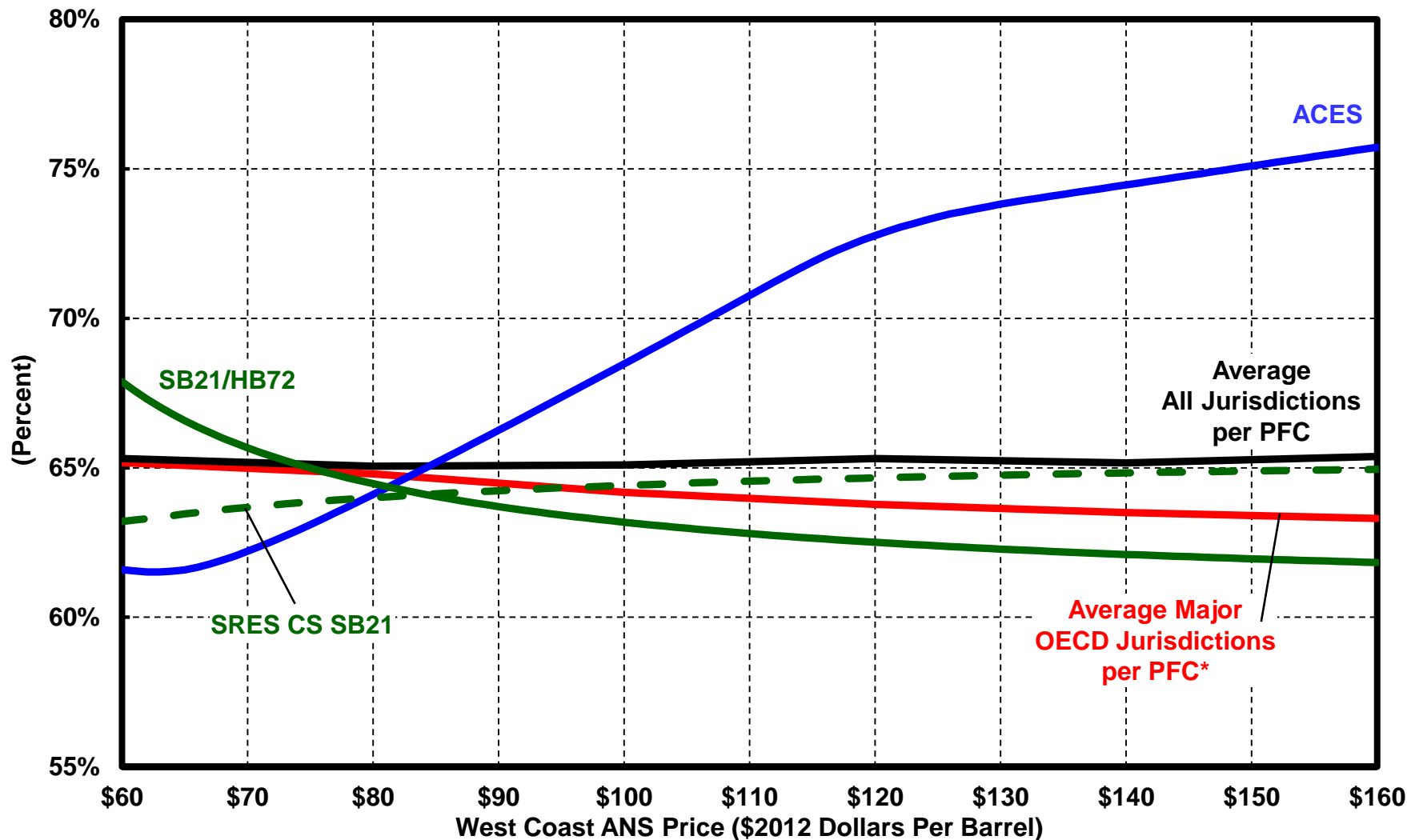
# Average Government Take at \$100 Per Barrel

## Other Jurisdictions



Source: PFC Energy.

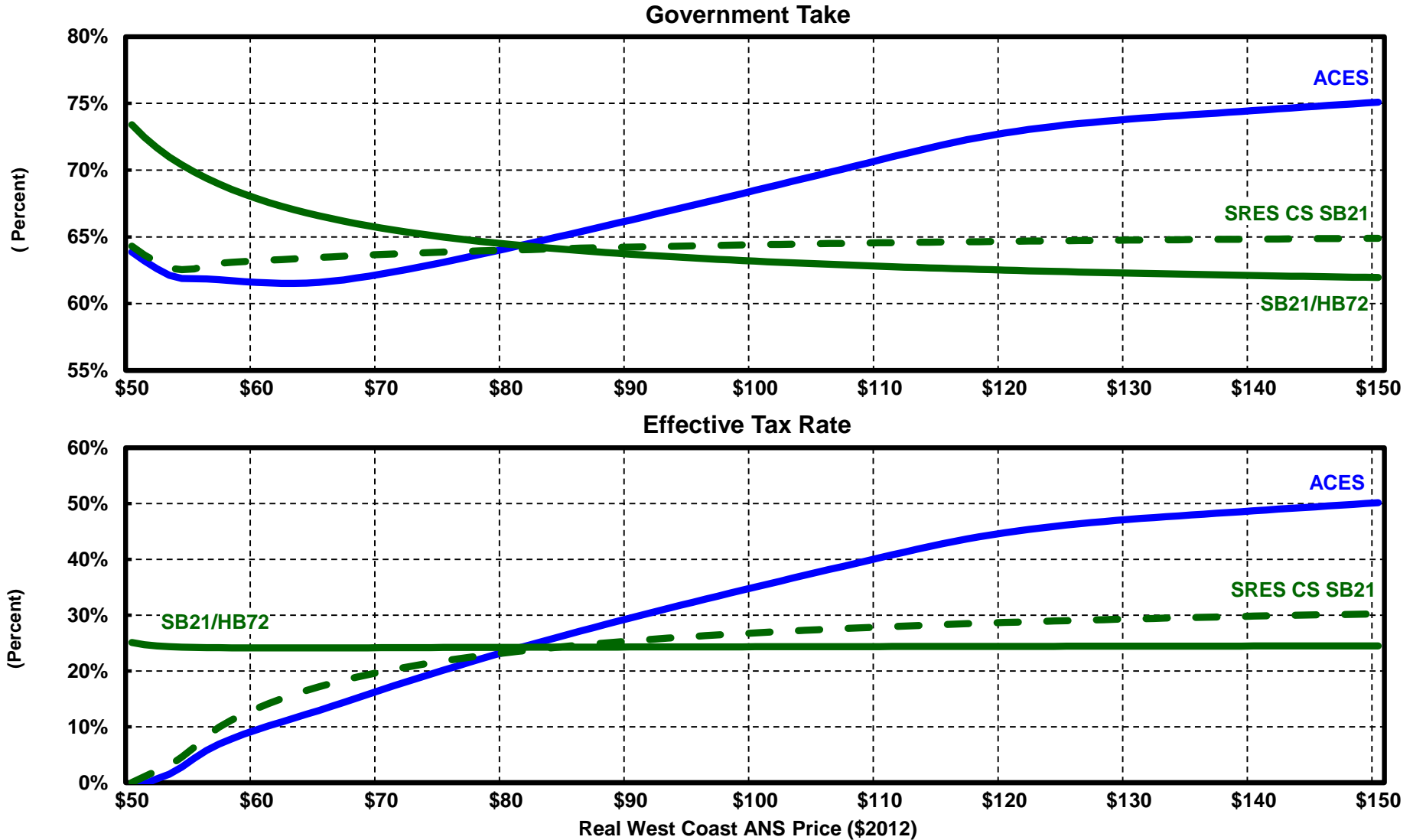
# Average Government Take ACES v. SB21/HB72 and SRES CS SB21 for All Existing Producers (FY2015-FY2019) and Other Jurisdictions



\* Australia, Canada (Alberta Conventional), Norway, United Kingdom and United States.

# Average Government Take and Tax Rate

## ACES v. SB21/HB72 and SRES CS SB21 for All Existing Producers (FY2015-FY2019)



# Summary of Investment Measures for New Participant Lower Cost Alaska Oil Development ACES and SRES CS SB21 v. Benchmark Areas



Real \$2012 West Coast ANS Price	Lower Cost Alaska			Unconventional Lower-48		Canada Oil Sands	Norway	United Kingdom	
	ACES	SRES CS SB21		Eagle Ford	Bakken	SAGD		Pre-1993 w/ Brownfield Allowance*	Post-1993 w/ Brownfield Allowance*
		Without GRE	With GRE						
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
<b>Producer NPV-12 / BOE (Dollars Per BOE)</b>									
\$80	\$2.55	\$2.25	\$2.81	\$3.61	\$0.67	(\$0.93)	\$0.24	\$4.81	\$4.62
\$100	\$3.85	\$5.23	\$6.95	\$6.75	\$4.29	\$0.46	\$2.34	\$7.09	\$8.25
\$120	\$5.48	\$8.15	\$10.37	\$11.17	\$9.16	\$2.01	\$4.44	\$9.09	\$11.88
<b>Profitability Index-12</b>									
\$80	1.19	1.17	1.21	1.25	1.04	0.88	1.01	1.22	1.21
\$100	1.29	1.39	1.52	1.47	1.28	1.06	1.14	1.33	1.38
\$120	1.41	1.61	1.78	1.78	1.60	1.26	1.27	1.42	1.55
<b>IRR (Percent)</b>									
\$80	19.7%	16.7%	17.5%	29.9%	13.6%	9.7%	12.4%	34.5%	24.7%
\$100	23.4%	22.7%	24.9%	46.3%	22.7%	13.1%	16.0%	45.2%	32.9%
\$120	27.6%	28.0%	31.0%	73.6%	37.0%	16.3%	19.3%	53.5%	40.2%
<b>5-Year (2017-2021) Cash Margins (Dollars Per BOE)</b>									
\$80	\$25.84	\$36.94	\$36.94	\$23.39	\$28.39	\$26.07	\$34.51	\$22.94	\$29.35
\$100	\$28.84	\$42.79	\$48.99	\$29.99	\$36.48	\$29.14	\$39.42	\$28.85	\$37.82
\$120	\$33.13	\$49.19	\$57.96	\$36.87	\$44.91	\$33.37	\$44.32	\$31.29	\$46.30
<b>Government Take (Percent)</b>									
\$80	70.8%	64.9%	59.4%	71.7%	77.1%	63.4%	67.8%	61.0%	52.0%
\$100	75.8%	65.9%	58.0%	67.9%	72.1%	63.5%	71.7%	68.6%	55.8%
\$120	77.2%	66.3%	59.3%	65.1%	68.7%	63.0%	73.4%	72.0%	57.5%
<b>State/Municipal NPV-12/BOE (Dollars Per BOE)</b>									
\$80	\$6.67	\$7.13	\$6.27	-	-	-	-	-	-
\$100	\$13.32	\$11.19	\$8.55	-	-	-	-	-	-
\$120	\$19.46	\$15.34	\$11.93	-	-	-	-	-	-

\* Brownfield Allowance applied to 100 MMBOE development.

Lower Cost: \$16 Per Barrel Development Capex and \$14 Per Barrel Opex

# Summary of Investment Measures for Incumbent Lower Cost Alaska Oil Development ACES and SRES CS SB21 v. Benchmark Areas



Real \$2012 West Coast ANS Price	Lower Cost Alaska			Unconventional Lower-48		Canada Oil Sands SAGD	Norway	United Kingdom	
	ACES	SRES CS SB21		Eagle Ford	Bakken			Pre-1993 w/ Brownfield Allowance*	Post-1993 w/ Brownfield Allowance*
		Without GRE	With GRE	(4)	(5)			(8)	(9)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
<b>Producer NPV-12 / BOE (Dollars Per BOE)</b>									
\$80	\$3.71	\$2.54	\$4.00	\$3.61	\$0.67	(\$0.93)	\$0.24	\$4.81	\$4.62
\$100	\$6.14	\$5.38	\$7.27	\$6.75	\$4.29	\$0.46	\$2.34	\$7.09	\$8.25
\$120	\$8.82	\$8.23	\$10.55	\$11.17	\$9.16	\$2.01	\$4.44	\$9.09	\$11.88
<b>Profitability Index-12</b>									
\$80	1.28	1.19	1.30	1.25	1.04	0.88	1.01	1.22	1.21
\$100	1.46	1.41	1.55	1.47	1.28	1.06	1.14	1.33	1.38
\$120	1.67	1.62	1.80	1.78	1.60	1.26	1.27	1.42	1.55
<b>IRR (Percent)</b>									
\$80	26.2%	18.9%	22.3%	29.9%	13.6%	9.7%	12.4%	34.5%	24.7%
\$100	41.1%	25.6%	29.5%	46.3%	22.7%	13.1%	16.0%	45.2%	32.9%
\$120	65.3%	31.8%	36.1%	73.6%	37.0%	16.3%	19.3%	53.5%	40.2%
<b>5-Year (2017-2021) Cash Margins (Dollars Per BOE)</b>									
\$80	\$24.26	\$27.76	\$32.07	\$23.39	\$28.39	\$26.07	\$34.51	\$22.94	\$29.35
\$100	\$27.22	\$35.59	\$41.17	\$29.99	\$36.48	\$29.14	\$39.42	\$28.85	\$37.82
\$120	\$31.18	\$43.42	\$50.27	\$36.87	\$44.91	\$33.37	\$44.32	\$31.29	\$46.30
<b>Government Take (Percent)</b>									
\$80	68.9%	67.8%	59.3%	71.7%	77.1%	63.4%	67.8%	61.0%	52.0%
\$100	73.0%	67.6%	60.2%	67.9%	72.1%	63.5%	71.7%	68.6%	55.8%
\$120	73.8%	67.5%	60.6%	65.1%	68.7%	63.0%	73.4%	72.0%	57.5%
<b>State/Municipal NPV-12/BOE (Dollars Per BOE)</b>									
\$80	\$4.88	\$6.69	\$4.44	-	-	-	-	-	-
\$100	\$9.79	\$10.95	\$8.05	-	-	-	-	-	-
\$120	\$14.31	\$15.22	\$11.66	-	-	-	-	-	-

Note: Analysis of incumbent production includes "buy-down" impact for reduced taxes on existing production.

\* Brownfield Allowance applied to 100 MMBOE development.

Lower Cost: \$16 Per Barrel Development Capex and \$14 Per Barrel Opex



# Summary of Investment Measures for New Participant Higher Cost Alaska Oil Development ACES and SRES CS SB21 v. Benchmark Areas



Real \$2012 West Coast ANS Price	Higher Cost Alaska			Unconventional Lower-48		Canada Oil Sands	Norway	United Kingdom	
	ACES	SRES CS SB21		Eagle Ford	Bakken	SAGD		Pre-1993 w/ Brownfield Allowance*	Post-1993 w/ Brownfield Allowance*
		Without GRE	With GRE						
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
<b>Producer NPV-12 / BOE (Dollars Per BOE)</b>									
\$80	(\$0.35)	(\$2.32)	(\$2.11)	\$3.61	\$0.67	(\$0.93)	\$0.24	\$4.81	\$4.62
\$100	\$0.97	\$1.52	\$2.12	\$6.75	\$4.29	\$0.46	\$2.34	\$7.09	\$8.25
\$120	\$2.58	\$4.45	\$6.36	\$11.17	\$9.16	\$2.01	\$4.44	\$9.09	\$11.88
<b>Profitability Index-12</b>									
\$80	0.98	0.89	0.90	1.25	1.04	0.88	1.01	1.22	1.21
\$100	1.05	1.07	1.10	1.47	1.28	1.06	1.14	1.33	1.38
\$120	1.12	1.21	1.31	1.78	1.60	1.26	1.27	1.42	1.55
<b>IRR (Percent)</b>									
\$80	11.3%	8.8%	9.1%	29.9%	13.6%	9.7%	12.4%	34.5%	24.7%
\$100	14.0%	14.0%	14.7%	46.3%	22.7%	13.1%	16.0%	45.2%	32.9%
\$120	17.1%	17.9%	19.8%	73.6%	37.0%	16.3%	19.3%	53.5%	40.2%
<b>5-Year (2017-2021) Cash Margins (Dollars Per BOE)</b>									
\$80	\$28.03	\$39.10	\$39.10	\$23.39	\$28.39	\$26.07	\$34.51	\$22.94	\$29.35
\$100	\$31.03	\$51.15	\$51.15	\$29.99	\$36.48	\$29.14	\$39.42	\$28.85	\$37.82
\$120	\$35.32	\$57.98	\$63.19	\$36.87	\$44.91	\$33.37	\$44.32	\$31.29	\$46.30
<b>Government Take (Percent)</b>									
\$80	71.6%	67.4%	63.6%	71.7%	77.1%	63.4%	67.8%	61.0%	52.0%
\$100	76.9%	64.9%	60.0%	67.9%	72.1%	63.5%	71.7%	68.6%	55.8%
\$120	78.1%	66.2%	58.3%	65.1%	68.7%	63.0%	73.4%	72.0%	57.5%
<b>State/Municipal NPV-12/BOE (Dollars Per BOE)</b>									
\$80	\$3.24	\$6.27	\$5.96	-	-	-	-	-	-
\$100	\$9.86	\$9.01	\$8.08	-	-	-	-	-	-
\$120	\$16.02	\$13.14	\$10.21	-	-	-	-	-	-

\* Brownfield Allowance applied to 100 MMBOE development.

Higher Cost: \$25 Per Barrel Development Capex and \$14 Per Barrel Opex

# Summary of Investment Measures for Incumbent Higher Cost Alaska Oil Development ACES and SRES CS SB21 v. Benchmark Areas



Real \$2012 West Coast ANS Price	Higher Cost Alaska			Unconventional Lower-48		Canada Oil Sands SAGD	Norway	United Kingdom	
	ACES	SRES CS SB21		Eagle Ford	Bakken	w/ Brownfield Allowance*		Post-1993 w/ Brownfield Allowance*	
		Without GRE	With GRE						
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
<b>Producer NPV-12 / BOE (Dollars Per BOE)</b>									
\$80	\$1.34	(\$0.80)	\$0.66	\$3.61	\$0.67	(\$0.93)	\$0.24	\$4.81	\$4.62
\$100	\$4.68	\$2.05	\$3.94	\$6.75	\$4.29	\$0.46	\$2.34	\$7.09	\$8.25
\$120	\$8.10	\$4.89	\$7.21	\$11.17	\$9.16	\$2.01	\$4.44	\$9.09	\$11.88
<b>Profitability Index-12</b>									
\$80	1.06	0.96	1.03	1.25	1.04	0.88	1.01	1.22	1.21
\$100	1.23	1.10	1.19	1.47	1.28	1.06	1.14	1.33	1.38
\$120	1.39	1.24	1.35	1.78	1.60	1.26	1.27	1.42	1.55
<b>IRR (Percent)</b>									
\$80	15.4%	10.5%	13.2%	29.9%	13.6%	9.7%	12.4%	34.5%	24.7%
\$100	27.2%	15.6%	18.6%	46.3%	22.7%	13.1%	16.0%	45.2%	32.9%
\$120	46.0%	20.2%	23.5%	73.6%	37.0%	16.3%	19.3%	53.5%	40.2%
<b>5-Year (2017-2021) Cash Margins (Dollars Per BOE)</b>									
\$80	\$26.45	\$29.92	\$34.23	\$23.39	\$28.39	\$26.07	\$34.51	\$22.94	\$29.35
\$100	\$29.41	\$37.75	\$43.33	\$29.99	\$36.48	\$29.14	\$39.42	\$28.85	\$37.82
\$120	\$33.37	\$45.58	\$52.42	\$36.87	\$44.91	\$33.37	\$44.32	\$31.29	\$46.30
<b>Government Take (Percent)</b>									
\$80	67.8%	69.4%	59.1%	71.7%	77.1%	63.4%	67.8%	61.0%	52.0%
\$100	71.2%	68.5%	60.1%	67.9%	72.1%	63.5%	71.7%	68.6%	55.8%
\$120	71.6%	68.1%	60.6%	65.1%	68.7%	63.0%	73.4%	72.0%	57.5%
<b>State/Municipal NPV-12/BOE (Dollars Per BOE)</b>									
\$80	\$0.64	\$3.93	\$1.69	-	-	-	-	-	-
\$100	\$4.15	\$8.20	\$5.29	-	-	-	-	-	-
\$120	\$7.53	\$12.46	\$8.90	-	-	-	-	-	-

Note: Analysis of incumbent production includes “buy-down” impact for reduced taxes on existing production.

\* Brownfield Allowance applied to 100 MMBOE development.

Higher Cost: \$25 Per Barrel Development Capex and \$14 Per Barrel Opex

# Summary of Investment Measures for New Participant Very High Cost Alaska Oil Development ACES and SRES CS SB21 v. Benchmark Areas



Real \$2012 West Coast ANS Price	Very High Cost Alaska			Unconventional Lower-48		Canada Oil Sands	Norway	United Kingdom	
	ACES	SRES CS SB21		Eagle Ford	Bakken	SAGD		Pre-1993 w/ Brownfield Allowance*	Post-1993 w/ Brownfield Allowance*
		Without GRE	With GRE						
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
<b>Producer NPV-12 / BOE (Dollars Per BOE)</b>									
\$80	(\$4.00)	(\$8.72)	(\$8.53)	\$3.61	\$0.67	(\$0.93)	\$0.24	\$4.81	\$4.62
\$100	(\$2.33)	(\$4.54)	(\$4.28)	\$6.75	\$4.29	\$0.46	\$2.34	\$7.09	\$8.25
\$120	(\$0.91)	(\$0.37)	(\$0.04)	\$11.17	\$9.16	\$2.01	\$4.44	\$9.09	\$11.88
<b>Profitability Index-12</b>									
\$80	0.86	0.69	0.70	1.25	1.04	0.88	1.01	1.22	1.21
\$100	0.92	0.84	0.85	1.47	1.28	1.06	1.14	1.33	1.38
\$120	0.97	0.99	1.00	1.78	1.60	1.26	1.27	1.42	1.55
<b>IRR (Percent)</b>									
\$80	5.3%	2.1%	2.6%	29.9%	13.6%	9.7%	12.4%	34.5%	24.7%
\$100	8.2%	7.2%	7.6%	46.3%	22.7%	13.1%	16.0%	45.2%	32.9%
\$120	10.6%	11.6%	12.0%	73.6%	37.0%	16.3%	19.3%	53.5%	40.2%
<b>5-Year (2017-2021) Cash Margins (Dollars Per BOE)</b>									
\$80	\$28.73	\$37.26	\$37.26	\$23.39	\$28.39	\$26.07	\$34.51	\$22.94	\$29.35
\$100	\$32.48	\$49.31	\$49.31	\$29.99	\$36.48	\$29.14	\$39.42	\$28.85	\$37.82
\$120	\$36.02	\$61.36	\$61.36	\$36.87	\$44.91	\$33.37	\$44.32	\$31.29	\$46.30
<b>Government Take (Percent)</b>									
\$80	72.4%	84.4%	78.7%	71.7%	77.1%	63.4%	67.8%	61.0%	52.0%
\$100	77.2%	69.8%	65.7%	67.9%	72.1%	63.5%	71.7%	68.6%	55.8%
\$120	79.5%	65.1%	61.7%	65.1%	68.7%	63.0%	73.4%	72.0%	57.5%
<b>State/Municipal NPV-12/BOE (Dollars Per BOE)</b>									
\$80	(\$1.66)	\$5.60	\$5.31	-	-	-	-	-	-
\$100	\$4.42	\$7.83	\$7.42	-	-	-	-	-	-
\$120	\$10.88	\$10.05	\$9.55	-	-	-	-	-	-

\* Brownfield Allowance applied to 100 MMBOE development.

Very High Cost: \$34 Per Barrel Development Capex and \$21 Per Barrel Opex

# Summary of Investment Measures for Incumbent Very High Cost Alaska Oil Development ACES and SRES CS SB21 v. Benchmark Areas



Real \$2012 West Coast ANS Price	Very High Cost Alaska			Unconventional Lower-48		Canada Oil Sands	Norway	United Kingdom	
	ACES	SRES CS SB21		Eagle Ford	Bakken	SAGD		Pre-1993 w/ Brownfield Allowance*	Post-1993 w/ Brownfield Allowance*
		Without GRE	With GRE						
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
<b>Producer NPV-12 / BOE (Dollars Per BOE)</b>									
\$80	(\$1.93)	(\$5.17)	(\$3.71)	\$3.61	\$0.67	(\$0.93)	\$0.24	\$4.81	\$4.62
\$100	\$2.58	(\$2.32)	(\$0.43)	\$6.75	\$4.29	\$0.46	\$2.34	\$7.09	\$8.25
\$120	\$6.66	\$0.52	\$2.84	\$11.17	\$9.16	\$2.01	\$4.44	\$9.09	\$11.88
<b>Profitability Index-12</b>									
\$80	0.93	0.82	0.87	1.25	1.04	0.88	1.01	1.22	1.21
\$100	1.09	0.92	0.98	1.47	1.28	1.06	1.14	1.33	1.38
\$120	1.24	1.02	1.10	1.78	1.60	1.26	1.27	1.42	1.55
<b>IRR (Percent)</b>									
\$80	8.1%	4.1%	6.6%	29.9%	13.6%	9.7%	12.4%	34.5%	24.7%
\$100	18.5%	8.7%	11.4%	46.3%	22.7%	13.1%	16.0%	45.2%	32.9%
\$120	33.8%	12.7%	15.6%	73.6%	37.0%	16.3%	19.3%	53.5%	40.2%
<b>5-Year (2017-2021) Cash Margins (Dollars Per BOE)</b>									
\$80	\$26.79	\$29.48	\$33.79	\$23.39	\$28.39	\$26.07	\$34.51	\$22.94	\$29.35
\$100	\$30.52	\$37.31	\$42.89	\$29.99	\$36.48	\$29.14	\$39.42	\$28.85	\$37.82
\$120	\$33.98	\$45.14	\$51.98	\$36.87	\$44.91	\$33.37	\$44.32	\$31.29	\$46.30
<b>Government Take (Percent)</b>									
\$80	63.8%	76.0%	58.1%	71.7%	77.1%	63.4%	67.8%	61.0%	52.0%
\$100	66.7%	71.5%	60.0%	67.9%	72.1%	63.5%	71.7%	68.6%	55.8%
\$120	68.1%	70.0%	60.7%	65.1%	68.7%	63.0%	73.4%	72.0%	57.5%
<b>State/Municipal NPV-12/BOE (Dollars Per BOE)</b>									
\$80	(\$4.84)	\$0.14	(\$2.10)	-	-	-	-	-	-
\$100	(\$3.14)	\$4.41	\$1.50	-	-	-	-	-	-
\$120	(\$0.76)	\$8.67	\$5.11	-	-	-	-	-	-

Note: Analysis of incumbent production includes “buy-down” impact for reduced taxes on existing production.

\* Brownfield Allowance applied to 100 MMBOE development.

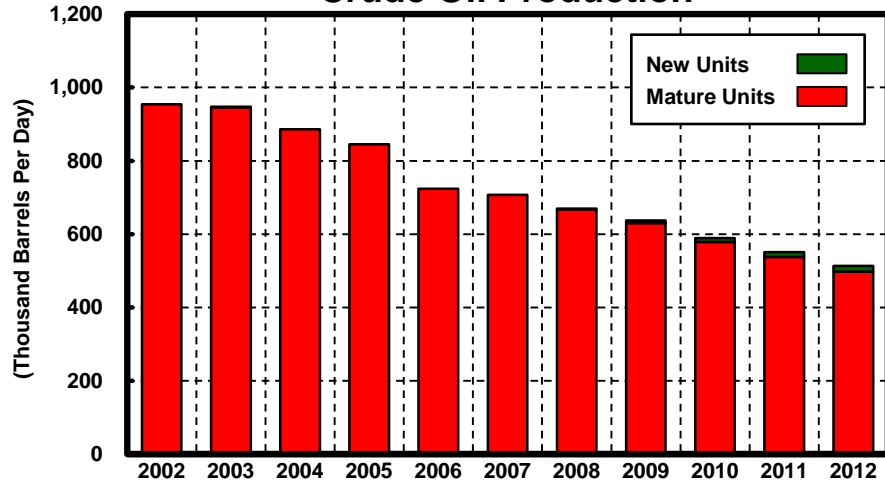
Very High Cost: \$34 Per Barrel Development Capex and \$21 Per Barrel Opex

# Appendix

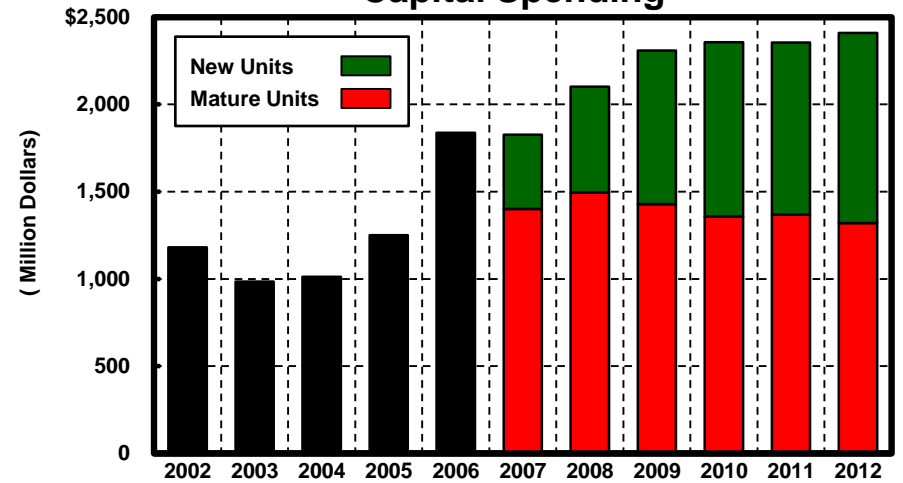
# Country/Area Profile

## Alaska North Slope

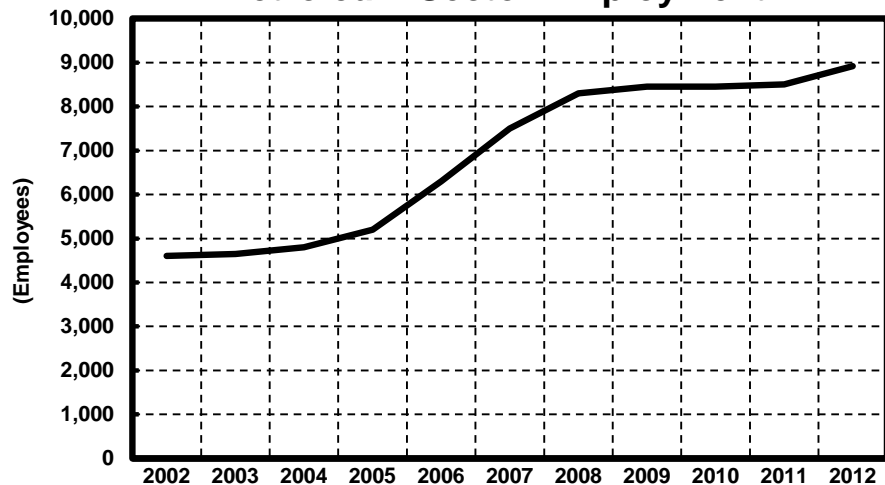
### Crude Oil Production



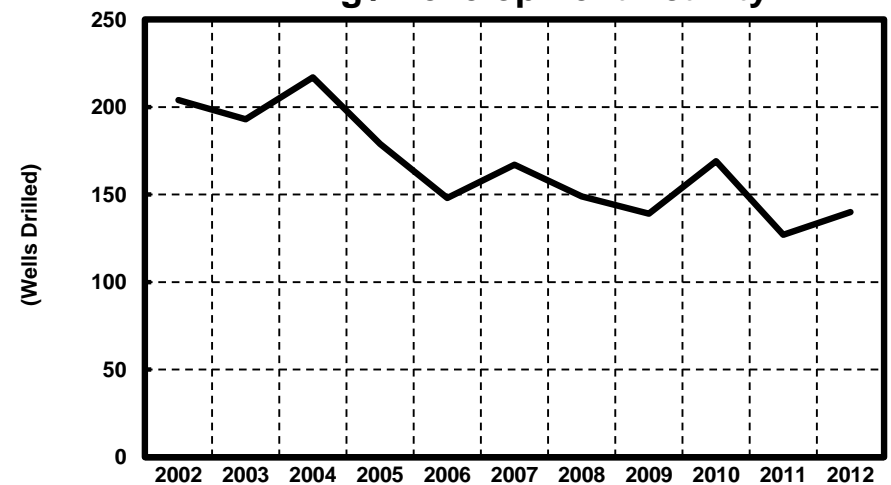
### Capital Spending



### Petroleum Sector Employment



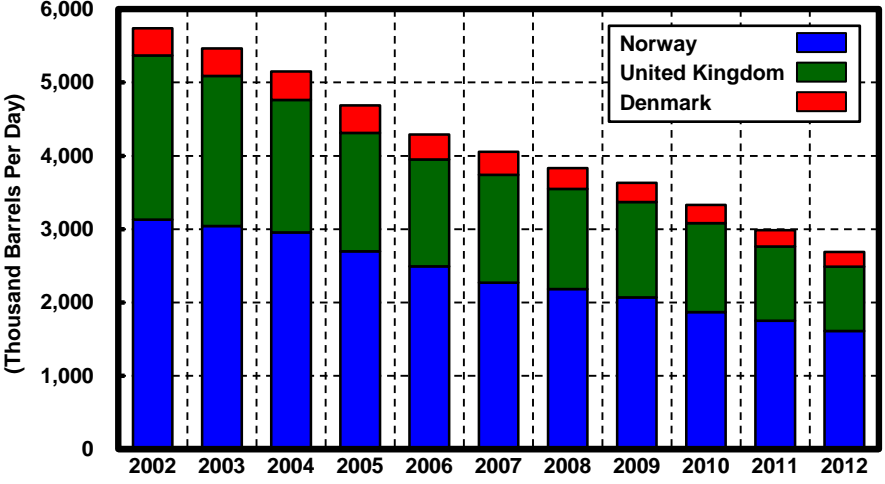
### Drilling / Development Activity



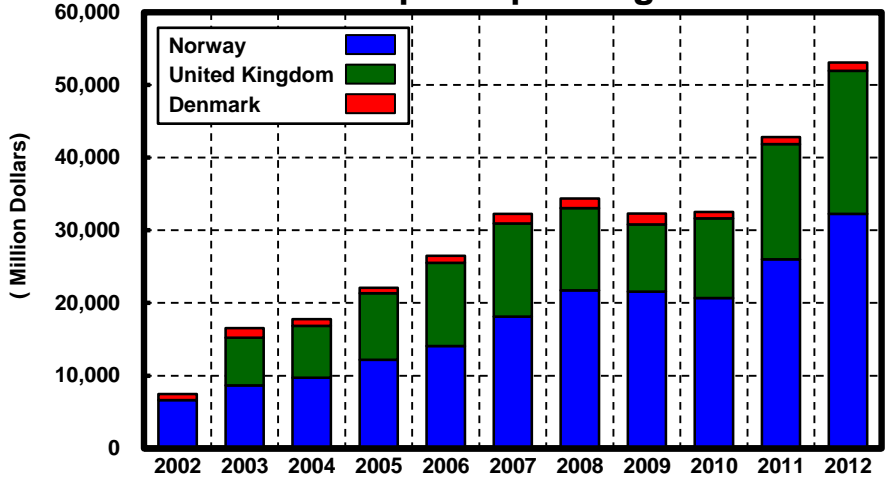
# Country/Area Profile

## Northwest Europe (North Sea)

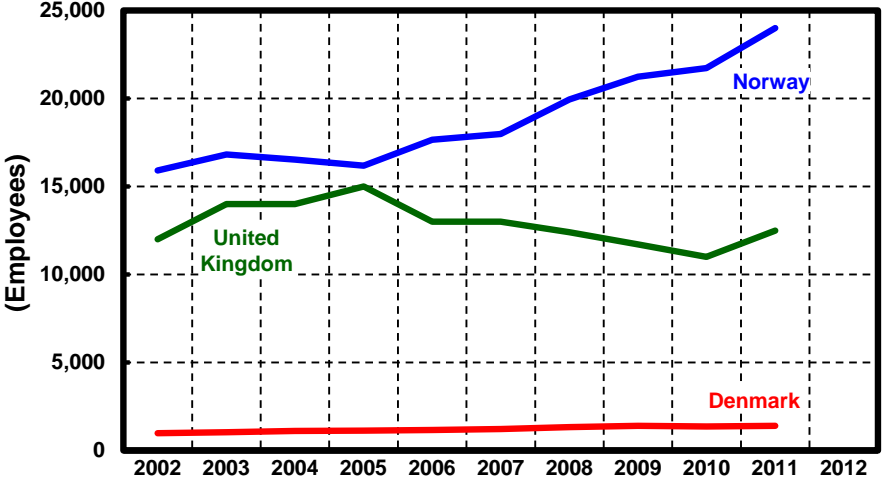
### Crude Oil Production



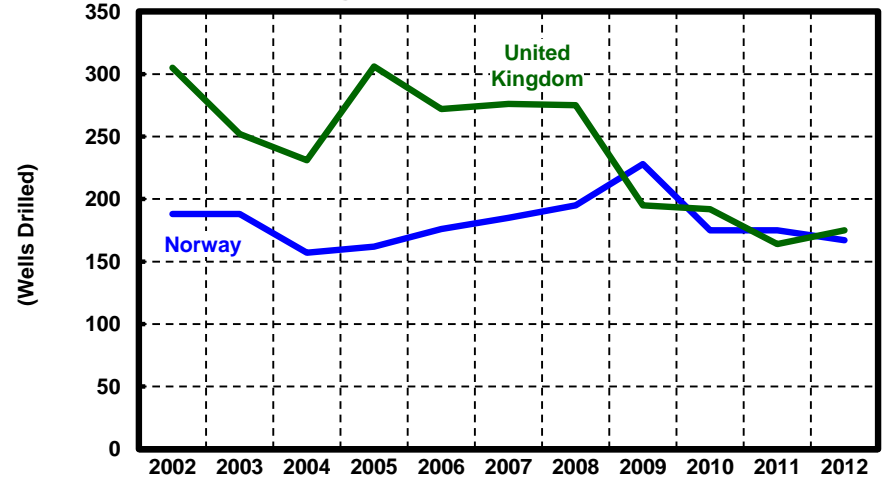
### Capital Spending



### Petroleum Sector Employment



### Drilling / Development Activity

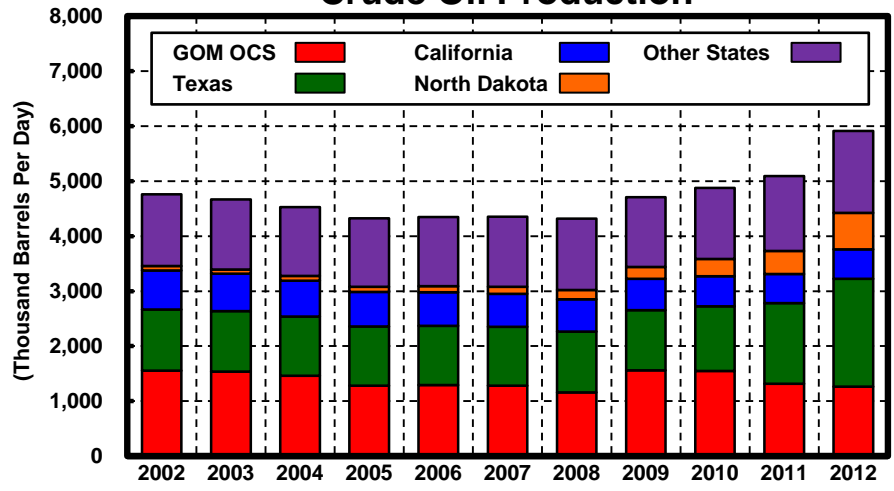


Note: 2012 figures are preliminary.

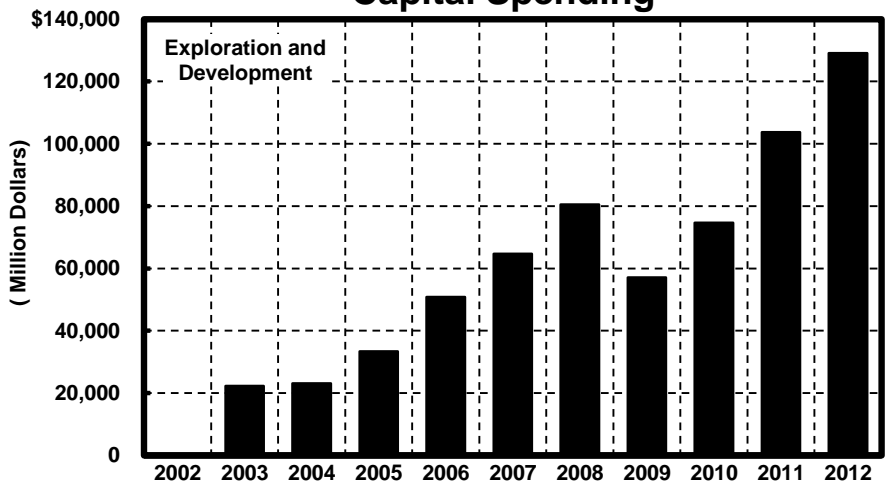
# Country/Area Profile

## United States Excluding Alaska North Slope

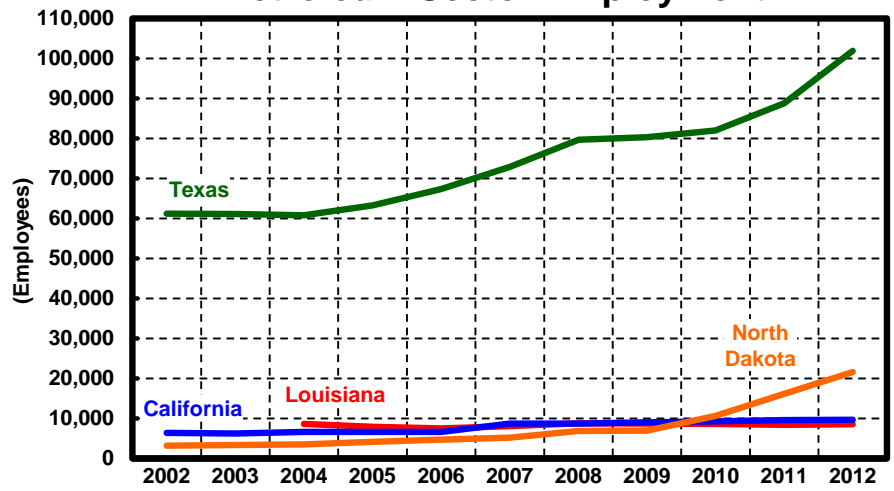
### Crude Oil Production



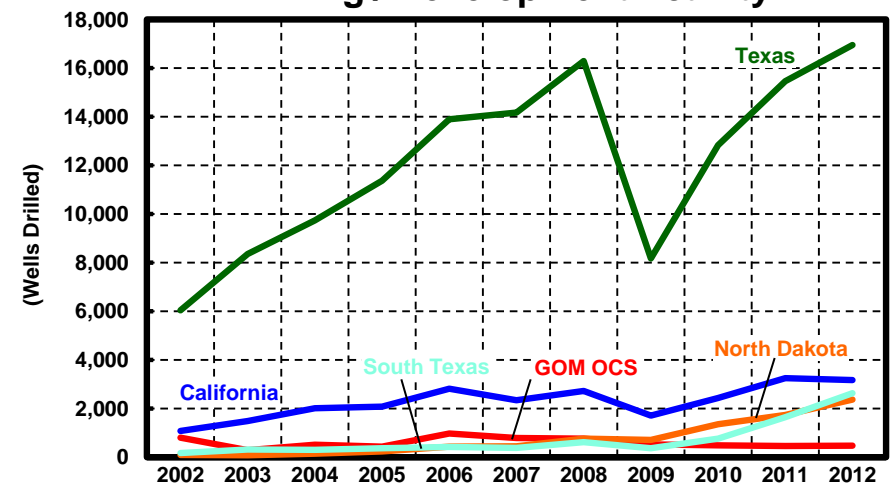
### Capital Spending



### Petroleum Sector Employment



### Drilling / Development Activity



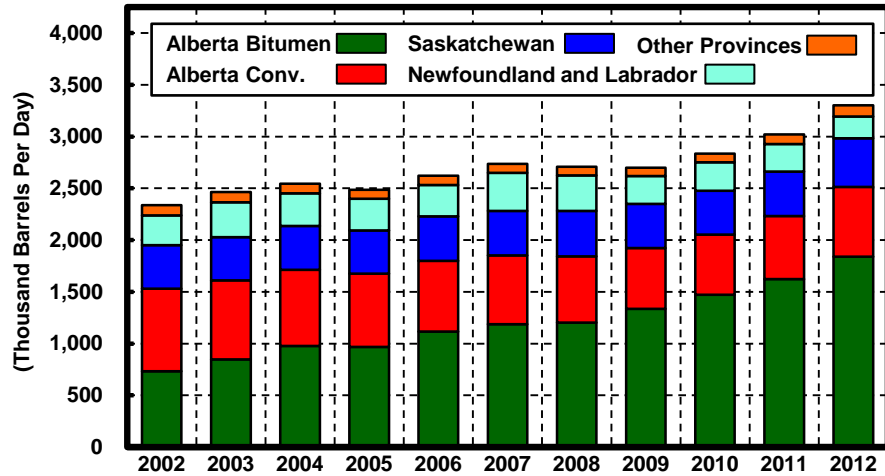
Note: 2012 figures are preliminary.



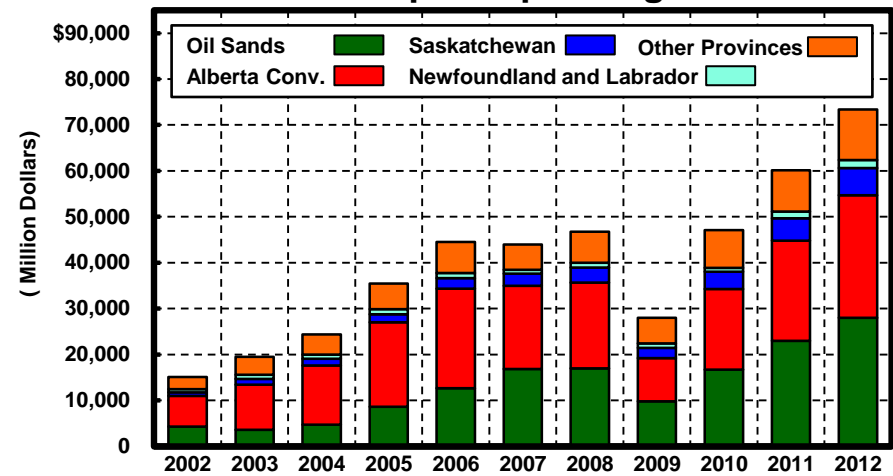
# Country/Area Profile

## Canada

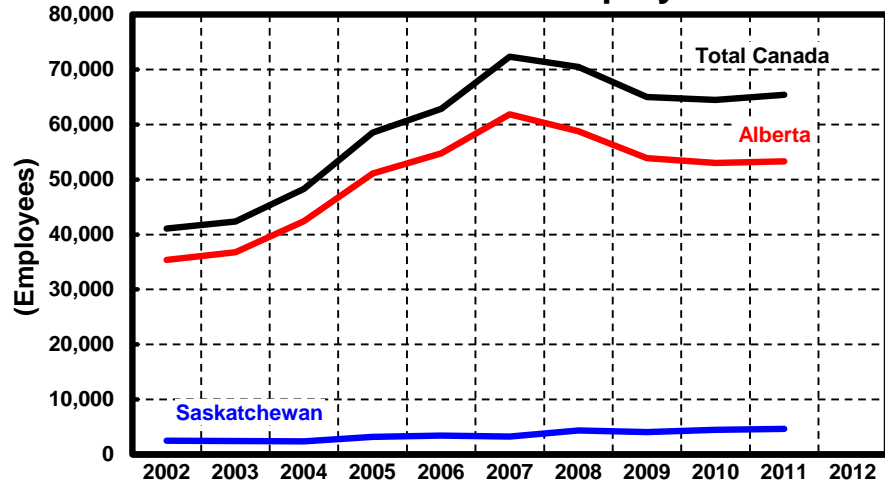
### Crude Oil Production



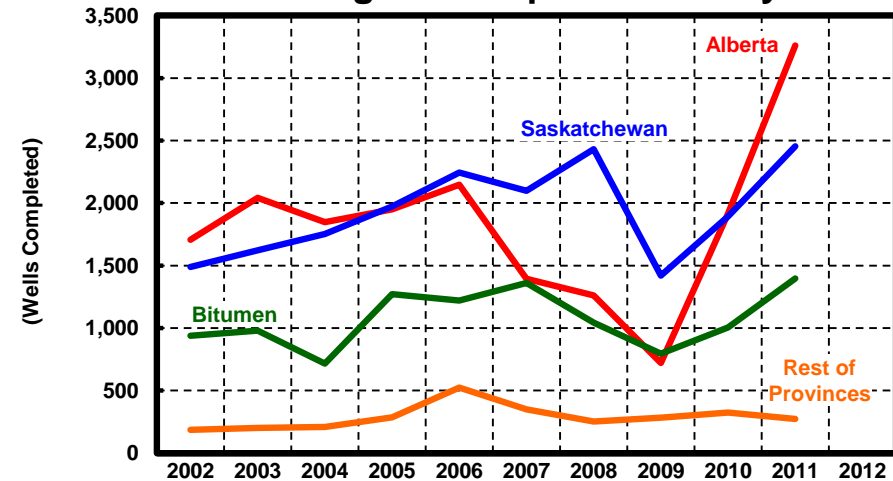
### Capital Spending



### Petroleum Sector Employment



### Drilling / Development Activity

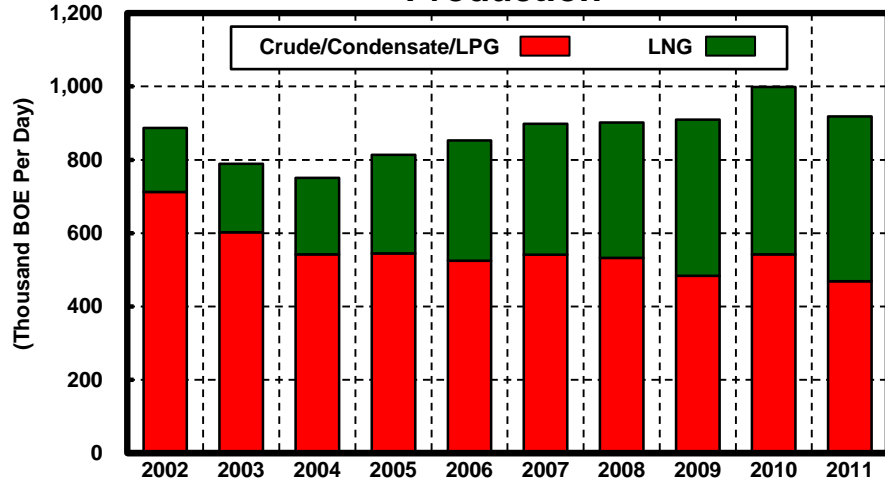


Note: 2012 figures are preliminary.

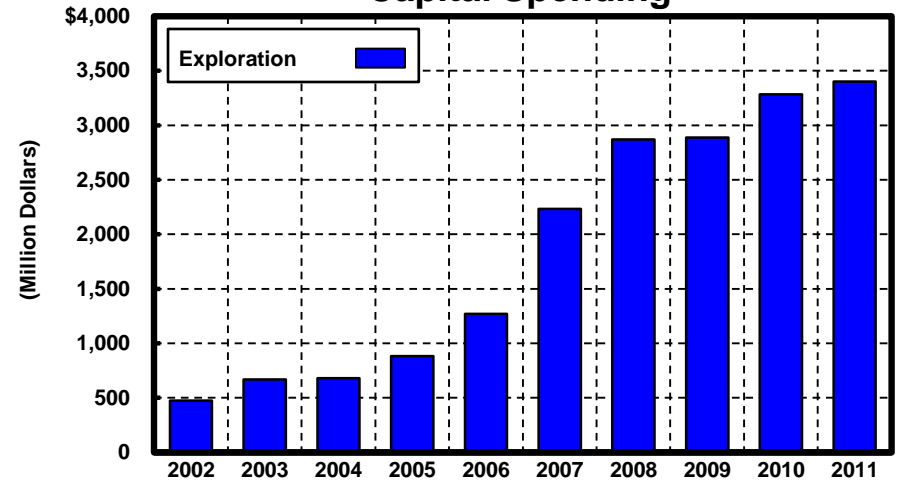
# Country/Area Profile

## Australia

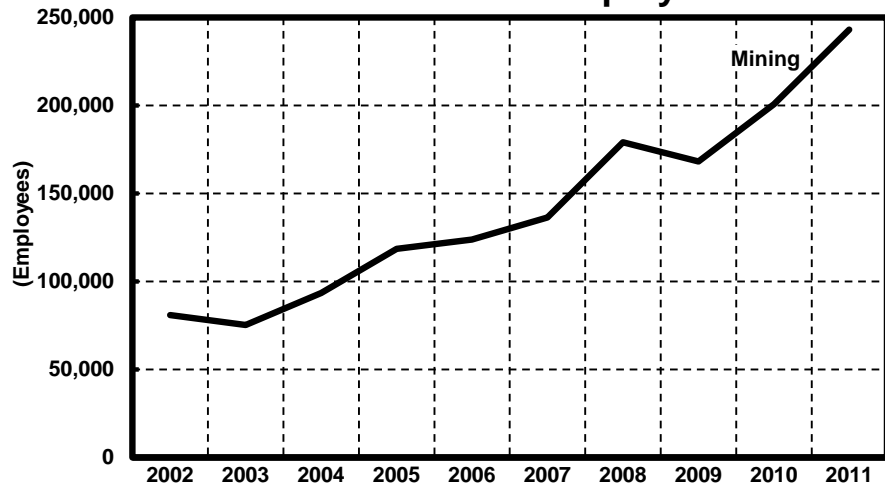
### Production



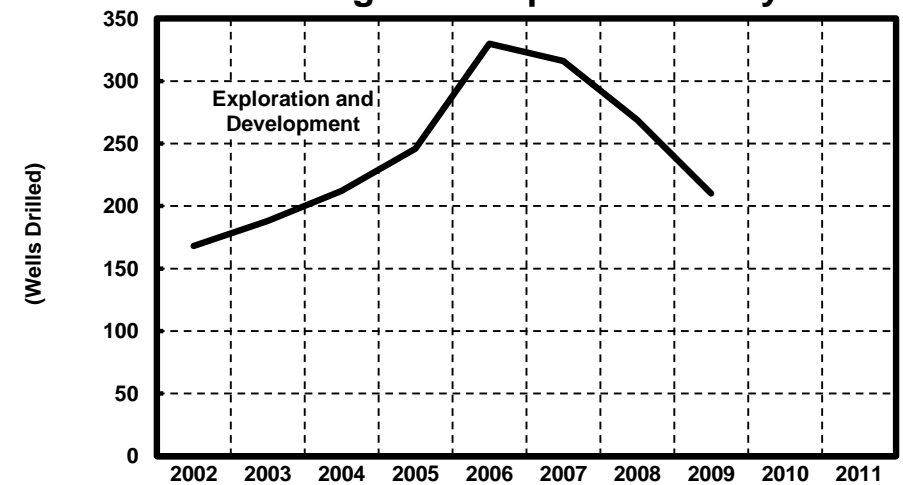
### Capital Spending



### Petroleum Sector Employment

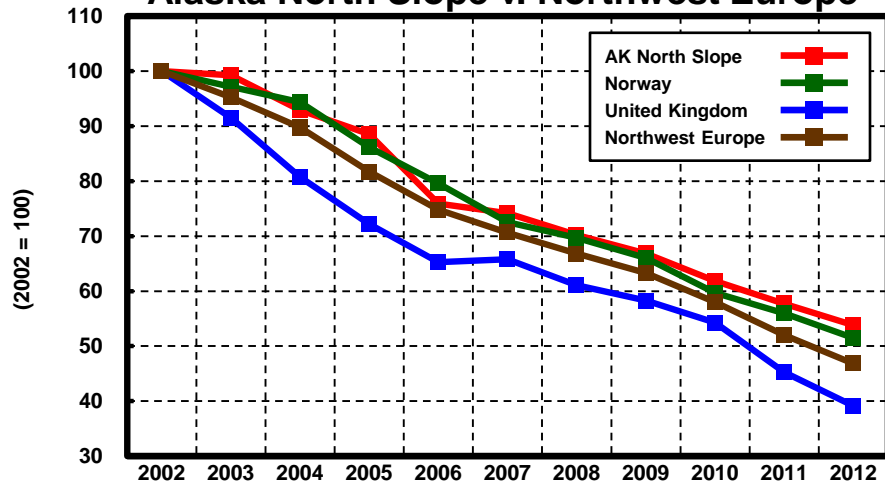


### Drilling / Development Activity

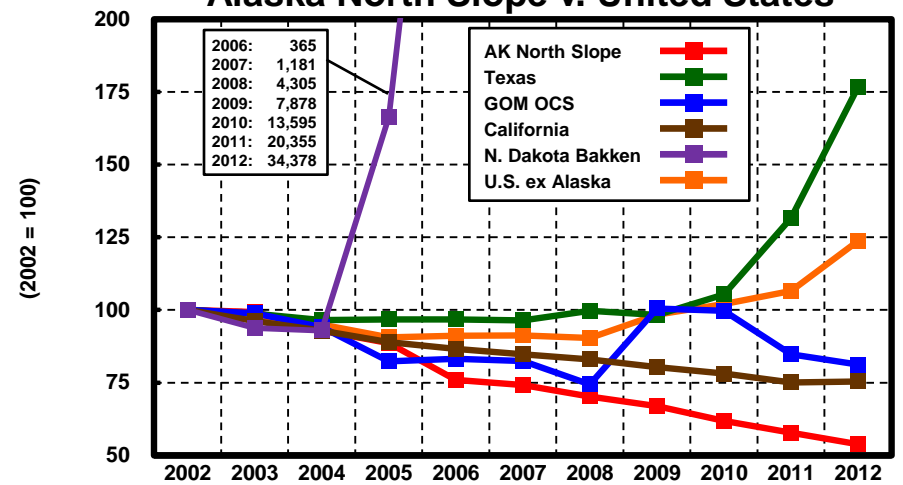


# Crude Oil Production Comparisons to Alaska

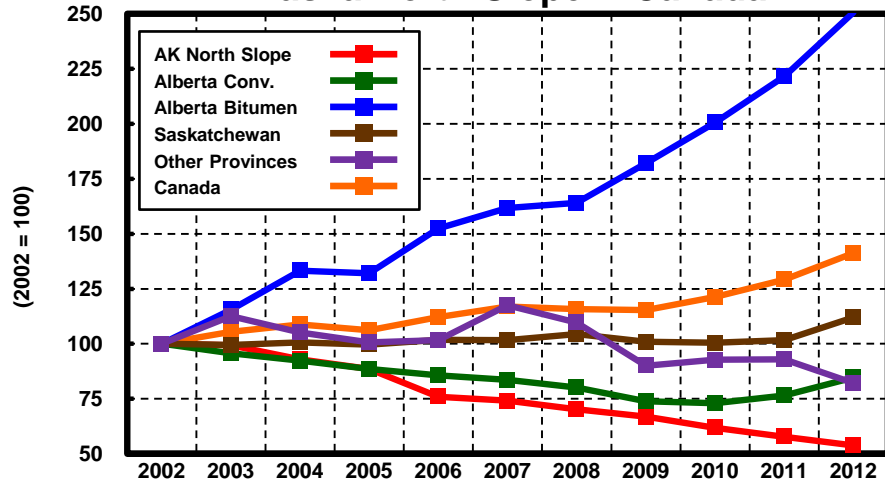
## Alaska North Slope v. Northwest Europe



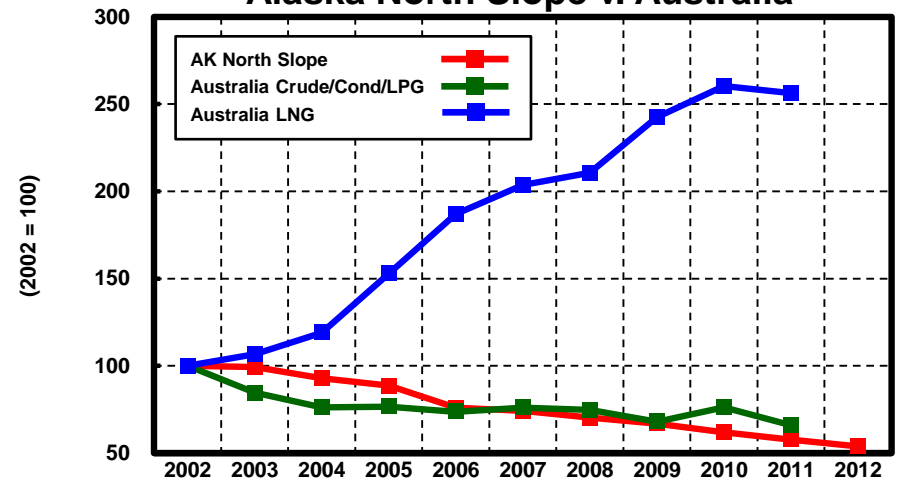
## Alaska North Slope v. United States



## Alaska North Slope v. Canada

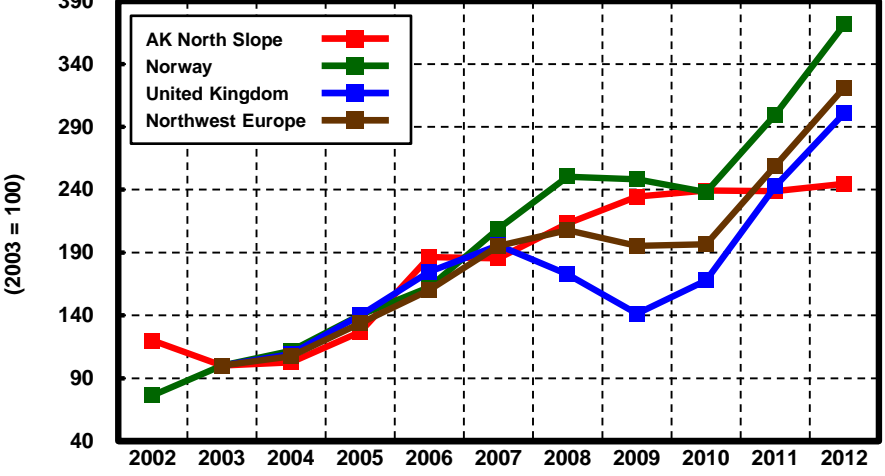


## Alaska North Slope v. Australia

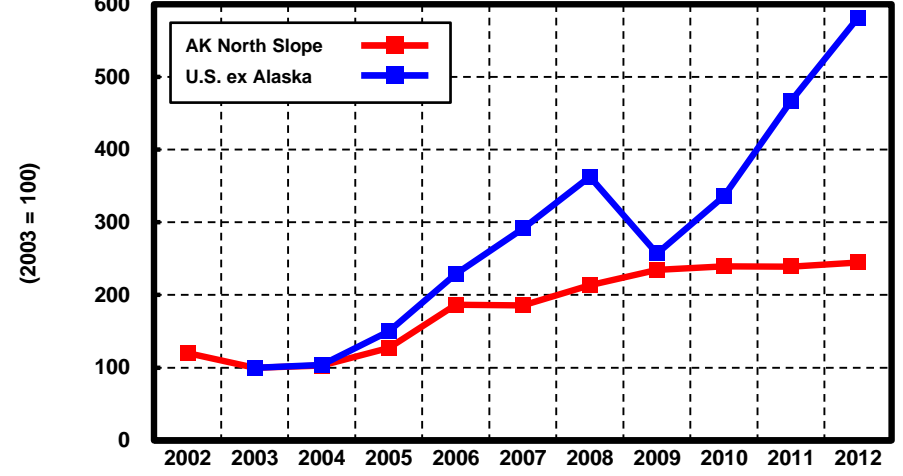


# Capital Spending Comparisons to Alaska

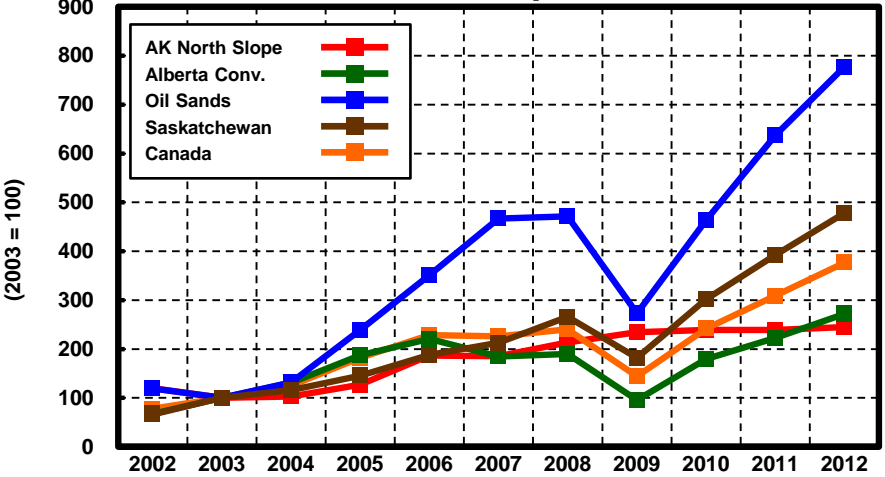
### Alaska North Slope v. Northwest Europe



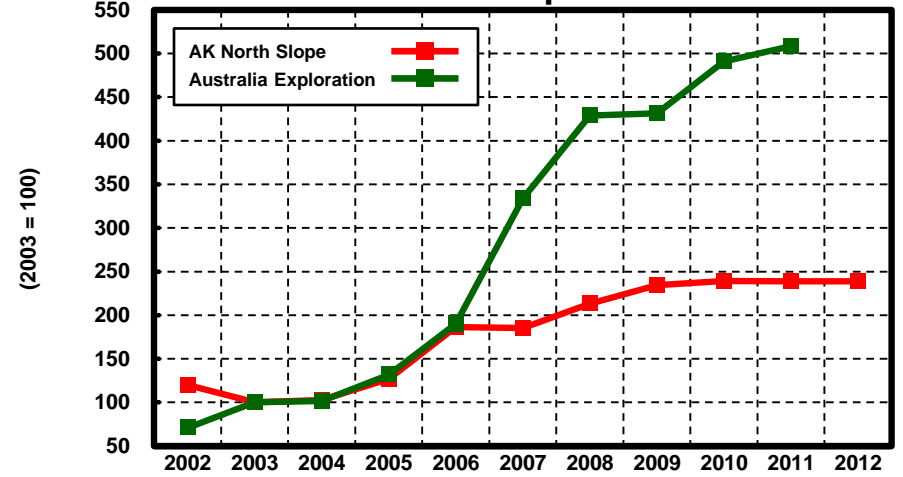
### Alaska North Slope v. United States



### Alaska North Slope v. Canada

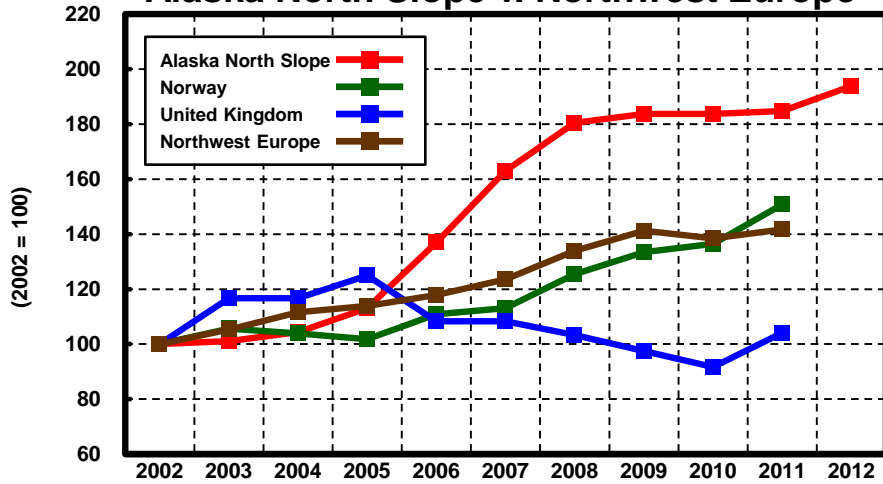


### Alaska North Slope v. Australia

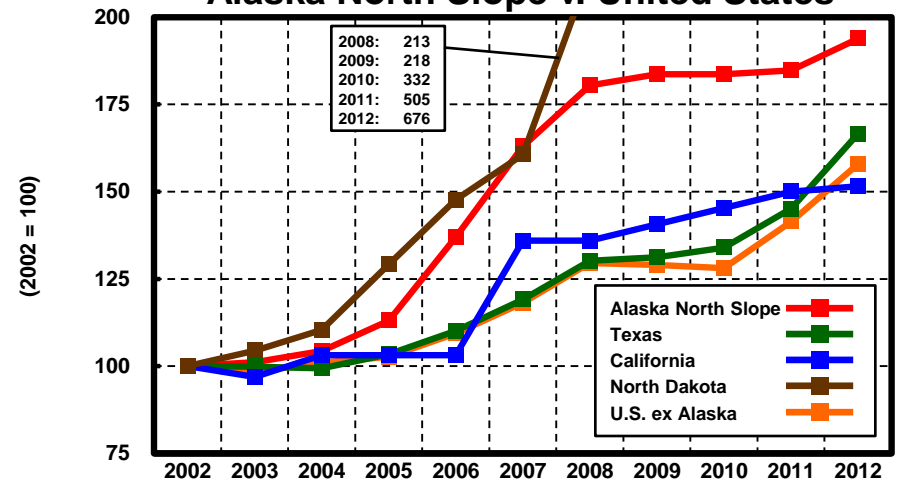


# Employment Comparisons to Alaska

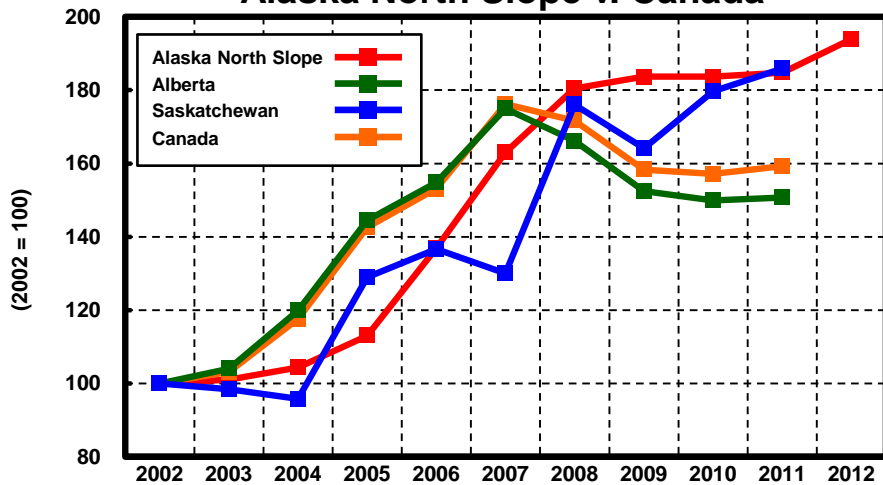
## Alaska North Slope v. Northwest Europe



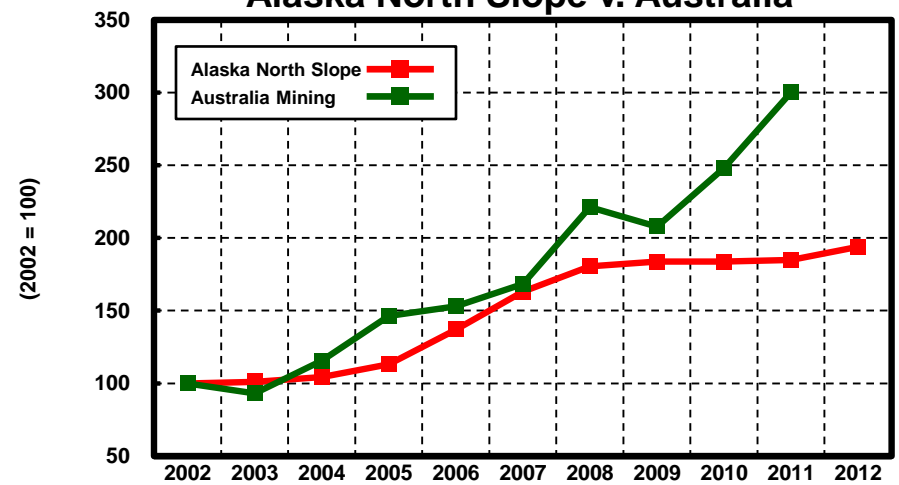
## Alaska North Slope v. United States



## Alaska North Slope v. Canada

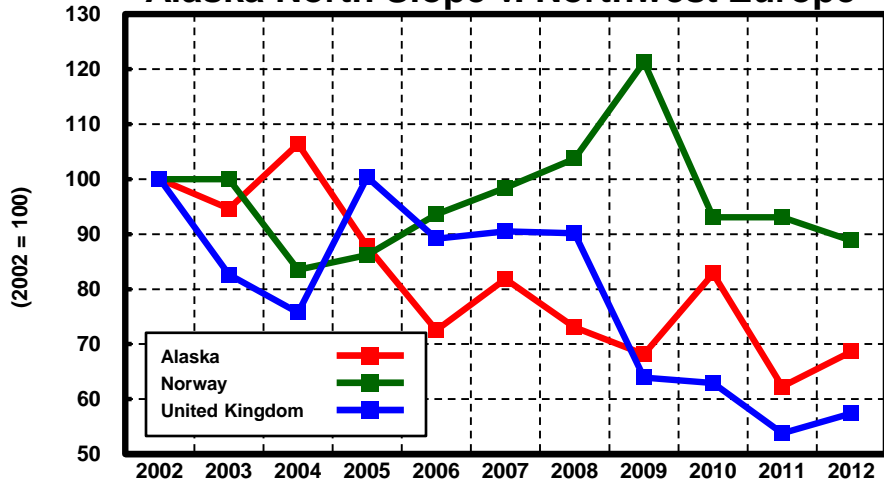


## Alaska North Slope v. Australia

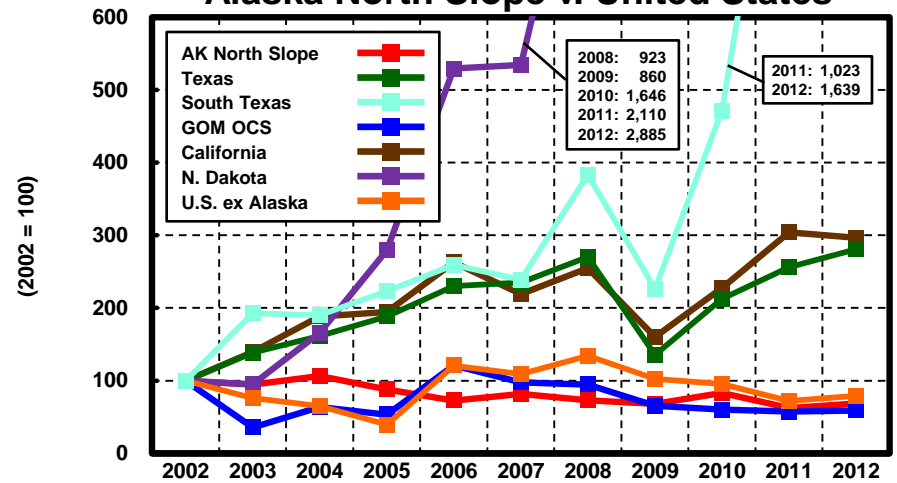


# Drilling / Development Activity Comparisons to Alaska

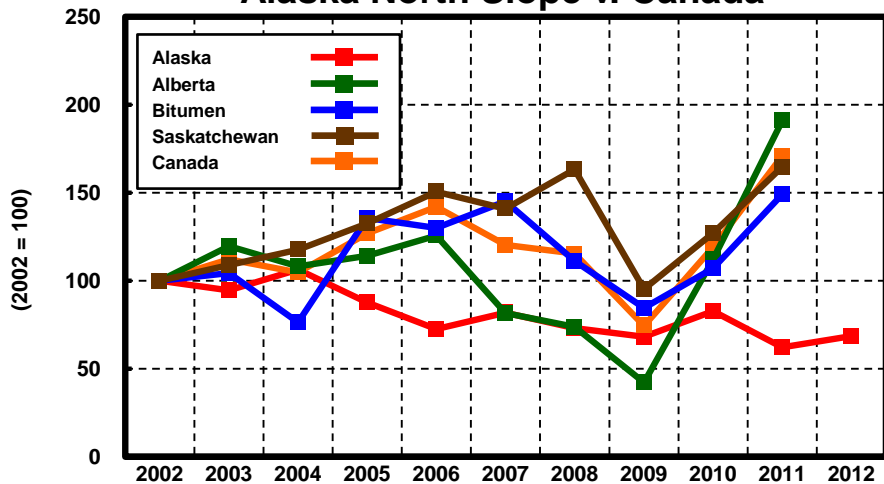
## Alaska North Slope v. Northwest Europe



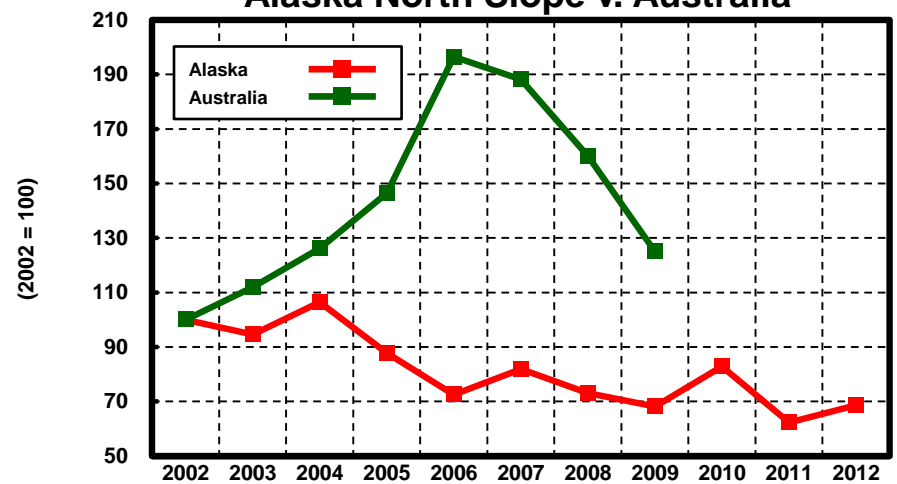
## Alaska North Slope v. United States



## Alaska North Slope v. Canada



## Alaska North Slope v. Australia

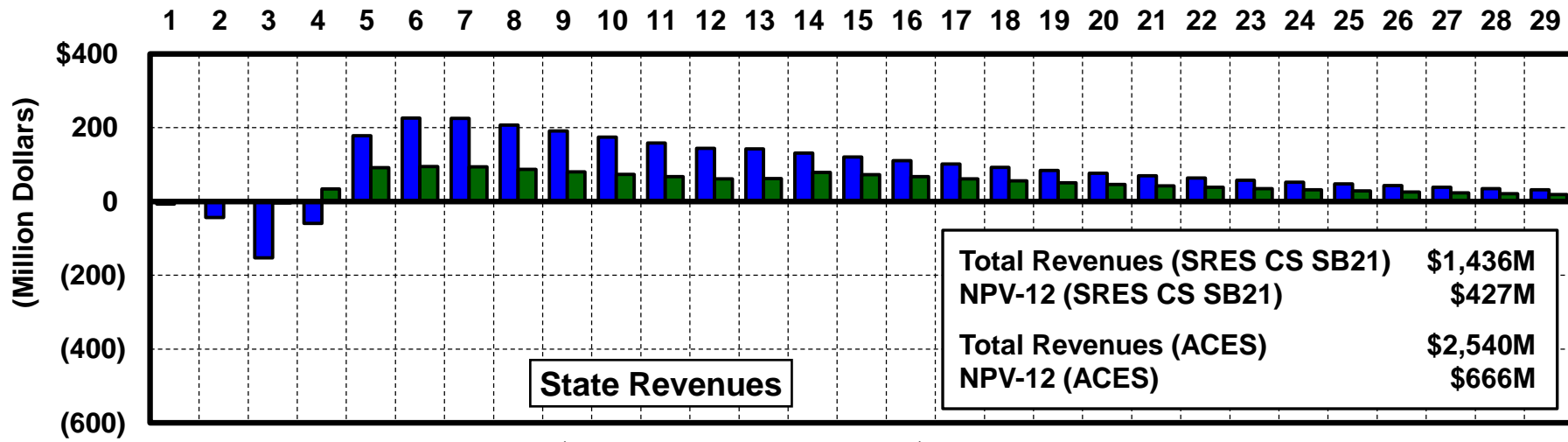
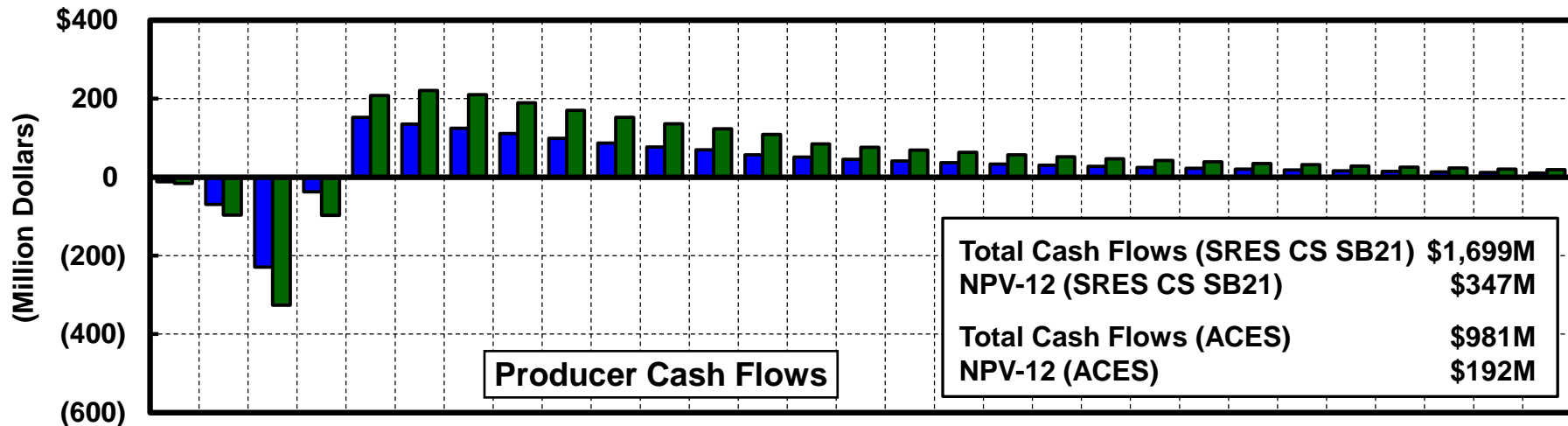


# Annual State Revenues and Producer Cash Flows at \$100 West Coast ANS (\$2012)

## Lower Cost Oil Alaska Development

### New Participant in Alaska

ACES █ SRES CS SB21 █



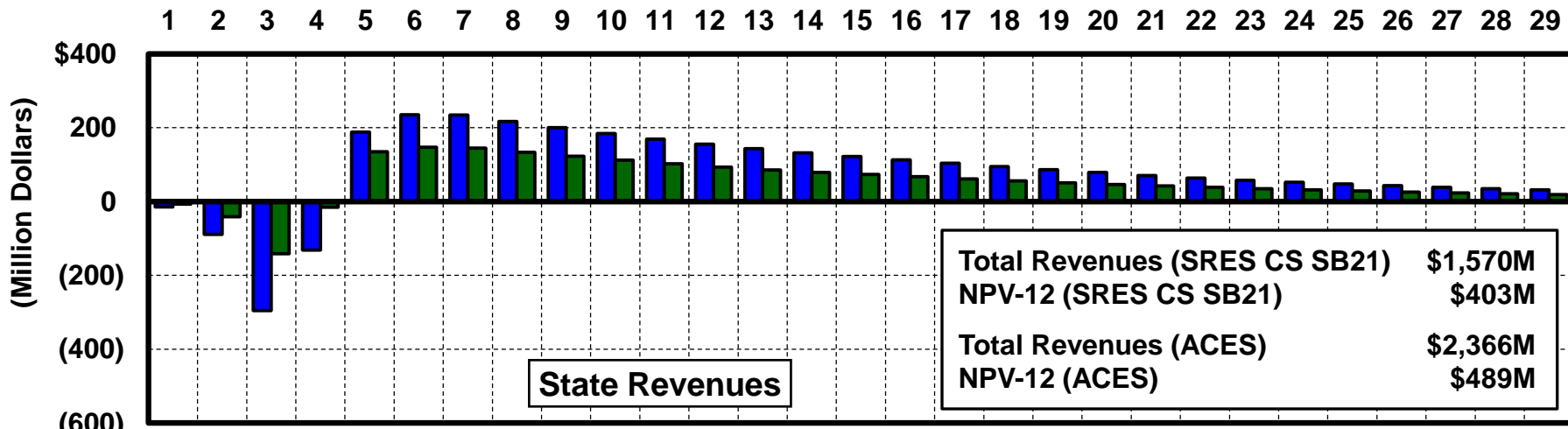
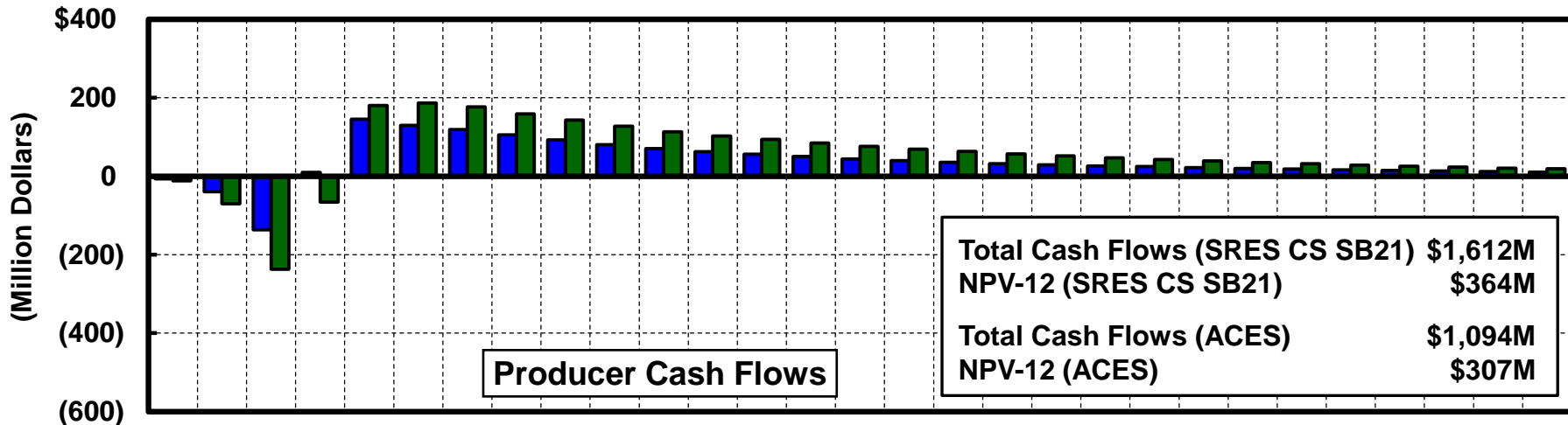
Lower Cost: \$16 Per Barrel Development Capex and \$14 Per Barrel Opex

# Annual State Revenues and Producer Cash Flows at \$100 West Coast ANS (\$2012)

## Lower Cost Oil Alaska Development

### Incumbent Participant in Alaska

ACES █ SRES CS SB21 █



Lower Cost: \$16 Per Barrel Development Capex and \$14 Per Barrel Opex

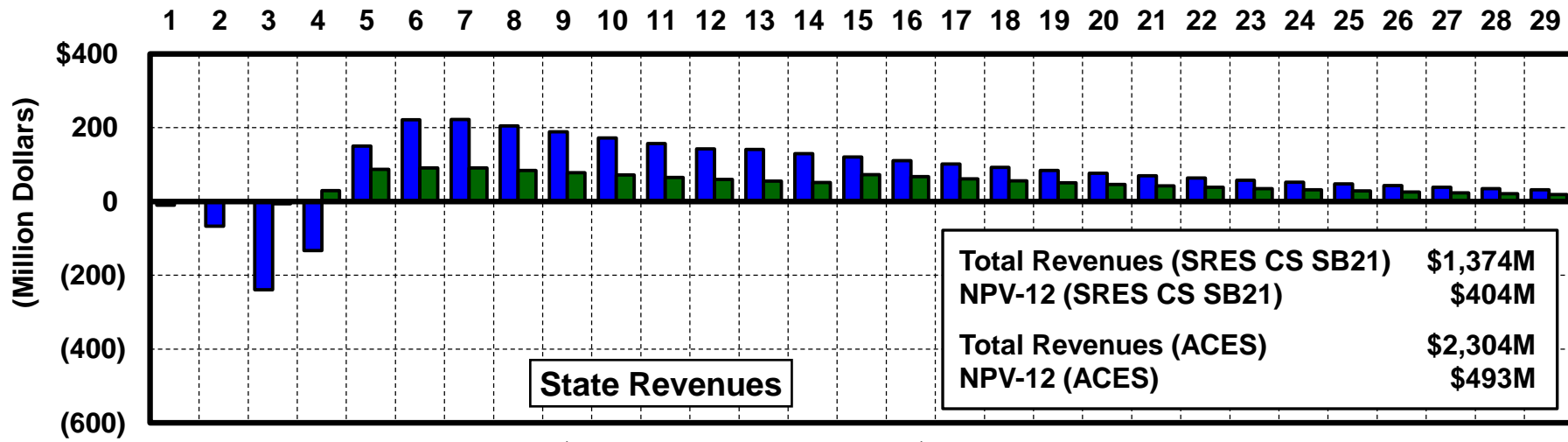
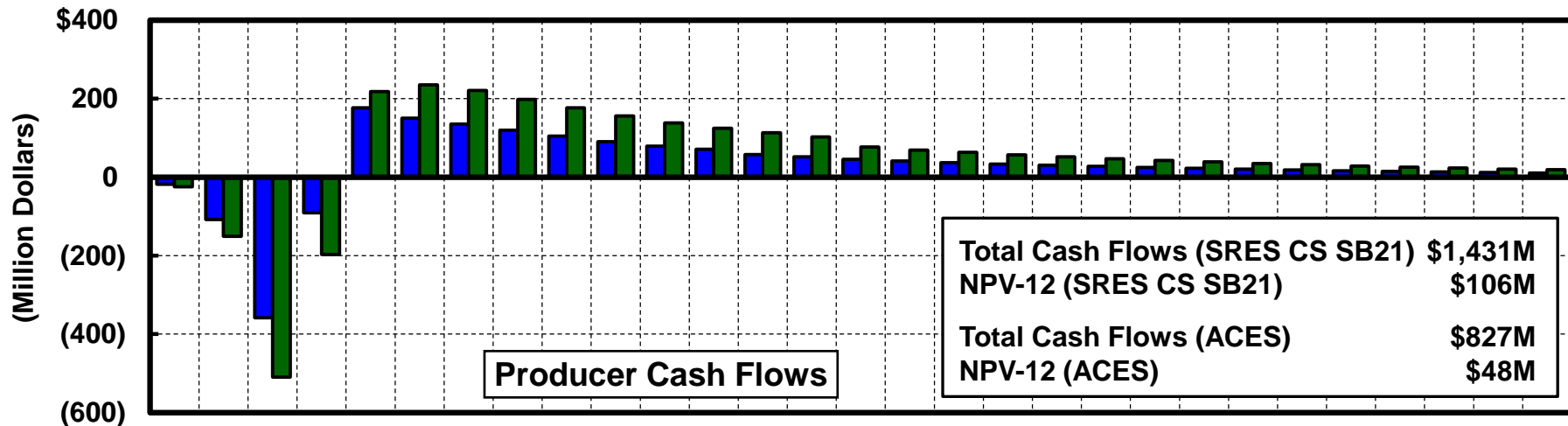


# Annual State Revenues and Producer Cash Flows at \$100 West Coast ANS (\$2012)

## Higher Cost Oil Alaska Development

### New Participant in Alaska

ACES █ SRES CS SB21 █



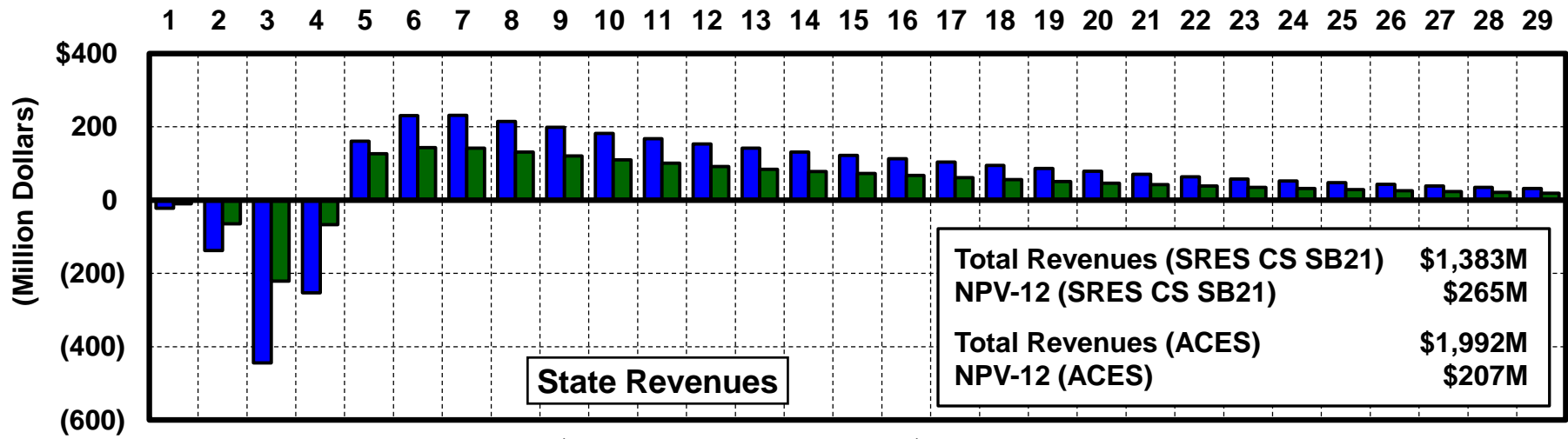
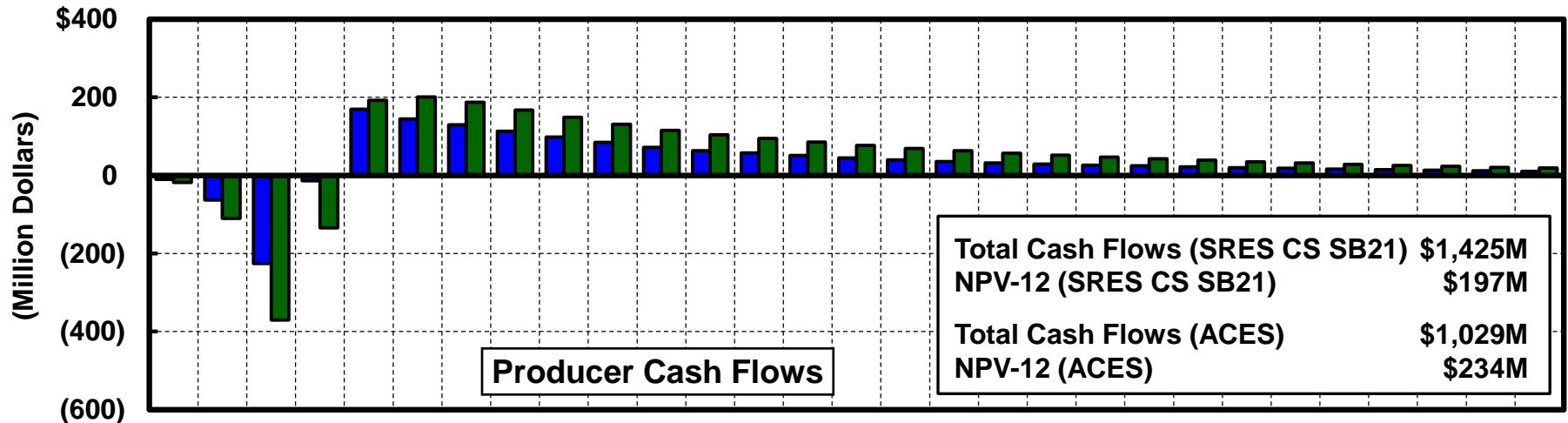
Higher Cost: \$25 Per Barrel Development Capex and \$14 Per Barrel Opex

# Annual State Revenues and Producer Cash Flows at \$100 West Coast ANS (\$2012)

## Higher Cost Oil Alaska Development

### Incumbent Participant in Alaska

ACES █ SRES CS SB21 █



Higher Cost: \$25 Per Barrel Development Capex and \$14 Per Barrel Opex