



State of Alaska Department of Revenue

Oil and Gas Fiscal Competitiveness and Alaska

October 15, 2014

Tim Ryherd
Commercial Analyst
Alaska Department of Revenue



Tim Ryherd – Education/Work History

➤ Education

- M.S. Geology – University of Alaska-Fairbanks
- B.S. Geology – Iowa State University

➤ SOA Work History (Departments of Revenue & Natural Resources)

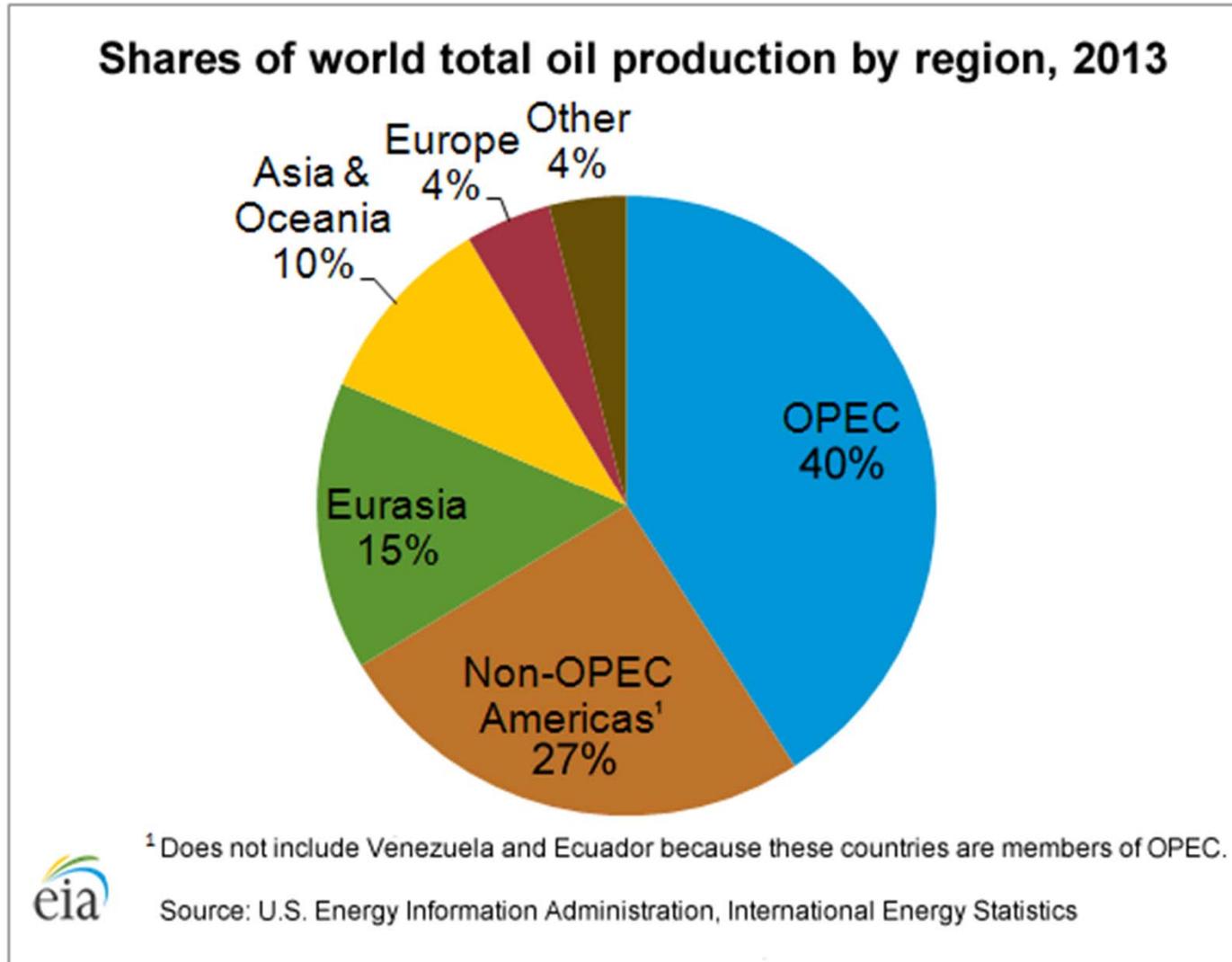
- Commercial Analyst, DOR Tax Division, 4 years (2011 – current)
 - ❖ Fiscal regime analyses & comparisons, TAPS low-flow analysis , Cook Inlet taxes and credits
- Commercial Analyst, DNR Oil & Gas Division, 7 years (2004 – 2011)
 - ❖ Analyze economics and negotiate royalty modification terms - Oooguruk & Nikaitchuk fields
 - ❖ Analyze economics of Alaska's oil and gas projects (conventional and shale oil), analyze lease contract terms, advise on lease sale terms
- Geologist, DNR Oil & Gas Division, 15 years (1989 – 2004)
 - ❖ Petroleum geology and fieldwork - North Slope, Cook Inlet, and other Alaska sedimentary basins
 - ❖ Well log, seismic and subsurface data management, interpretation, and analysis
 - ❖ Unit management and general land management support

Global Supply

Where is the world getting its oil?

Where will we get oil in the future?

World Production by Region (EIA)



Source: EIA, 2014, Who are the major players supplying the world oil market?; http://www.eia.gov/energy_in_brief/article/world_oil_market.cfm

Top 15 Oil Producing Countries – 2013 (EIA)

- Big drop from Rank 1-3 to 4-15
- Top 15 producing countries make up over 77% of total global production in 2013

2013 Rank	Country Name	2013 Production Volume [Bbls./Day]	2013 Share of World Production – 2013 [%]
1	United States	12,312	13.7%
2	Saudi Arabia	11,592	12.9%
3	Russia	10,534	11.7%
4	China	4,459	5.0%
5	Canada	4,073	4.5%
6	United Arab Emirates	3,230	3.6%
7	Iran	3,192	3.5%
8	Iraq	3,058	3.4%
9	Mexico	2,908	3.2%
10	Kuwait	2,812	3.1%
11	Brazil	2,710	3.0%
12	Venezuela	2,489	2.8%
13	Nigeria	2,372	2.6%
14	Qatar	2,067	2.3%
15	Angola	1,889	2.1%

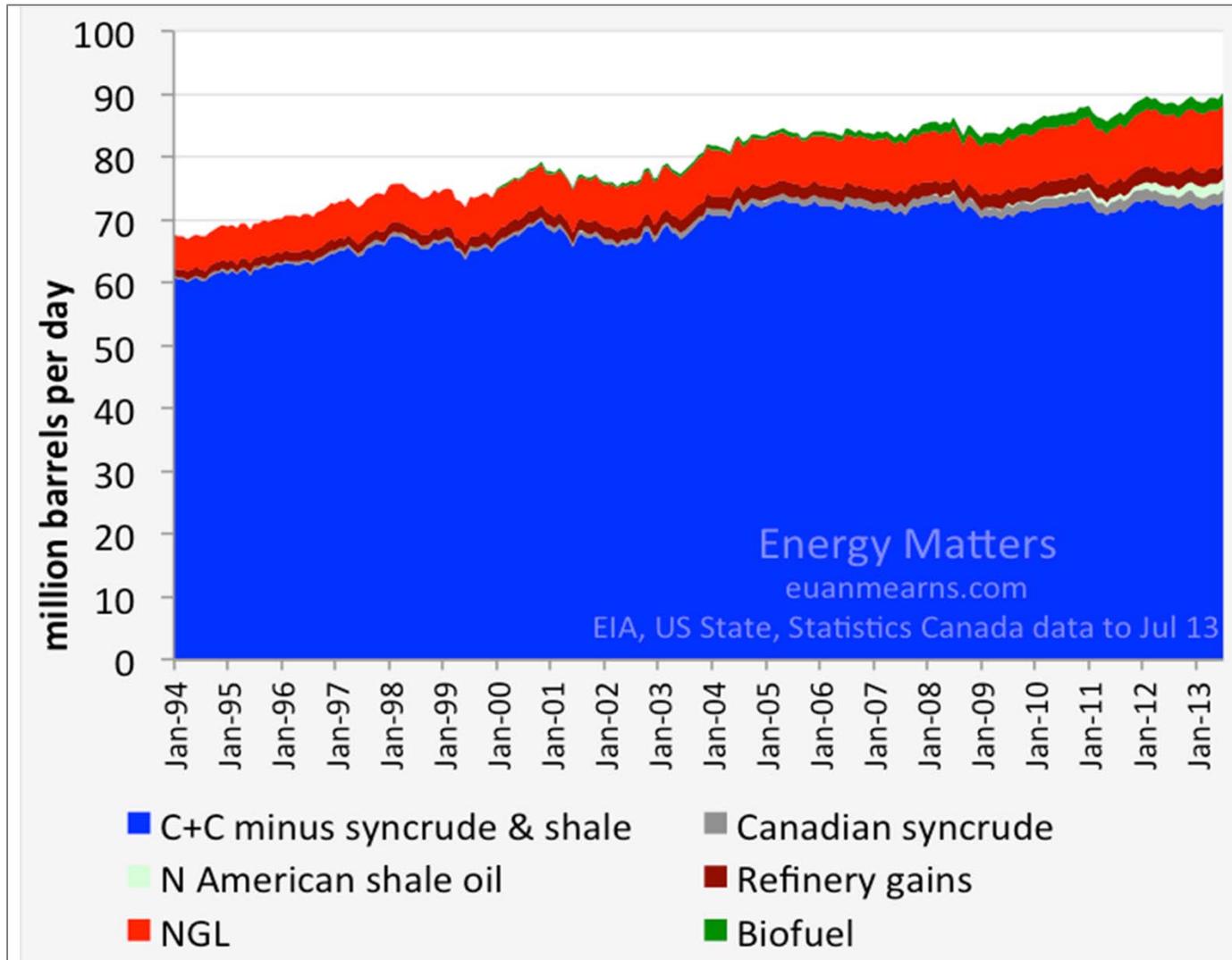
Source: EIA, 2014; <http://www.eia.gov/cfapps/ipdbproject/IEDIndex3.cfm?tid=5&pid=53&aid=1>

Top 10 NOC and Selected IOC Companies – Ranked by 2013 Oil Production

Production Rank 2013	Company Name	Country (Headquarters)	2013 Global Liquids Production [MMBbl]	2012 Global Liquids Production [MMBbl]	2011 Global Liquids Production [MMBbl]	2010 Global Liquids Production [MMBbl]	2013 Global Liquids Reserves [MMBbl]	2013 Reserves to Production Ratio
1	Saudi Arabian Oil Co.	Saudi Arabia	3,431.0	3,577.0	3,394.5	2,920.0	265,850	77
2	AO Rosneft	Russia	1,634.5	963.8	868.6	847.4	24,805	15
3	Iraq National Oil Co.	Iraq	1,177.4	1,051.2	902.6	861.4	140,300	119
4	National Iranian Oil Co.	Iran	1,095.0	1,114.3	1,306.3	1,350.5	157,300	144
5	Kuwait Petroleum Corp.	Kuwait	935.1	1,004.8	913.6	741.0	101,500	109
6	PetroChina Co. Ltd.	China	932.9	916.5	886.1	858.0	10,820	12
7	Abu Dhabi National Oil Co.	Abu Dhabi	928.4	912.5	857.8	789.1	92,200	99
8	Petroleos Mexicanos	Mexico	920.6	949.1	949.0	957.0	9,812	11
9	Petroleos de Venezuela SA	Venezuela	904.8	908.5	911.8	814.0	297,740	329
10	Petroleo Brasileiro SA	Brazil	750.4	776.0	741.0	783.3	10,658	14
11	BP PLC	U.K.	734.7	750.4	787.3	866.0	10,243	14
15	ExxonMobil Corp.	USA	616.0	625.0	662.0	709.0	11,280	18
16	Chevron Corp.	USA	514.0	536.0	676.0	702.0	4,303	8
17	Royal Dutch Shell	Netherlands	509.5	543.1	560.6	590.9	4,468	9
20	Total SA	France	426.0	445.3	447.5	489.1	5,413	13
26	ConocoPhillips	USA	268.0	271.0	274.0	318.0	3,358	13

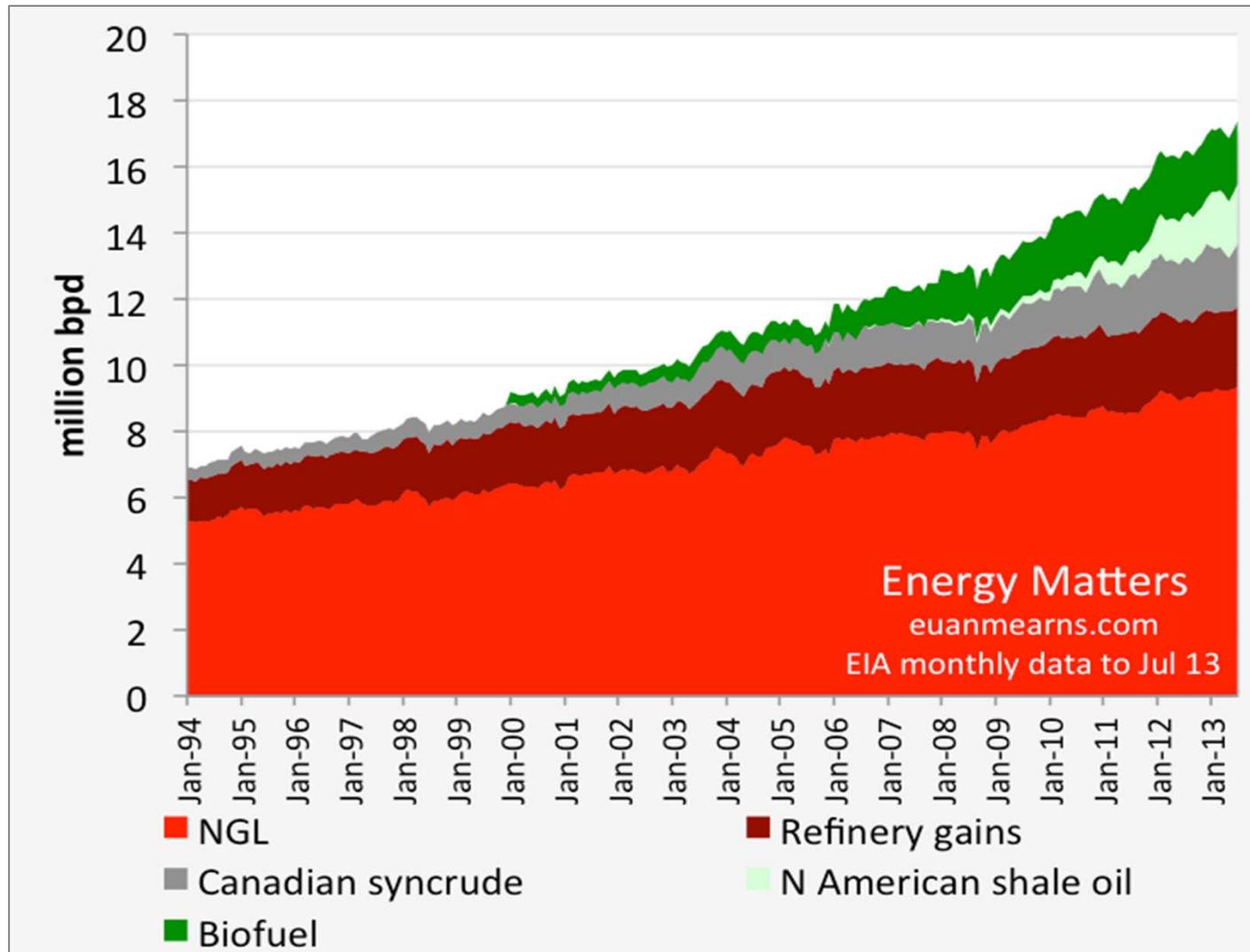
Source: Oil and Gas Journal., 2014 (and prior years); <http://www.ogj.com/articles/print/volume-112/issue-9/special-report-ogj-150-100/ogj100-group-posts-lower-2013-earnings.html>

Global Total Liquids Production



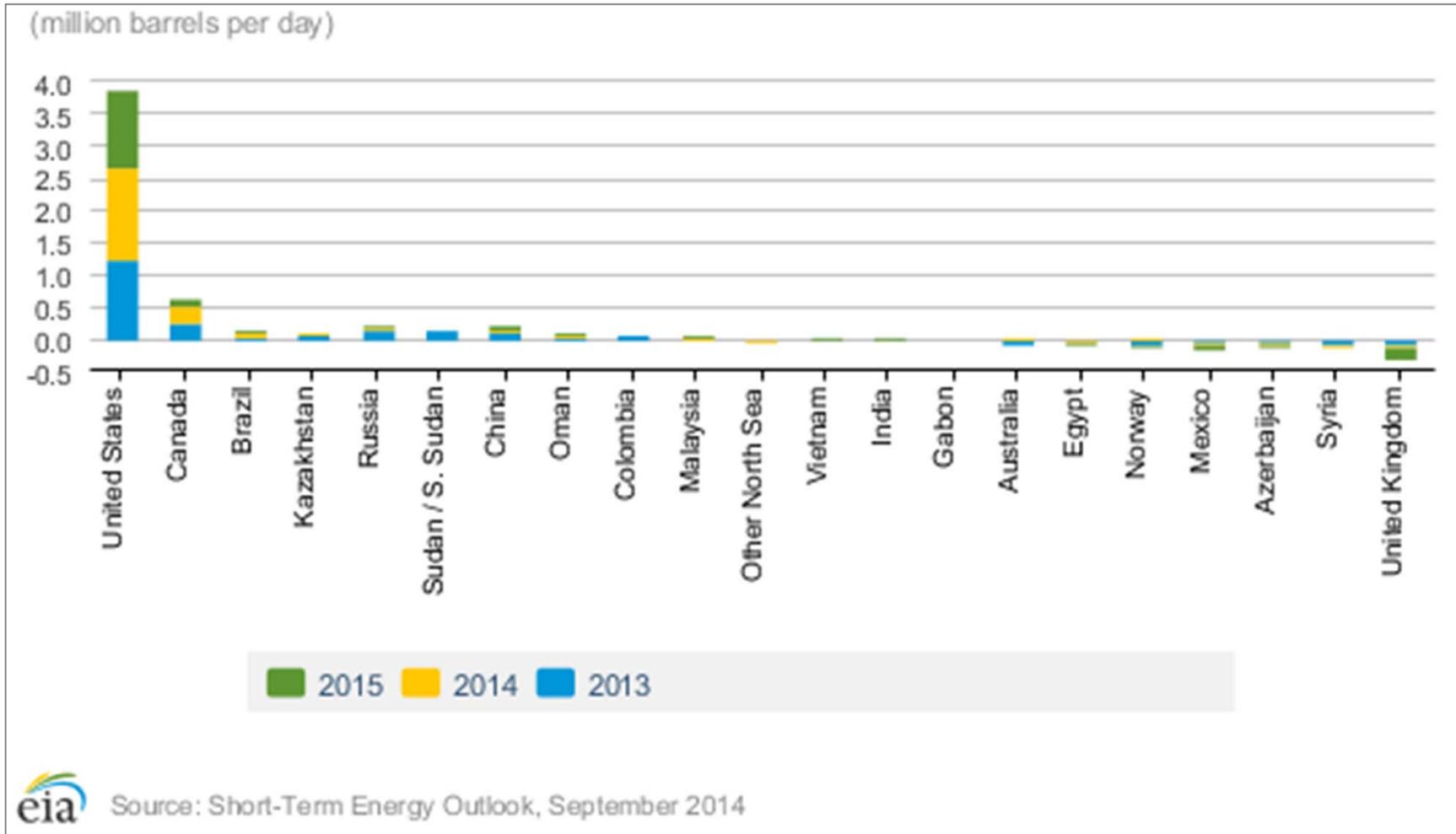
Source: Euan Means, Energy Matters, 2013; <http://euanmearns.com/global-oil-supply-update-july-2013/>

Global Liquids Production Excluding Crude and Condensate



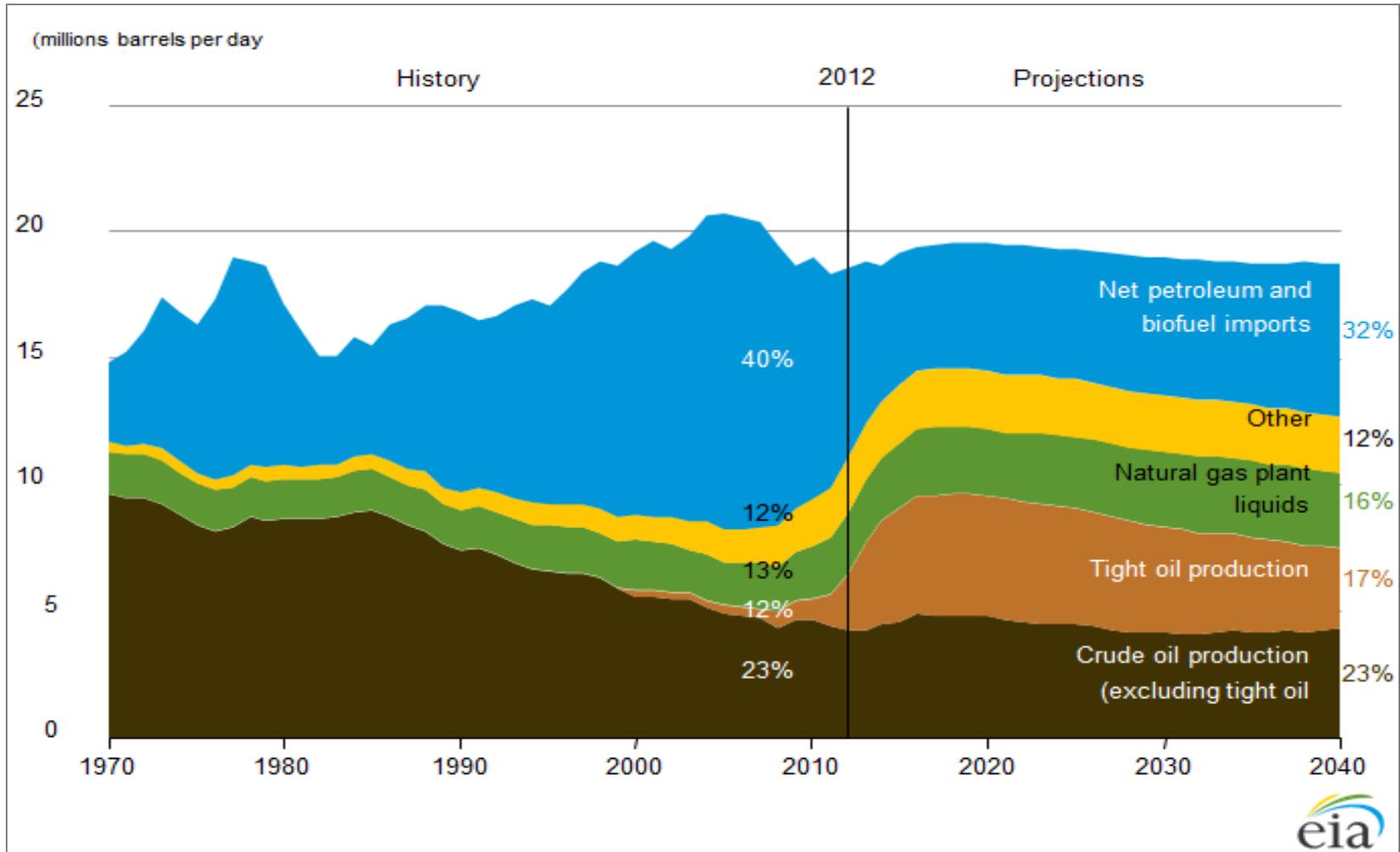
Source: Euan Means, Energy Matters, 2013; <http://euanmearns.com/global-oil-supply-update-july-2013/>

Non-OPEC Crude Oil and Liquid Fuels Production Growth Forecast (EIA)



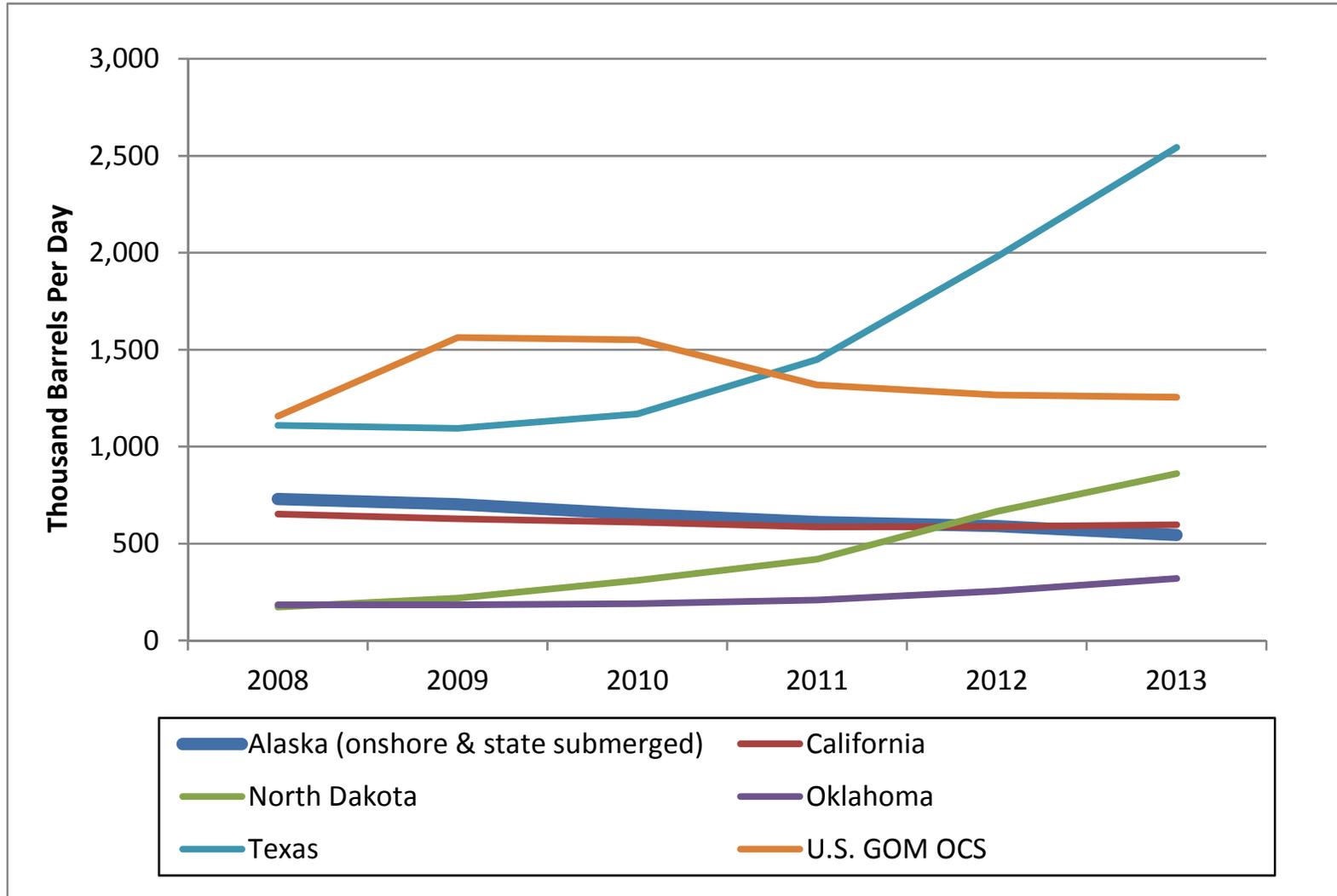
Source: EIA 2014, Short-term energy outlook; http://www.eia.gov/forecasts/steo/report/global_oil.cfm

U.S. Petroleum and Liquid Fuels Supply, by source, 1970 - 2040 (EIA)



Source: EIA, Annual Energy Outlook (AEO), 2014; [http://www.eia.gov/forecasts/aeo/er/pdf/0383er\(2014\).pdf](http://www.eia.gov/forecasts/aeo/er/pdf/0383er(2014).pdf)

Five States and the U.S. Gulf of Mexico Produce 80% of U.S. Crude Oil in 2013 (EIA)



Source: EIA 2014, Five states and the Gulf of Mexico produce more than 80% of U.S. crude oil ; <http://www.eia.gov/todayinenergy/detail.cfm?id=15631#>

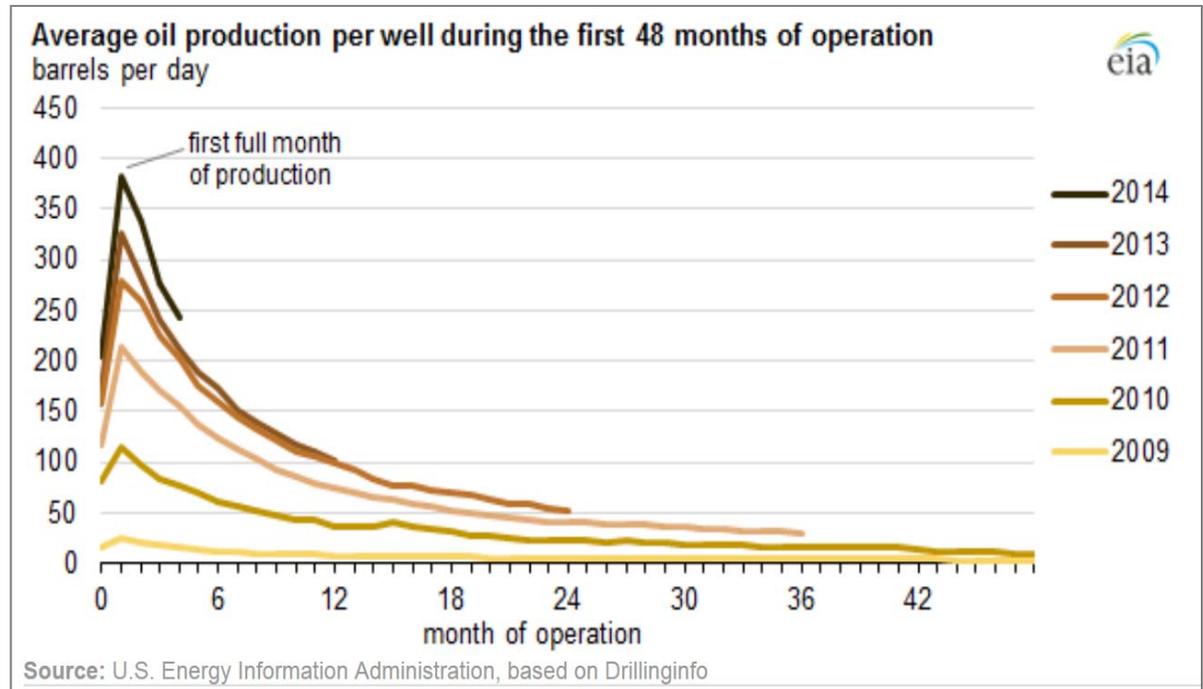
Statistics and Characteristics of Tight-Oil Producing Formations

	Bakken	Eagle Ford	Niobrara	Avalon and Bone Spring	Monterey	All Plays
State	ND, MT	TX	KS, CO, WY	TX	CA	
Production start-up	2000	2008	2010	2009	2009	
Area [sq. mi.]	6,520	2,200	20,300	1,310	1,750	
Depth [feet]	3,100 - 11,000	2,500 - 15,000	3,000 - 14,000	6,000 - 13,000	8,000 - 14,000	
Thickness [feet]	75 - 130	50 - 350	200 - 400	900 - 1,700	1,000 - 3,000	
Well spacing/sq. mi.	2	5	8	4	12	
Output [bbls./day]	375,000	125,000	32,000	22,000	10,000	620,000
Original oil-in-place [billion bbl.]	413.0	300.0	500.0	130.0	500.0	3,500.0
Estimated recoverable oil [billion bbl.]	5.00	3.00	7.00	1.60	14.00	33.00
Recovery factor [%]	1.2	1.0	1.4	1.2	2.8	~1.0
Cumulative production [billion bbl.]	0.430	0.060	0.030	-	-	0.590
Estimated production potential [1,000 bbl./day]	815	565	1,030	360	1,685	4,455
Well EUR [1,000 bbl.]	550	280	125 - 250	300	500	125 - 550
Well costs [\$million]	5.5 - 8.5	4 - 6.5	3.5 - 5.5	3 - 5	5 - 7	3 - 8.5

Source: Oil and Gas Journal, 2012, Evaluating production potential of mature US oil, gas shale plays; <http://www.ogj.com/articles/print/vol-110/issue-12/exploration-development/evaluating-production-potential-of-mature-us-oil.html>

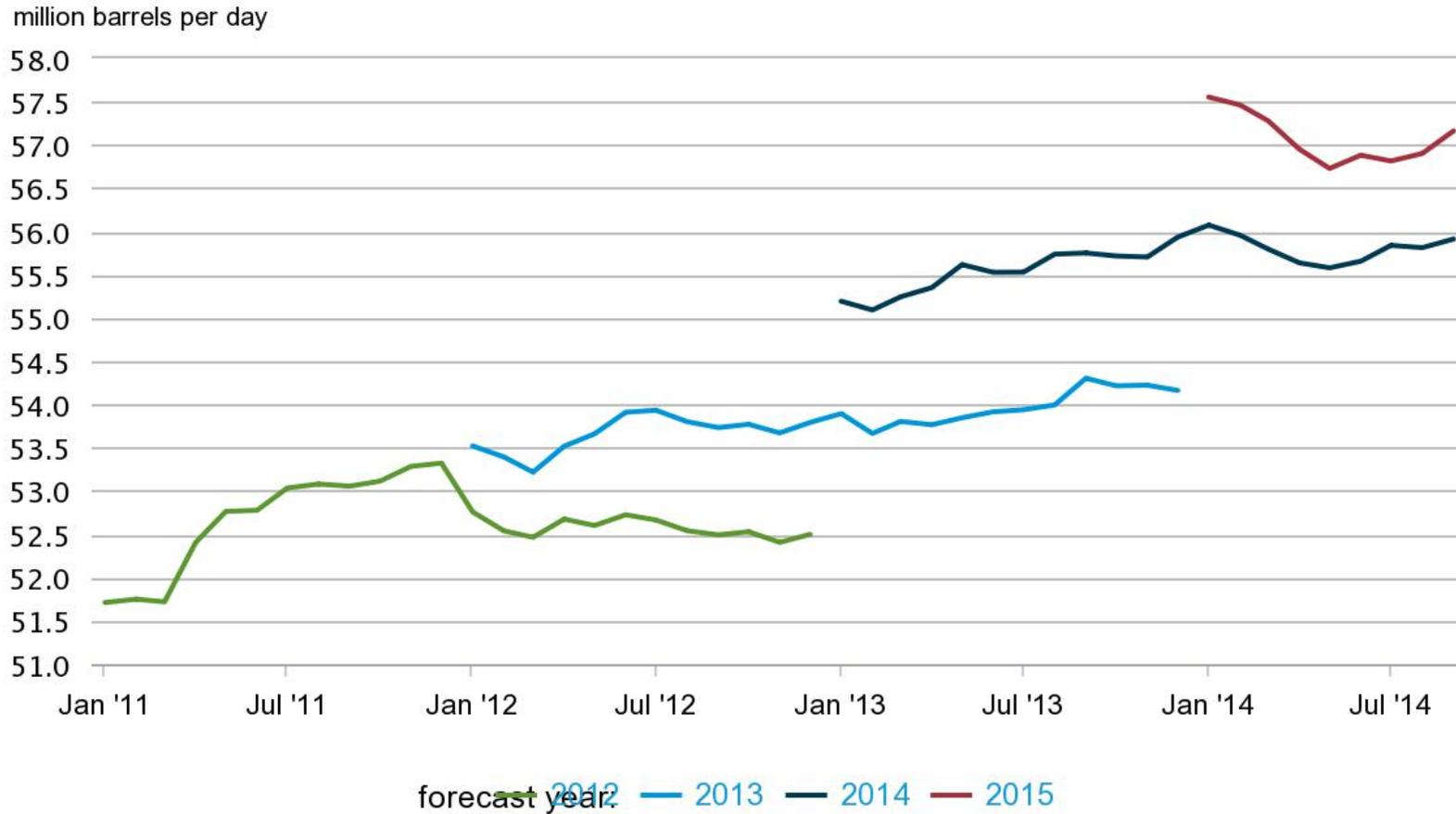
Evolution of Average Estimated Ultimate Recovery (EUR), Initial Production (IP) and Decline Curves for Eagle Ford Fm. Wells (EIA)

Vintage Year	Number of Wells	Average EUR [1,000 bbls.]
2008	33	36
2009	75	57
2010	514	117
2011	1,627	153
2012	2,717	191
2013	418	169
All Years	5,384	168



Source: Average estimated ultimate recovery (EUR) for wells in the Eagle Ford Formation starting production between January 2008 and June 2013 and with at least four months of production data: U.S. Energy Information Administration.

Projected Non-OPEC Liquids Production, Annual Expectations (EIA)

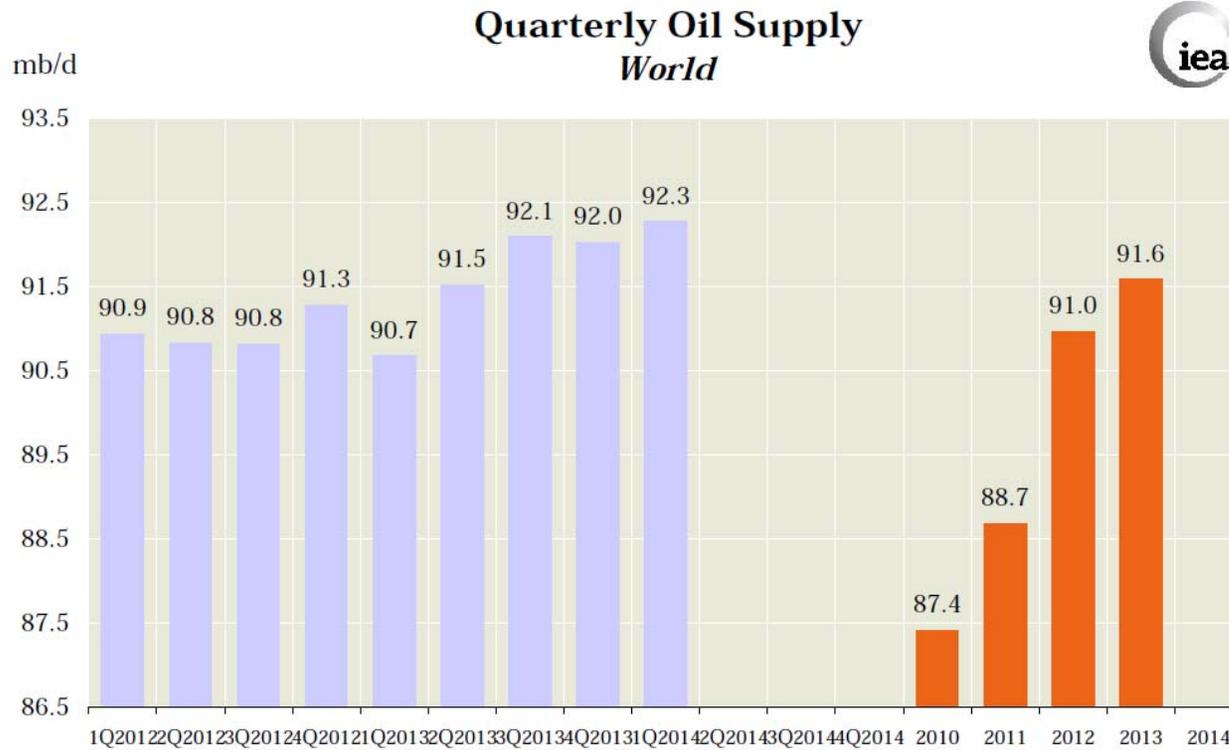


Source: U.S. Energy Information Administration, Short Term Energy Outlook.
 Updated: Monthly | Last Updated: 09/09/2014

Global Oil Supply

IEA Oil Market Report - 11 April 2014 © OECD/IEA 2014

Omr on the web: www.oilmarketreport.org

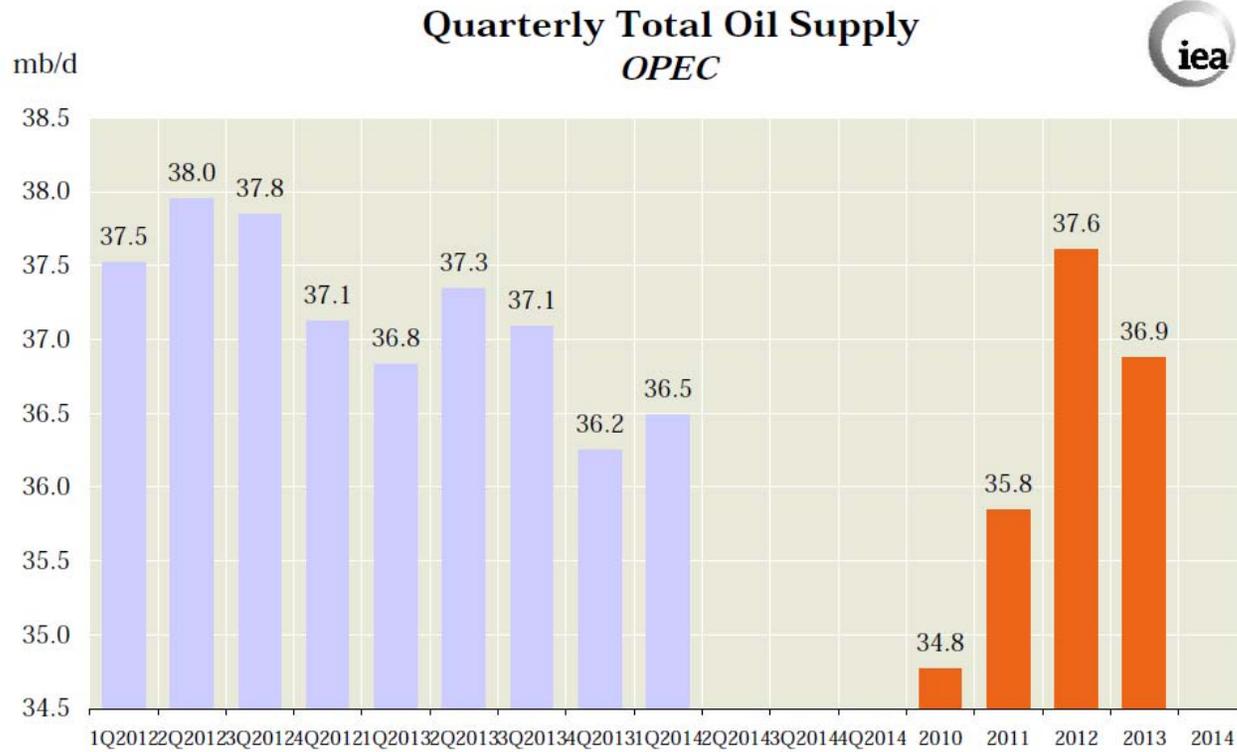


Source: international Energy Agency (IEA), Oil Market Report, 2014; <http://omrpublic.iea.org/balances.asp>, http://omrpublic.iea.org/world/wb_wosup.pdf

Global Oil Supply – OPEC

IEA Oil Market Report - 11 April 2014 © OECD/IEA 2014

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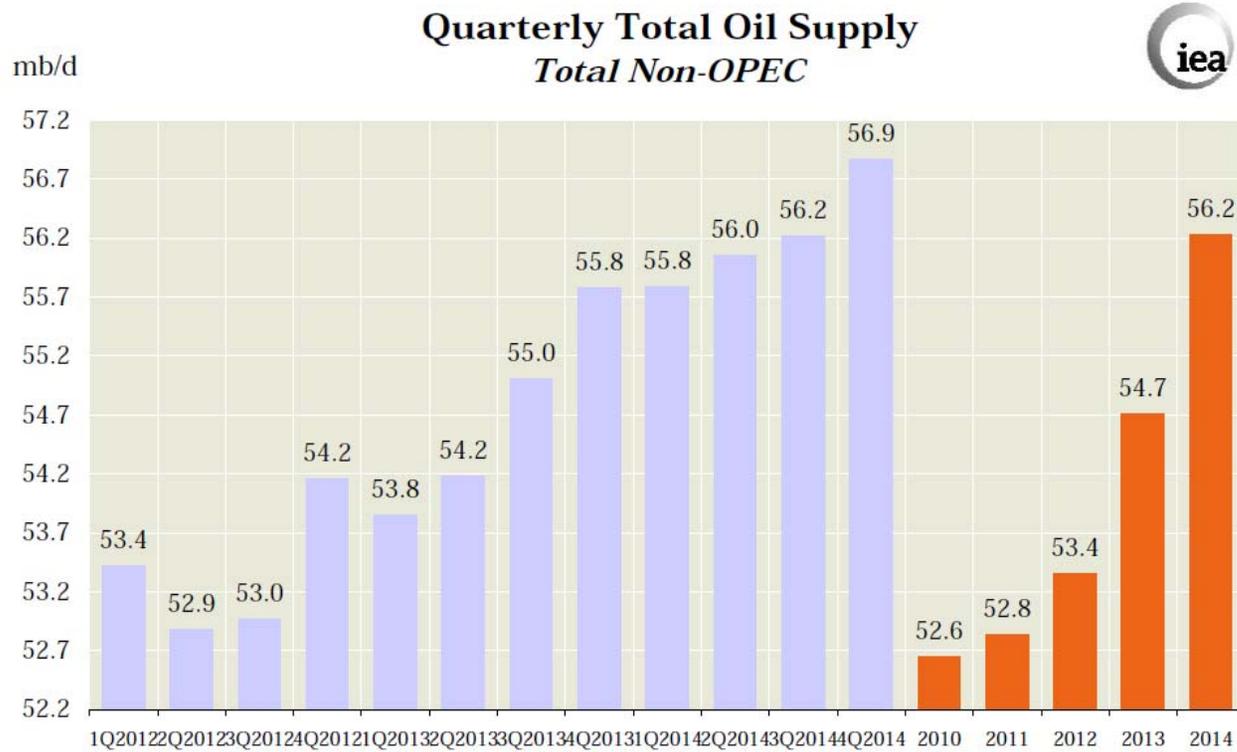


Source: international Energy Agency (IEA), Oil Market Report, 2014; <http://omrpublic.iea.org/balances.asp>, http://omrpublic.iea.org/world/wb_optot.pdf

Global Oil Supply – Non-OPEC

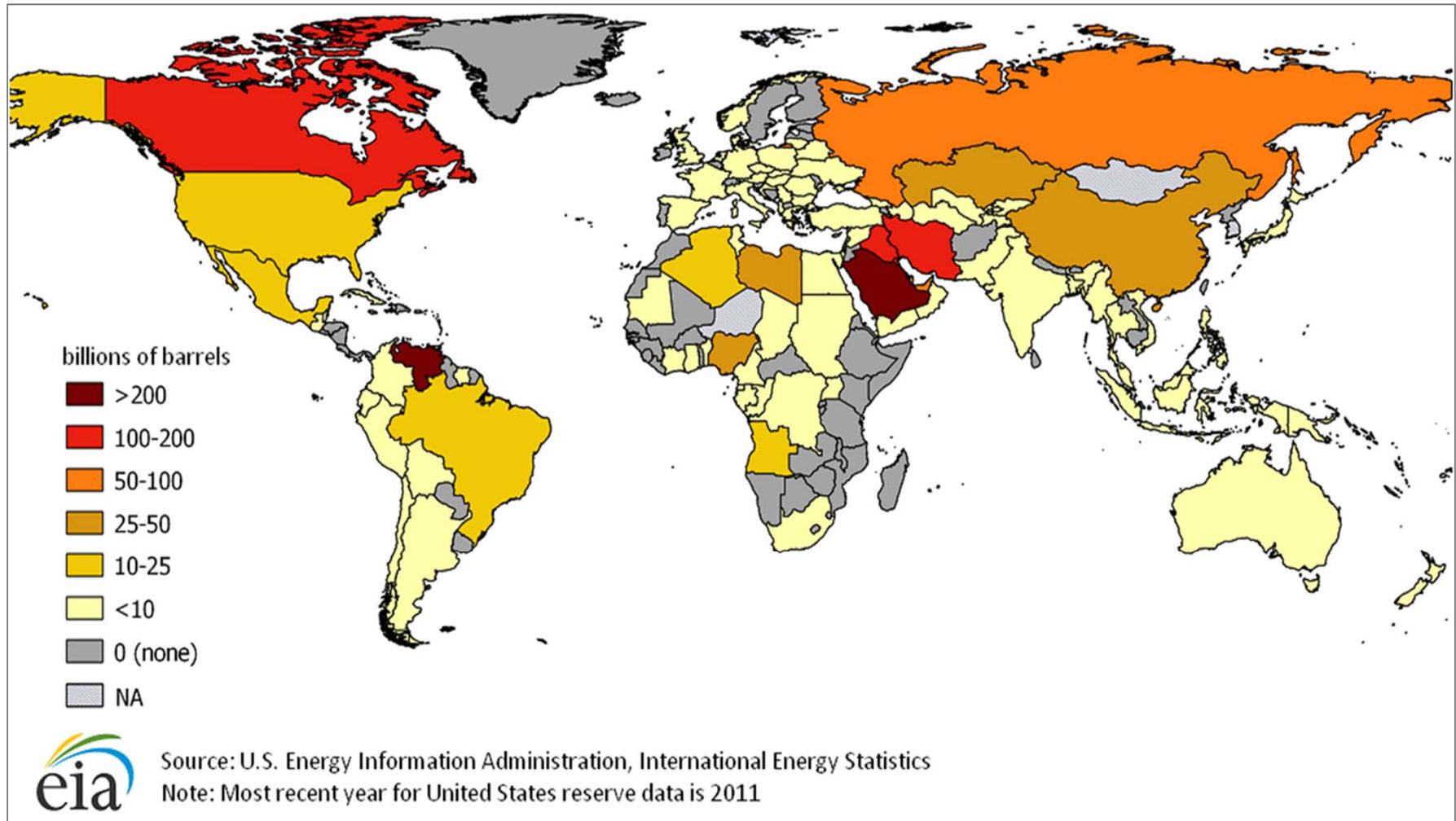
IEA Oil Market Report - 11 April 2014 © OECD/IEA 2014

Omr on the web: www.oilmarketreport.org



Source: international Energy Agency (IEA), Oil Market Report, 2014; <http://omrpublic.iea.org/balances.asp>, http://omrpublic.iea.org/world/wb_nnsup.pdf

World Proved Crude Oil Reserves (EIA)



Source: EIA, 2014, Who are the major players supplying the world oil market?; http://www.eia.gov/energy_in_brief/article/world_oil_market.cfm

Technology Improvements Continuously Improve Economics of Global Supply

Reaching Deeper

Some of the innovations that have enabled oil output to increase almost continuously since the industry's dawn



1909 ▲ | Roller-cone drill bits are introduced, shortening time required to drill a well.

1929 | Directional drilling creates ability to point wells in a general direction.

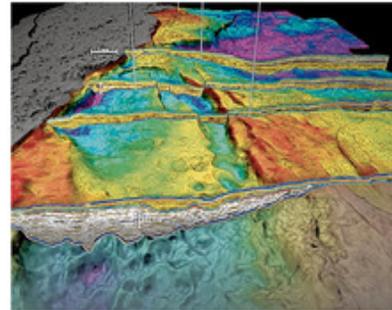
1941 | A horizontal well, which begins vertically and then turns to run horizontally underground, is drilled in Azerbaijan.



1946 | Researchers successfully "frack" a well in southwestern Kansas. Within a few years, hydraulic-fracturing technology will be commercially available.

1949 ▲ | Offshore drilling begins in the shallows of the Gulf of Mexico.

1959 | Halliburton invents high-temperature cement, allowing wells to reach deeper.



1970 ▲ | Seismic imaging technology is used by Shell and Mobil to find "bright spots" deep under the Gulf of Mexico that indicate oil deposits.

1982 | 3-D seismic imaging is introduced, vastly improving the industry's ability to locate oil deposits.



1984 ▲ | The first "steerable" drilling system is introduced, allowing for far more precision than older directional drilling.

1998 | BP drills a horizontal well that extends more than six miles in southern England. In 2011, Exxon will beat the record with a 7.7 mile "extended reach" well off Sakhalin Island, Russia.

Sources: Society of Petroleum Engineers; "The Boom" (1946 item); Photos from left: Getty Images, Corbis, Statoil, Schlumberger

Source: WSJ, Sept. 29, 2014, Why Peak-Oil Predictions haven't come True; <http://online.wsj.com/articles/why-peak-oil-predictions-haven-t-come-true-1411937788?KEYWORDS=PEAK+OIL>

Competitiveness

How should we assess
Alaska's competitiveness?

Duties of the Competitiveness Review Board (AS 43.98)

1. Establish and maintain salient oil and gas information and data
2. Review past, present and future oil and gas investment
3. Identify factors that affect oil and gas investment
4. Review the competitive position of Alaska relative to a peer group
5. Establish confidentiality procedures and confidential data access
6. Provide written findings (reports) to the Legislature
 - January 31, 2015 – statewide regulatory, permitting, labor pool, infrastructure, overall fiscal regime
 - January 2017 – taxes and incentives in Cook Inlet and areas south of 68°N latitude (provision added with SB 138 in 2014)
 - January 2021 – fiscal regime change recommendations, effectiveness of past fiscal regime elements

Salient Oil and Gas Information (Data) Types

Defining “salient” information and data types related to oil and gas is informed by other statutorily assigned duties of the Competitiveness Review Board

- Hydrocarbon endowment
 - Production
 - Reserves
 - Resource
- Investment data
- Fiscal regime elements and comparisons
- Leasing activity, lease terms
- Drilling activity
- Cost data
- Labor pool

Peer Group

- Establishing a peer group allows us to evaluate activity in Alaska compared to similar key criteria in similar oil producing jurisdictions/areas of the world
- No two producing areas are exactly alike
- Choose locations that share a number of key similarities
- Benchmark the North Slope against OECD oil producing countries
 - North Sea
 - USA's Federal lands and highest producing states
 - Canada's highest producing provinces
 - Australia

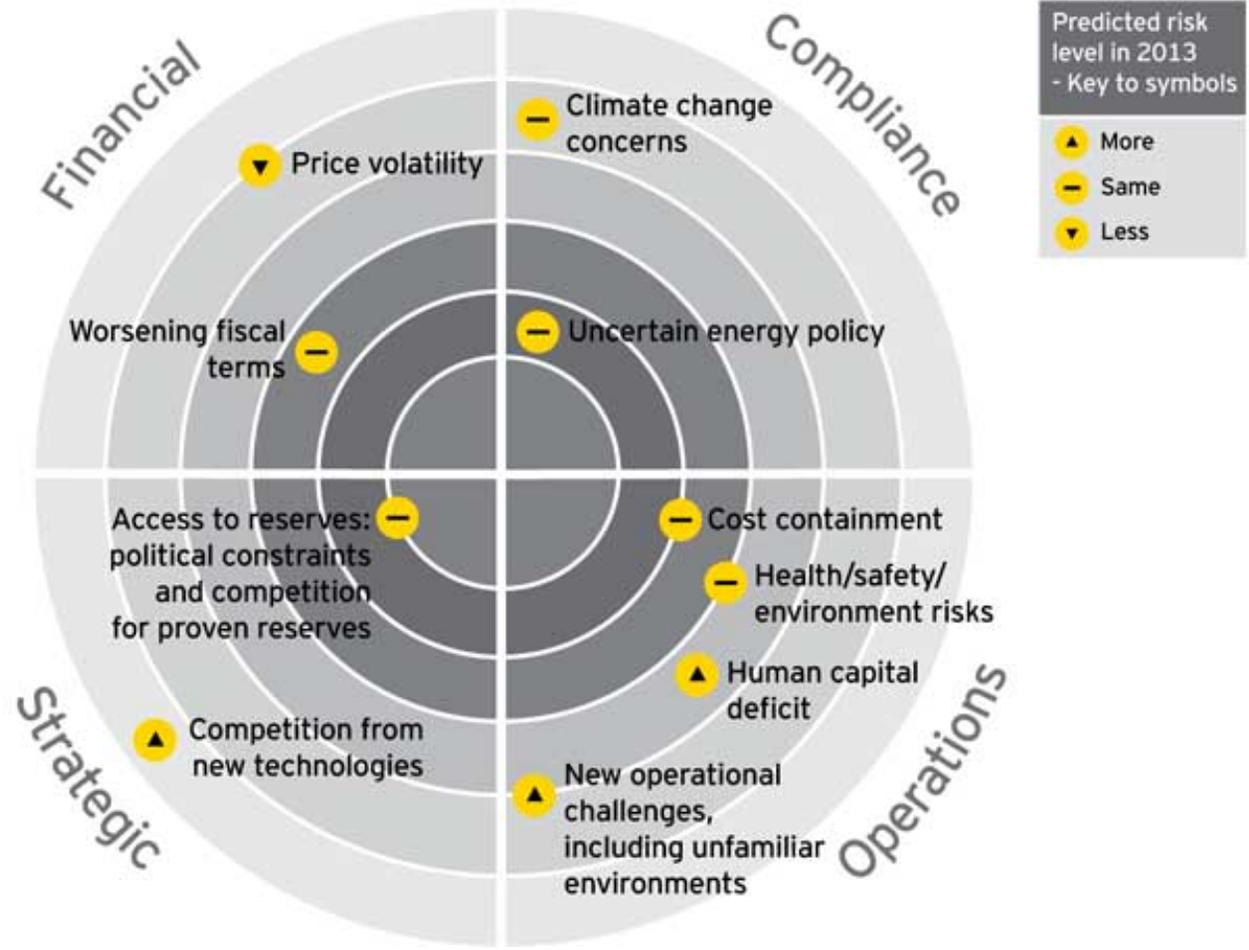
Peer Group

- All of these peer group areas have many characteristics in common with North Slope
- Similar political and legal structure / risk
- Significant prospectivity
- But, much of the “low-hanging” fruit has been produced
- Development of remaining resources are largely high-cost, whether conventional or unconventional
- Resources are developed in large part by the private sector

Factors Affecting Investment: Additional Risk Factors

- Access to reserves
 - Political constraints and competition for proven reserves
- Uncertain energy policy
 - Supply
 - Demand
- Cost containment/uncertainty
- Fiscal terms uncertainty
- Health, safety and environment risks
 - Climate change concerns
- Human capital deficit
- New operational challenges, including unfamiliar environments
- Competition from new technologies
- Price volatility
- Access to capital

Category and Level of Risk Factor



Source: Ernst & Young Global Limited, 2013; <http://www.ey.com/GL/en/Industries/Oil--Gas/Turn-risk-and-opportunities-into-results--oil-and-gas>

Factors Affecting Investment: Three Risky Inputs in Modeling Oil and Gas Project Economics

➤ Price

➤ Volume

➤ Costs

Crude Oil Prices are Volatile

Forecasting Price is Daunting

Monthly Commodity Futures Price Chart Light Crude Oil (NYMEX) TFC Commodity Charts

Month of: 09/30/2014 O=95.81 H=95.91 L=90.43 C=91.16 V=9730632



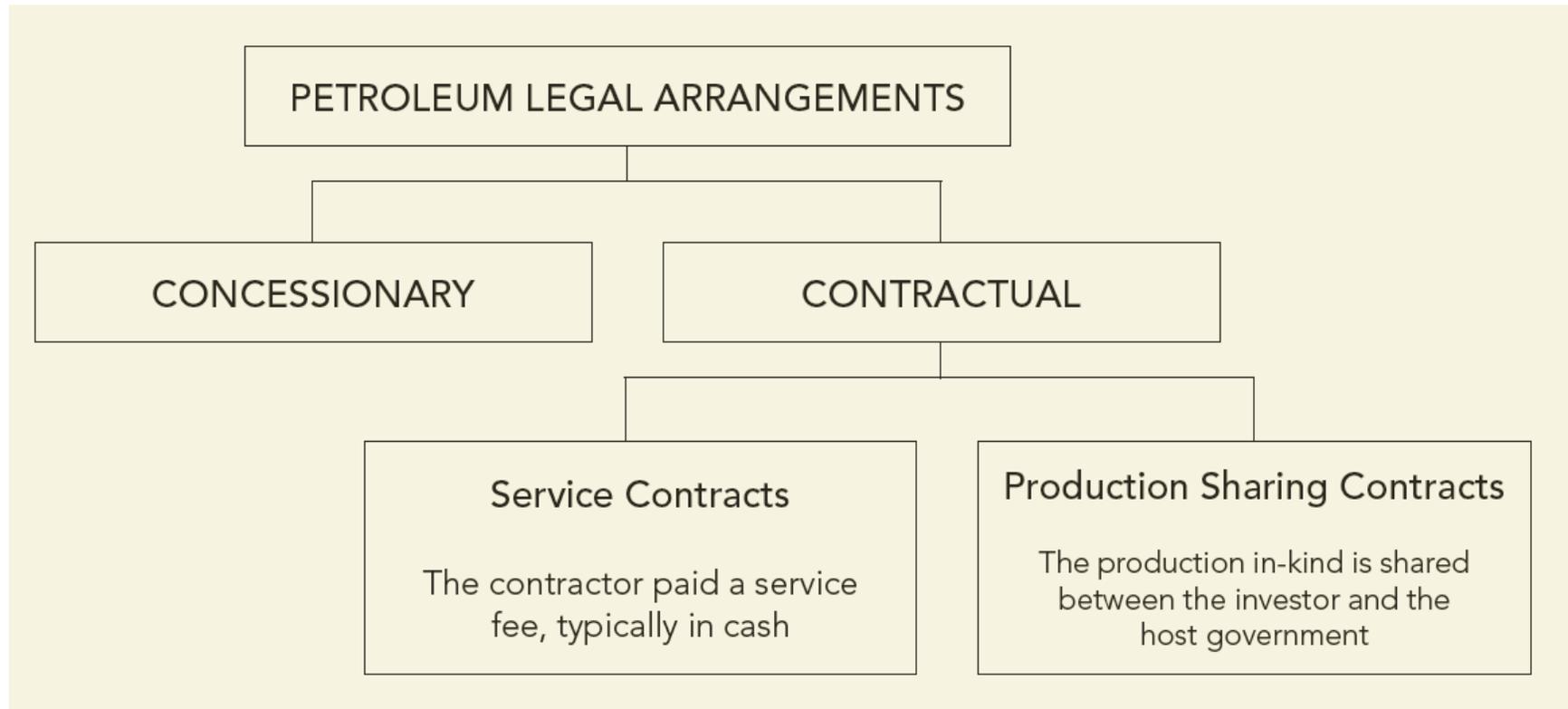
Factors Affecting Investment

- What is your perspective?
 - Explorer, developer, and producer (investor)
 - State of Alaska (royalty owner and taxing authority)
 - *Federal government (taxing authority)*

Investment Metrics

- Hydrocarbon resource size, distribution of possible outcomes
- Capital requirements, up-front investment risk
- Long-term cash flow, discounted cash flow, net present value (NPV)
- Expected monetary value (EMV)
- Rate-of-return (ROR, IRR)
- Return on capital employed (ROCE)
- Profitability Index (PI)
- Portfolio optimization, competitive position
- Political stability
- Others?

Petroleum Legal Arrangement Classification

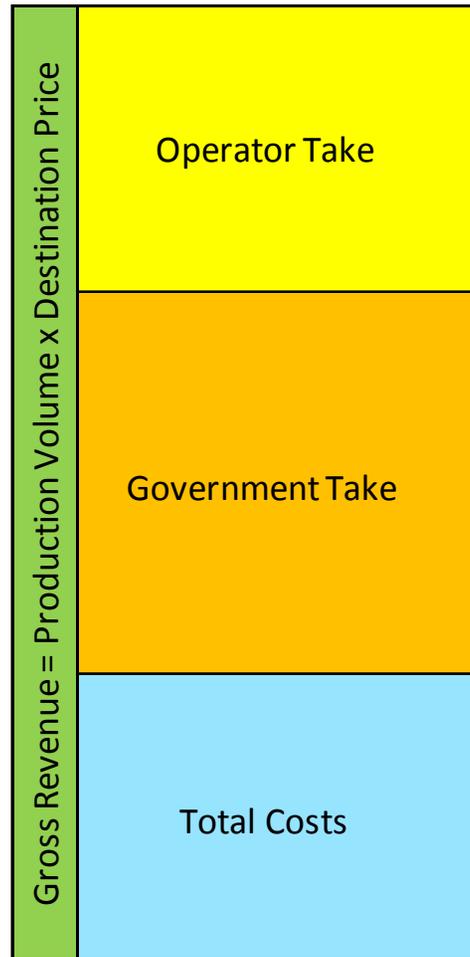


Fiscal Systems – Key Discussion Points

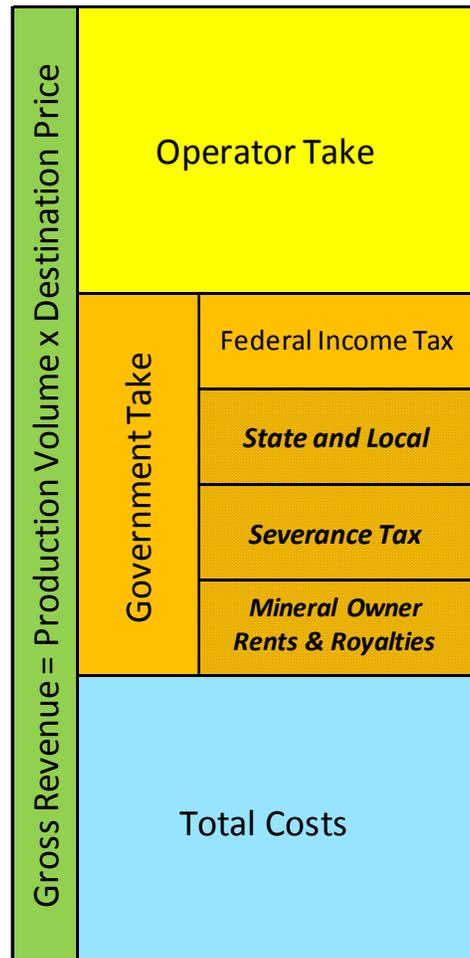
- Fiscal instrument features
 - Stand-alone
 - Incremental
- Fiscal system classification
- Nature of government take
- Level of government take

Breakdown of Government & Operator Take

Basic View



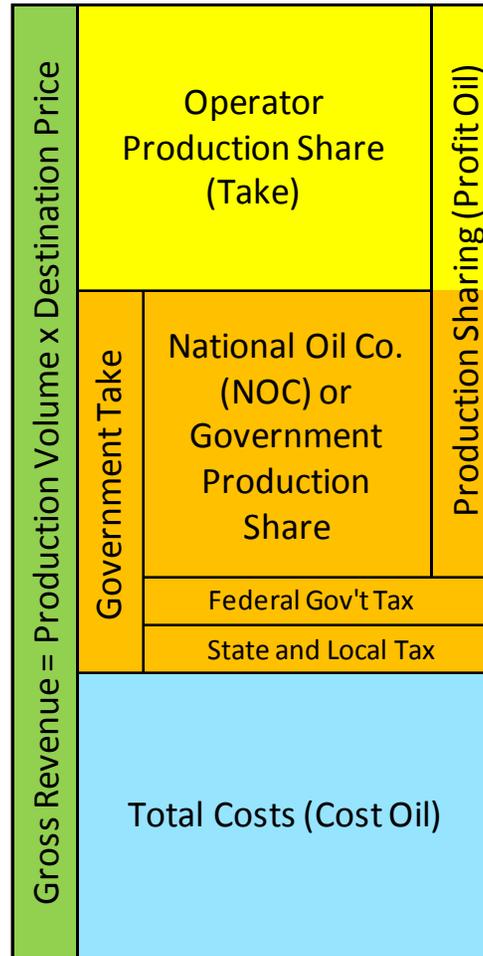
Breakdown of Government & Operator Take Concessionary (Tax & Royalty) System



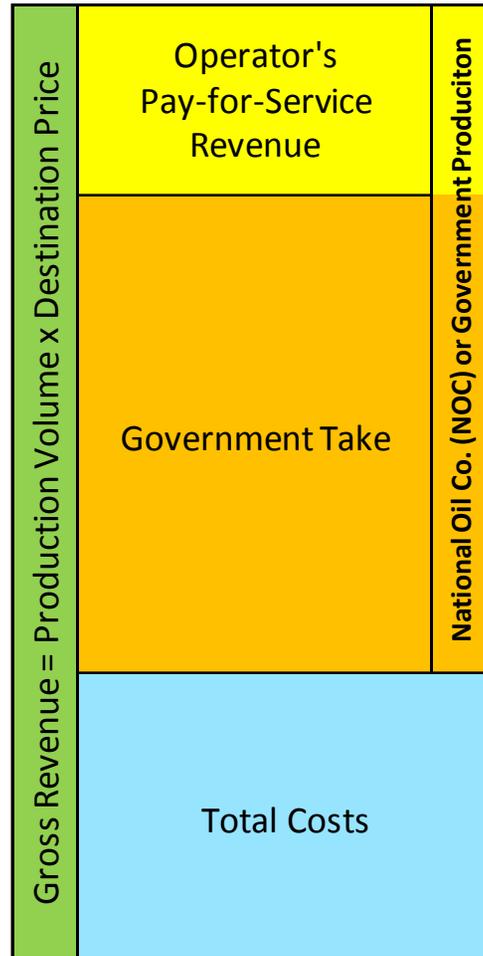
Elements of Concession Oil and Gas Fiscal System

- Lease Bonus and/or Bid
- Lease Rental
- Royalty
- Property Tax
- Production Tax/Severance Tax
 - Gross vs. net tax
- Corporate Income Tax
 - State
 - Federal (big impact, but state has little influence)

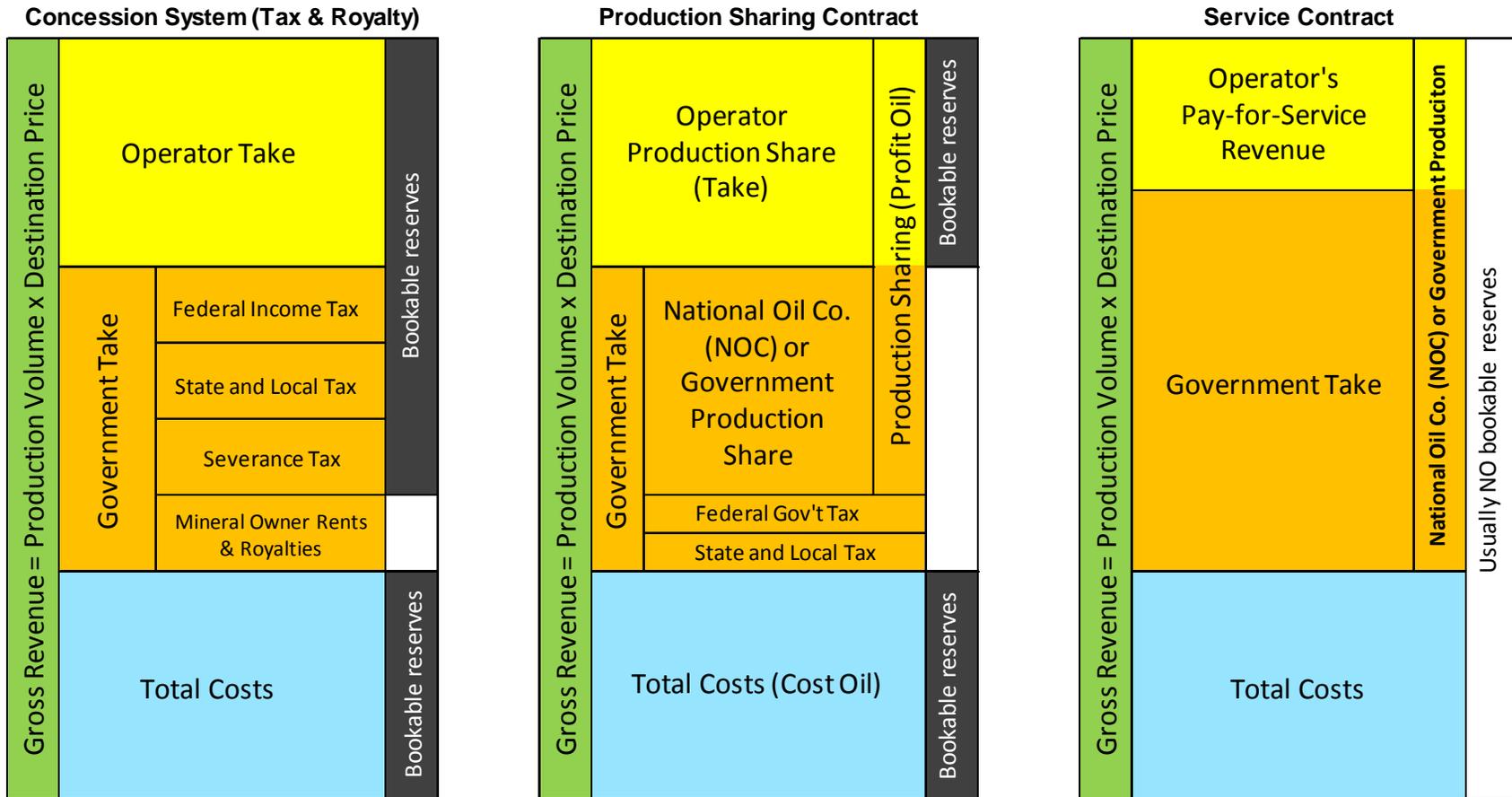
Breakdown of Government & Operator Take Production Sharing Contract



Breakdown of Government & Operator Take Service Contract



Bookable Reserves Under Different Fiscal Regimes SEC Rules for International Oil Companies (IOCs)



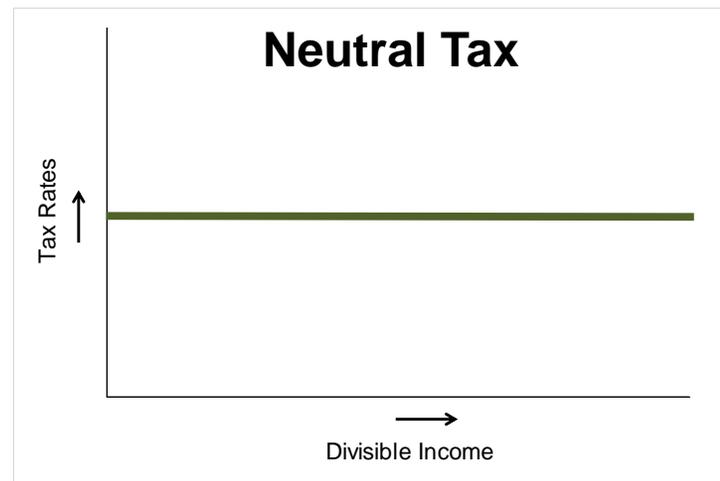
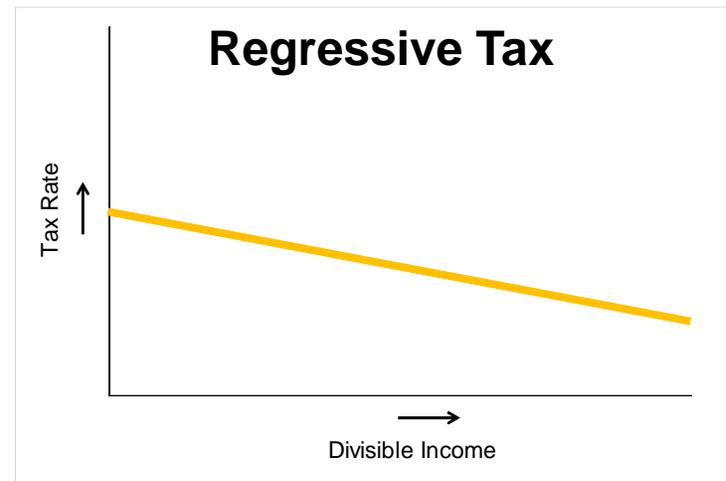
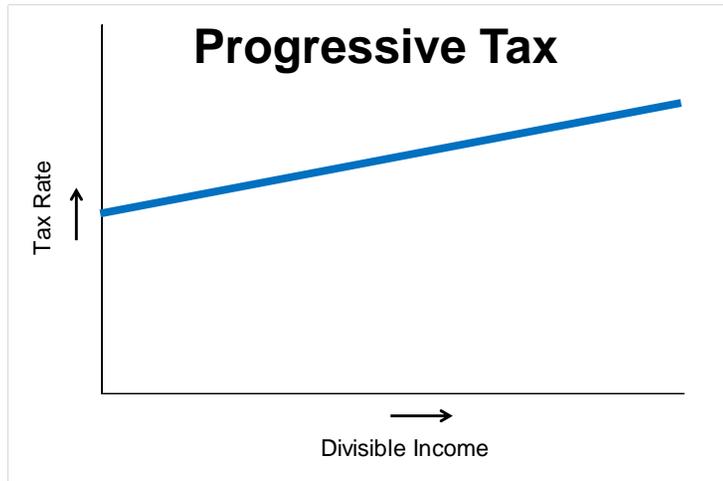
Fiscal Systems – Gross Production Tax Basic Calculation (example)

	10,000	volume produced in barrels
x	\$100	per barrel value at destination
	<hr/>	
	\$1,000,000	
-	\$100,000	royalty rate (10% example)
	<hr/>	
	\$900,000	GROSS revenue after royalty
x	10%	GROSS production tax rate (10% example)
	<hr/>	
	\$90,000	production tax owed

Fiscal Systems – Net Production Tax Basic Calculation (example)

	10,000	volume produced in barrels
x	\$100	per barrel value at destination
	<u>\$1,000,000</u>	
-	\$100,000	royalty rate (10% example)
	<u>\$900,000</u>	gross revenue after royalty
-	\$300,000	allowable costs
	<u>\$600,000</u>	NET revenue
x	10%	NET production tax rate (10% example)
	<u>\$60,000</u>	production tax owed

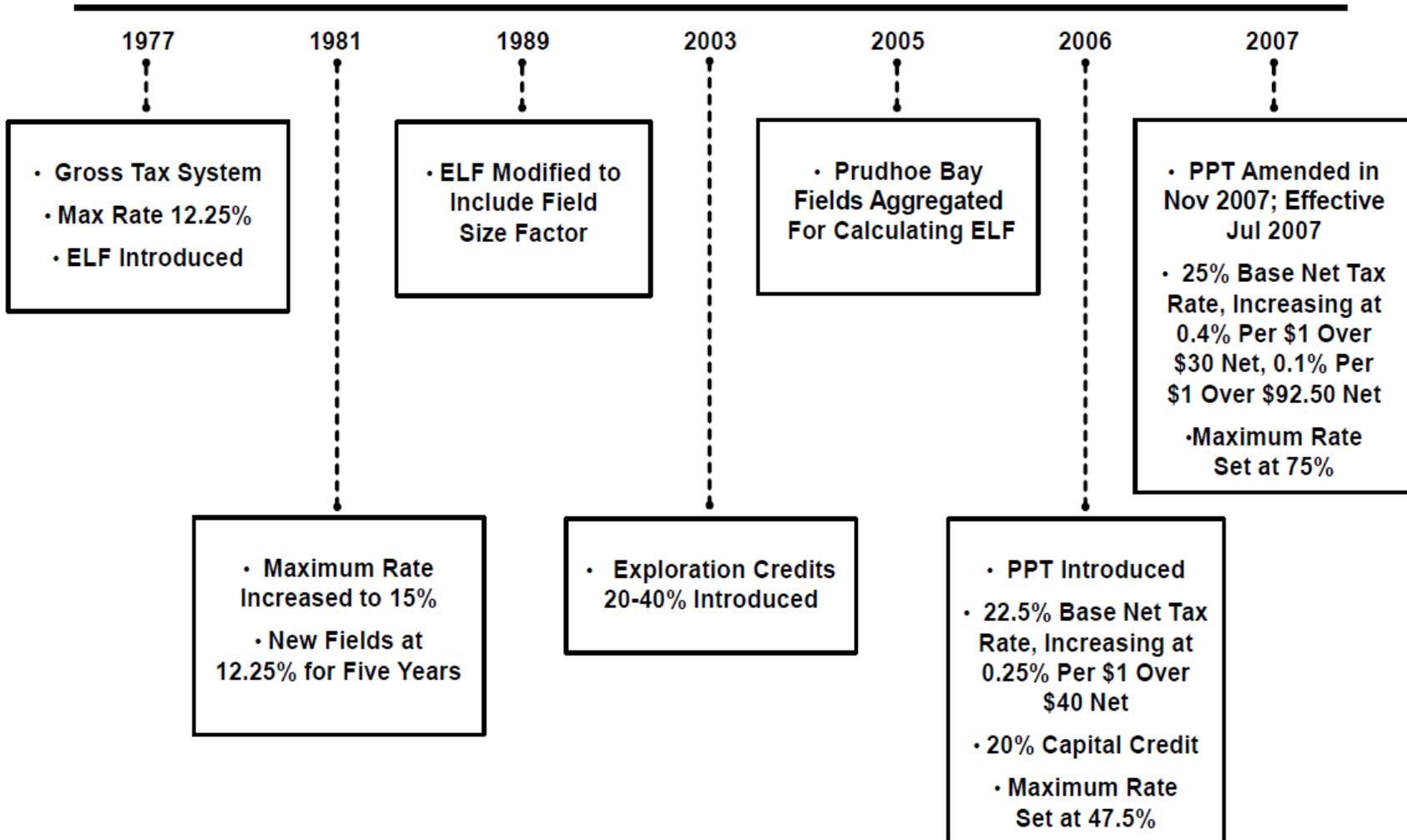
Progressive, Regressive and Neutral Tax Systems



Oil and Gas in Alaska

Alaska's current fiscal system and competitive position

Timeline* of Alaska's Oil & Gas Tax System on the North Slope



* Note: Horizontal timeline not evenly scaled.

Alaska's Petroleum Revenue Sources

- Lease Bonuses & Rentals
- Royalties

- Production/Severance tax (MAPA)
- Property tax
 - 20 mills (2%)
 - Municipalities/boroughs retain tax on property within their boundaries
- State corporate income tax (CIT)
 - 9.4 % of apportioned income
 - Apportions worldwide income to Alaska based on amount of property, production, and sales in Alaska relative to rest of world

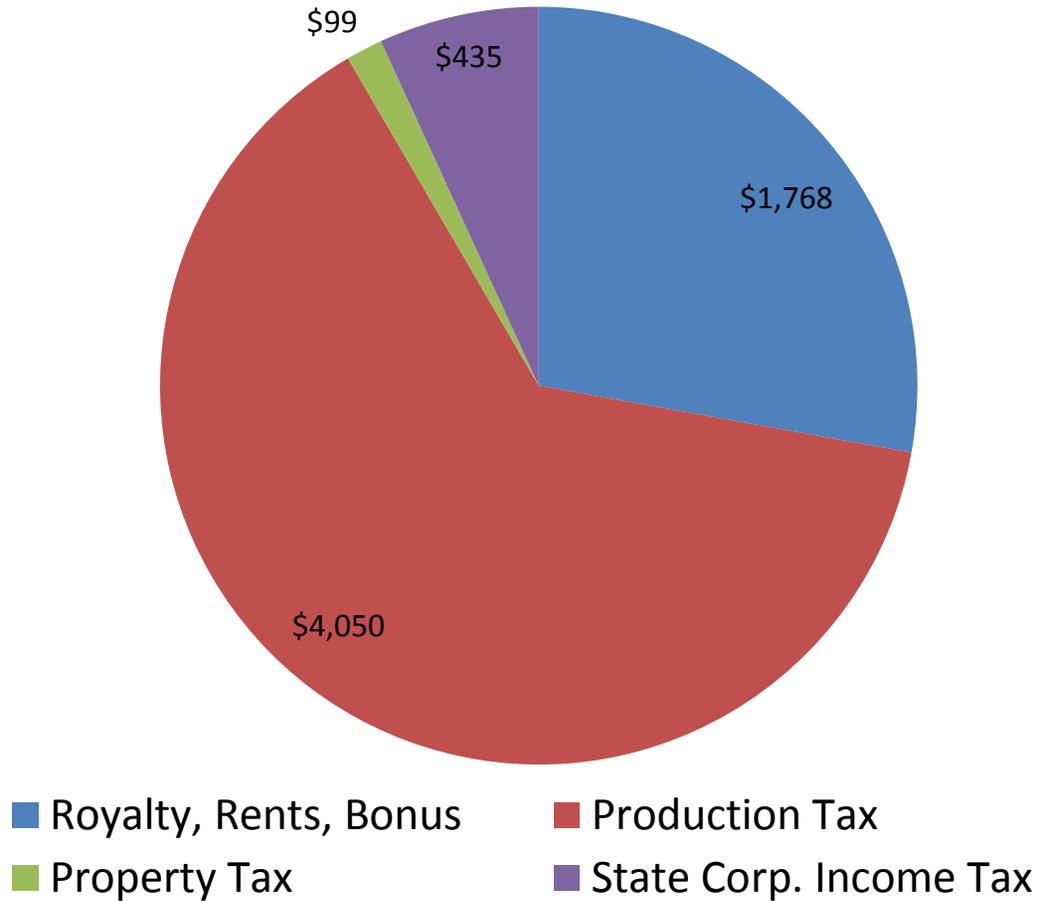


Contractual -
Established in the lease contract at the time the lease was acquired
Can effectively modify only for future leases, not existing leases



Statutory –
Established through legislative action, can be revised by the legislature

State Petroleum Revenue FY 2013 (\$ millions)*



* Note: \$107.67/barrel 2013 average oil price

Alaska's Fiscal System – ACES vs. MAPA

	MAPA	ACES
Base Tax Rate	35%	25%
Progressive Tax	None	0.4% Per \$1 Above \$30 Net; 0.1% Per \$1 Above \$92.50 Net
Maximum Tax Rate	35%	75%
Credits	Up to \$8/Bbl Produced	20% of Qualified Capital Expenditure
Gross Value Reduction (GVR)		
Rate	20%: 12.5% Royalty 30%: >12.5% Royalty	N/A
Applicability	New Units/PAs PA Expansions	
Monetization of Net Operating Losses (NOLs)	Yes 45% Through 2015, 35% Thereafter	Yes
Minimum Tax	4% of Gross @ WC ANS > \$25	4% of Gross @ WC ANS > \$25
Credits Reduce Minimum Tax	GVR Barrels Only	Yes
Small Producer Credit	\$12 Million (2016)	\$12 Million (2016)

What did the More Alaska Production Act (SB 21) do?

- Took a tax system with *variable tax rates* and *credits for capital spending* and simplified it with a flat tax rate of 35% and credits for production.
- Provided extra incentives for production from new units and undeveloped participating areas in existing units.
- **Did not** change royalties, property tax or corporate income taxes on oil production.

Tax Calculation

Production Volumes Not Eligible for Gross Value Reduction (GVR)

(a) West Coast Price (\$/Bbl)		80.00	100.00	120.00	140.00	160.00
(b) Transportation (\$/Bbl)	-	10.00	10.00	10.00	10.00	10.00
(c) Gross Value (\$/Bbl)	(a) - (b) =	70.00	90.00	110.00	130.00	150.00
(d) Lease Expenditures (\$/Bbl)	-	30.00	30.00	30.00	30.00	30.00
(e) Net Value (\$/Bbl)	(c) - (d) =	40.00	60.00	80.00	100.00	120.00
(f) Gross Value Reduction (%)						
(g) Gross Value After GVR (\$/Bbl)						
(h) Net Value After GVR (\$/Bbl)		40.00	60.00	80.00	100.00	120.00
(i) Tax Rate (Percent)	x	35%	35%	35%	35%	35%
(j) Production Tax Before Credit (\$/Bbl)	(h) x (i)	14.00	21.00	28.00	35.00	42.00
(k) Production Credit (\$/Bbl)	-	8.00	6.00	4.00	2.00	-
(l) Production Tax After Credit (\$/Bbl)	(j) - (k)	6.00	15.00	24.00	33.00	42.00
(m) Taxable Barrels (1,000 Bbls)	x	1,000	1,000	1,000	1,000	1,000
(n) Total Production Tax After Credit (\$000)	(l) x (m) =	6,000	15,000	24,000	33,000	42,000
(o) Effective Tax Rate on Net Value (%)	(l) ÷ (e)	15.0%	25.0%	30.0%	33.0%	35.0%
(p) Effective Tax Rate on Gross Value (%)	(l) ÷ (c)	8.6%	16.7%	21.8%	25.4%	28.0%

Tax Calculation

20% GVR-Eligible Production – Units with 12.5% Royalty

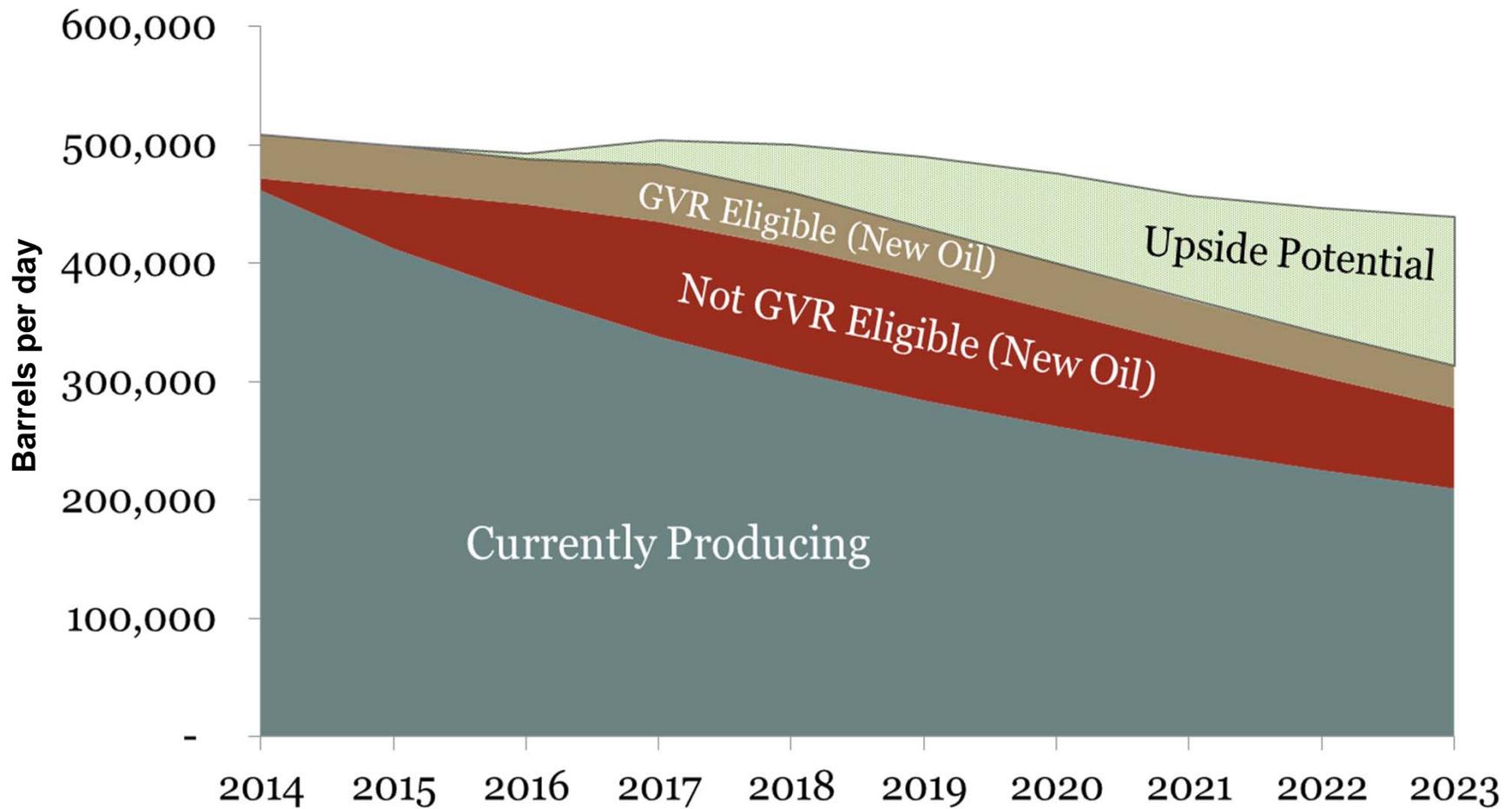
(a) West Coast Price (\$/Bbl)		80.00	100.00	120.00	140.00	160.00
(b) Transportation (\$/Bbl)	-	10.00	10.00	10.00	10.00	10.00
(c) Gross Value (\$/Bbl)	(a) - (b) =	70.00	90.00	110.00	130.00	150.00
(d) Lease Expenditures (\$/Bbl)	-	30.00	30.00	30.00	30.00	30.00
(e) Net Value (\$/Bbl)	(c) - (d) =	40.00	60.00	80.00	100.00	120.00
(f) Gross Value Reduction (%)		20%	20%	20%	20%	20%
(g) Gross Value After GVR (\$/Bbl)	(c) - [(c) x (f)] =	56.00	72.00	88.00	104.00	120.00
(h) Net Value After GVR (\$/Bbl)	(g) - (d) =	26.00	42.00	58.00	74.00	90.00
(i) Tax Rate (Percent)	x	35%	35%	35%	35%	35%
(j) Production Tax Before Credit (\$/Bbl)	(h) x (i)	9.10	14.70	20.30	25.90	31.50
(k) Production Credit (\$/Bbl)	-	5.00	5.00	5.00	5.00	5.00
(l) Production Tax After Credit (\$/Bbl)	(j) - (k)	4.10	9.70	15.30	20.90	26.50
(m) Taxable Barrels (1,000 Bbls)	x	1,000	1,000	1,000	1,000	1,000
(n) Total Production Tax After Credit (\$000)	(l) x (m) =	4,100	9,700	15,300	20,900	26,500
(o) Effective Tax Rate on Net Value (%)	(l) ÷ (e)	10.3%	16.2%	19.1%	20.9%	22.1%
(p) Effective Tax Rate on Gross Value (%)	(l) ÷ (c)	5.9%	10.8%	13.9%	16.1%	17.7%

Tax Calculation

30 % GVR-Eligible Production – Units with Greater Than 12.5% Royalty

(a) West Coast Price (\$/Bbl)		80.00	100.00	120.00	140.00	160.00
(b) Transportation (\$/Bbl)	-	10.00	10.00	10.00	10.00	10.00
(c) Gross Value (\$/Bbl)	(a) - (b) =	70.00	90.00	110.00	130.00	150.00
(d) Lease Expenditures (\$/Bbl)	-	30.00	30.00	30.00	30.00	30.00
(e) Net Value (\$/Bbl)	(c) - (d) =	40.00	60.00	80.00	100.00	120.00
(f) Gross Value Reduction (%)		30%	30%	30%	30%	30%
(g) Gross Value After GVR (\$/Bbl)	(c) - [(c) x (f)] =	49.00	63.00	77.00	91.00	105.00
(h) Net Value After GVR (\$/Bbl)	(g) - (d) =	19.00	33.00	47.00	61.00	75.00
(i) Tax Rate (Percent)	x	35%	35%	35%	35%	35%
(j) Production Tax Before Credit (\$/Bbl)	(h) x (i)	6.65	11.55	16.45	21.35	26.25
(k) Production Credit (\$/Bbl)	-	5.00	5.00	5.00	5.00	5.00
(l) Production Tax After Credit (\$/Bbl)	(j) - (k)	1.65	6.55	11.45	16.35	21.25
(m) Taxable Barrels (1,000 Bbls)	x	1,000	1,000	1,000	1,000	1,000
(n) Total Production Tax After Credit (\$000)	(l) x (m) =	1,650	6,550	11,450	16,350	21,250
(o) Effective Tax Rate on Net Value (%)	(l) ÷ (e)	4.1%	10.9%	14.3%	16.4%	17.7%
(p) Effective Tax Rate on Gross Value (%)	(l) ÷ (c)	2.4%	7.3%	10.4%	12.6%	14.2%

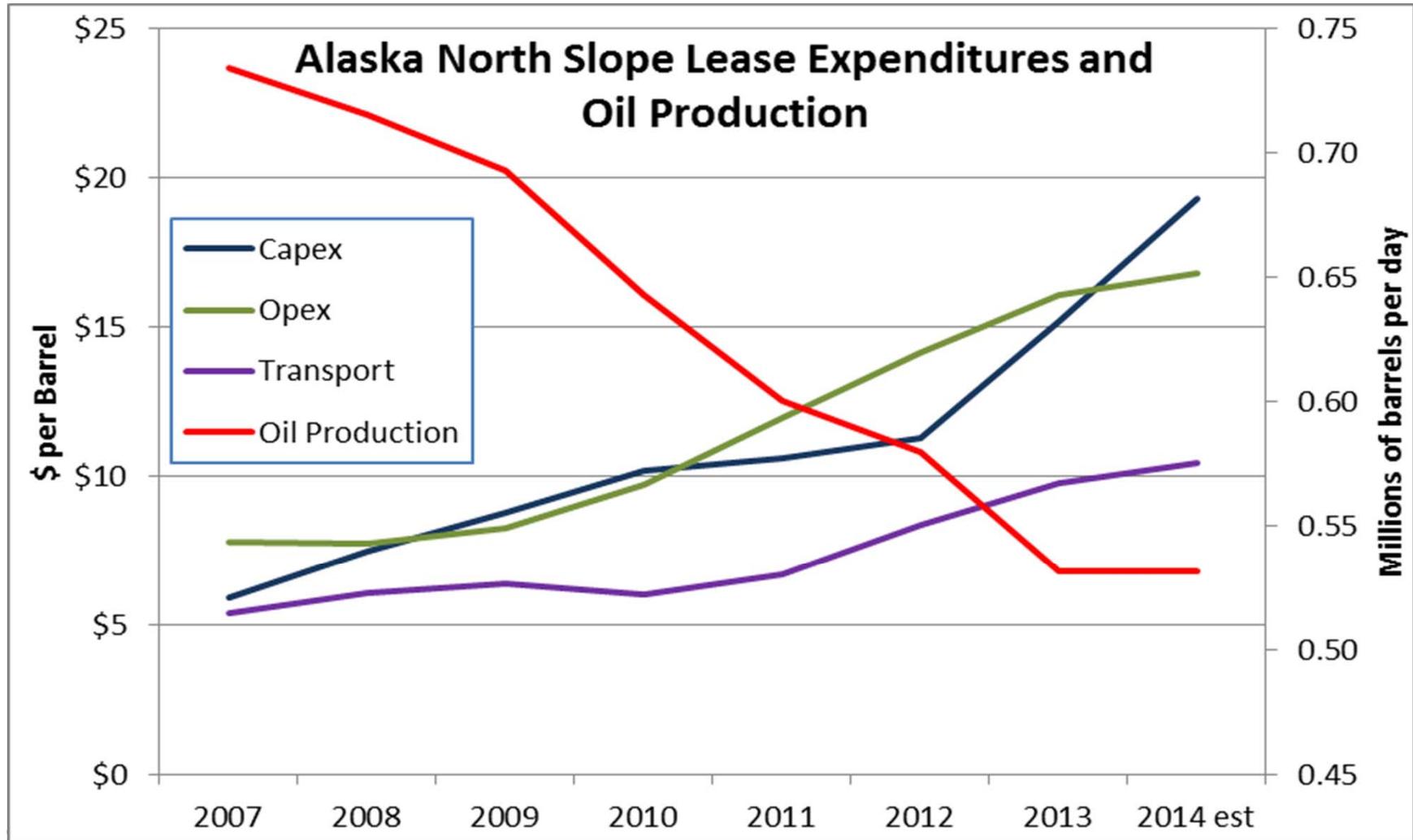
North Slope Production Forecast Fall 2013



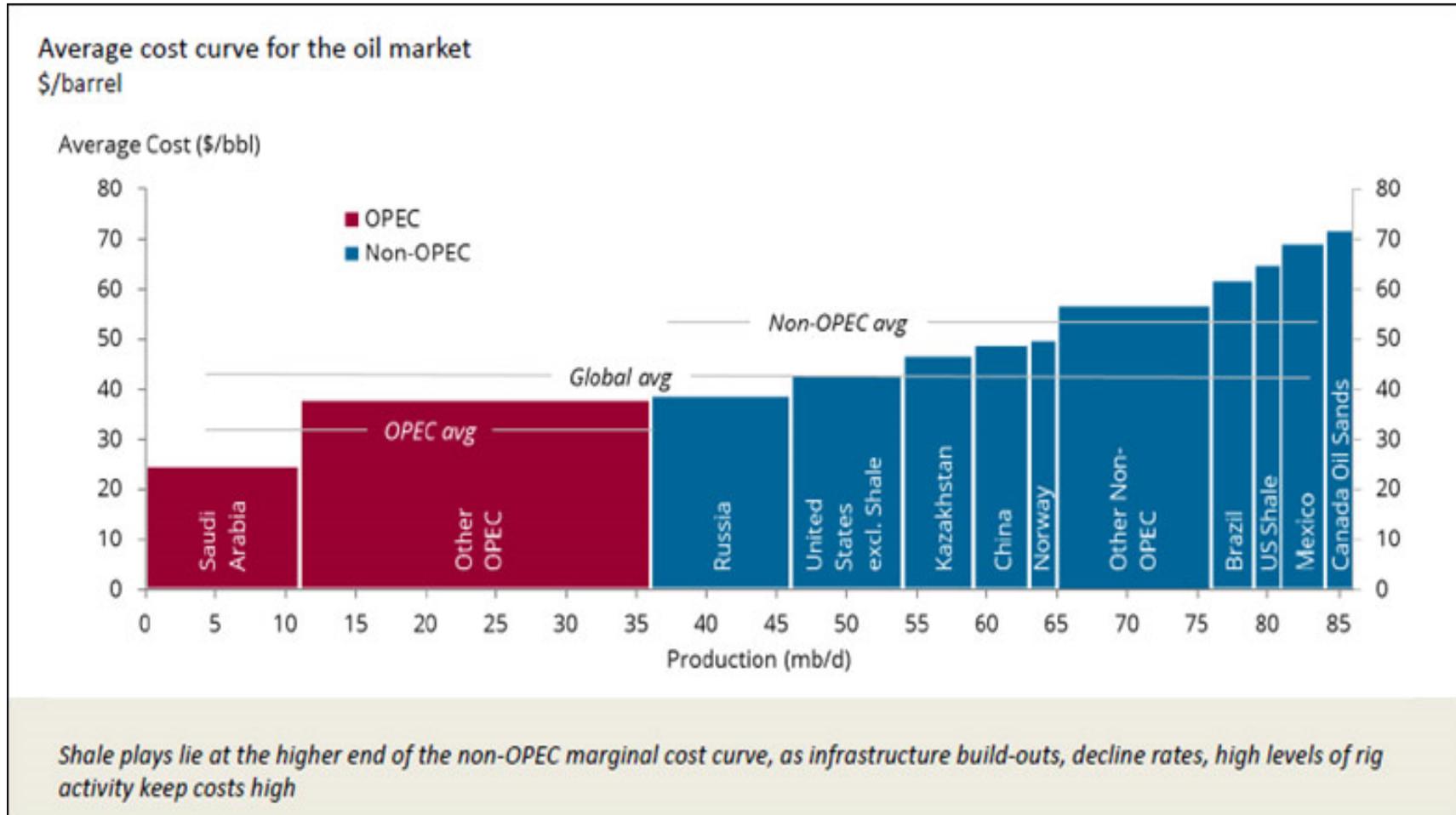
Focus on Costs – Categories

- The production and sale of crude oil has several cost phases and categories:
 - Lease costs
 - Exploration costs
 - Development costs (usually capital costs, or “capex”)
 - Operating costs (“opex”)
 - Transport costs
 - Abandonment costs
 - Payments to landowner/government

Oil production and transport costs in Alaska have risen steadily over past 8 years even as production has declined



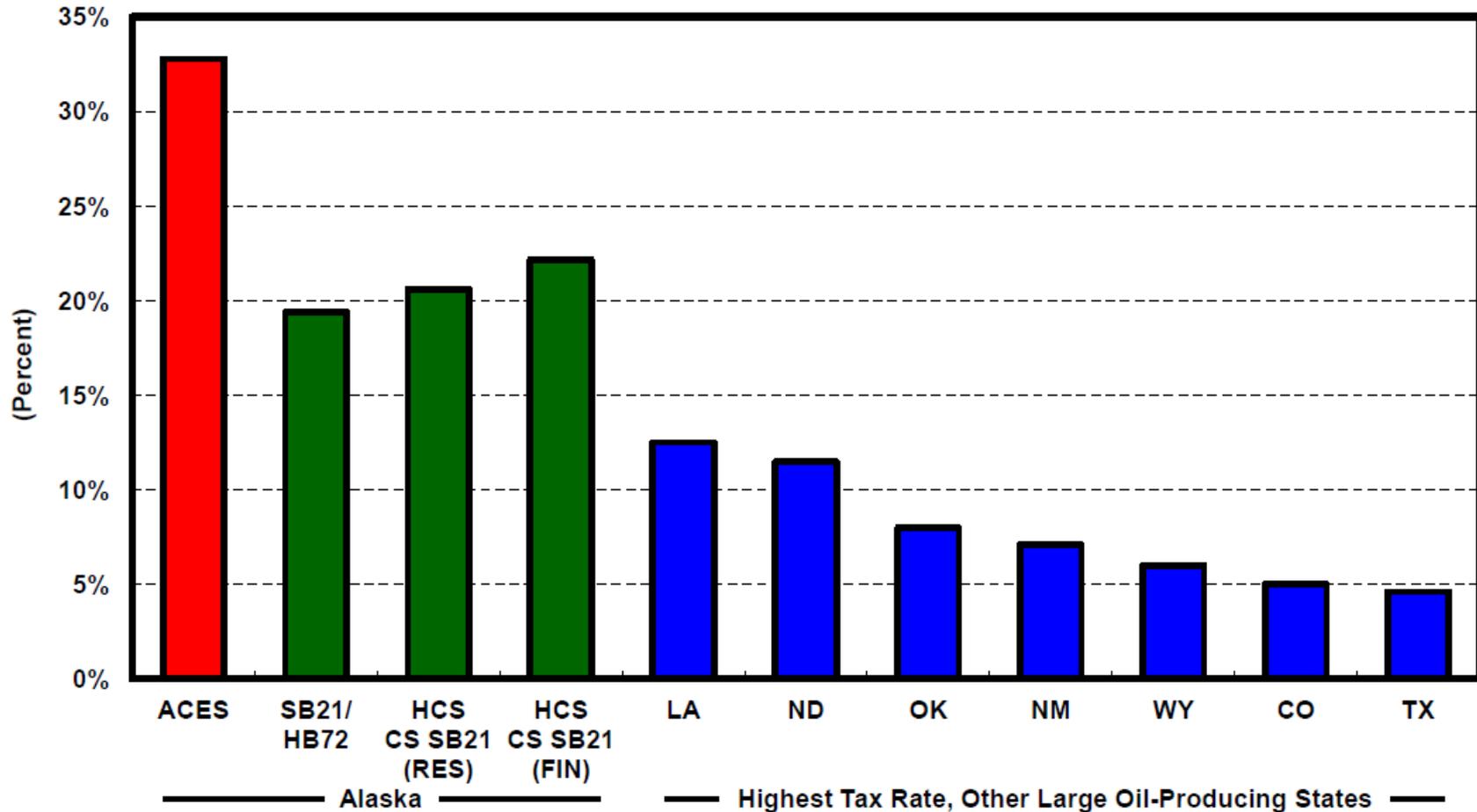
A recent view of the oil production cost curve – OPEC still has the cheapest oil



Source: IEA, Dec 2013

Effective Tax Rates on Gross Value for Legacy Production

ACES vs. MAPA (HCS CS SB21 (FIN)) and Other Large Oil-Producing States With Production Taxes at \$100 Wellhead Value*



Note: California and Federal Offshore properties are not subject to a severance tax.

* FY2012 Combined PBU/KPU Costs and Volumes

Econ One Research

5

Source: Econ One Research, 2013, Analysis of HCS CS SB21 (FIN) for House Finance Committee, April 11, 2013.

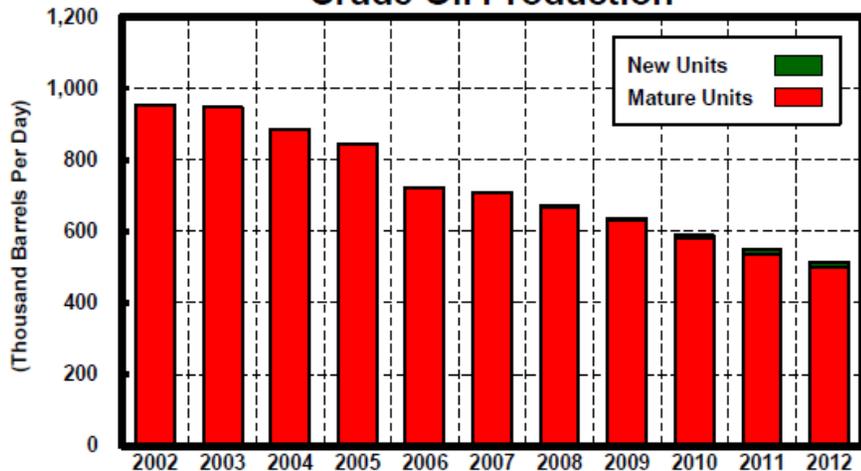
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Alaska Fiscal Competitiveness – General Concepts

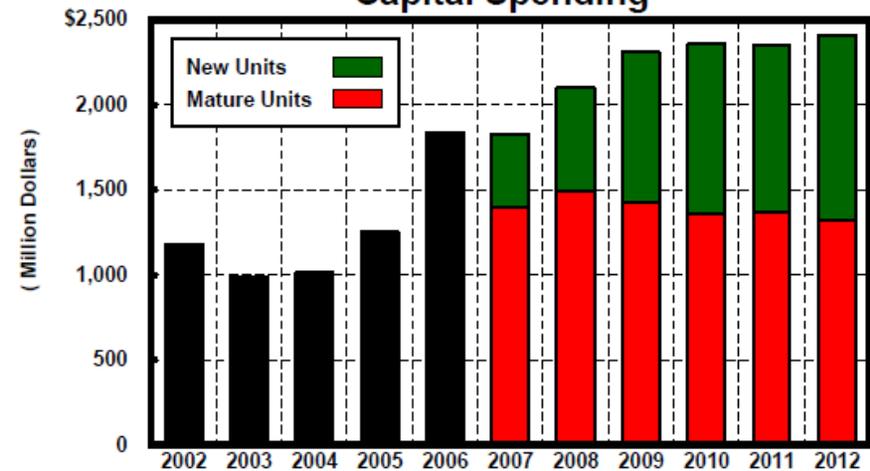
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Peer Profile – Alaska North Slope

Crude Oil Production



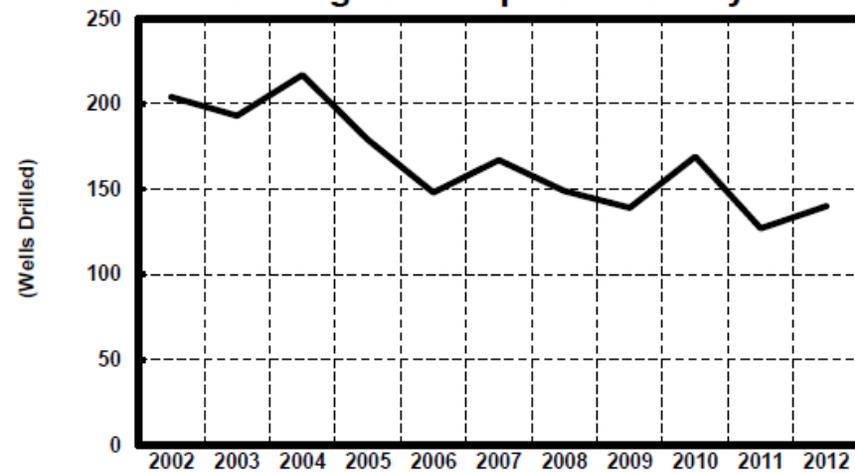
Capital Spending



Petroleum Sector Employment



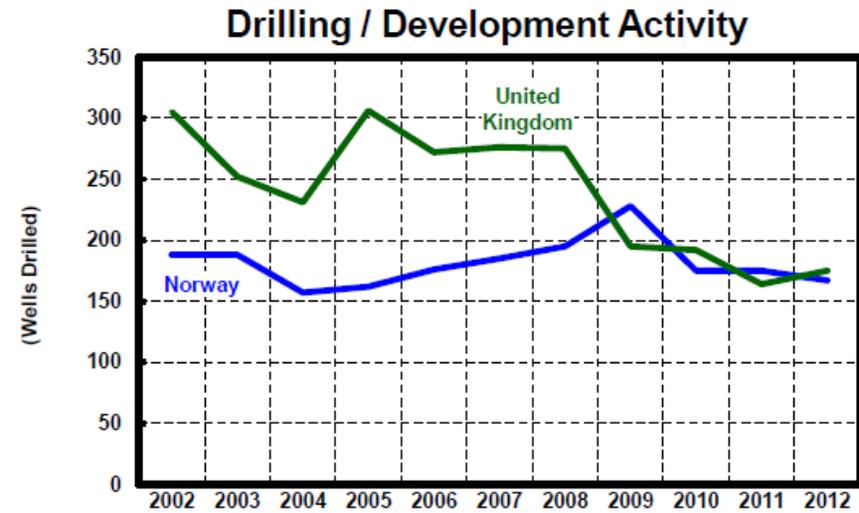
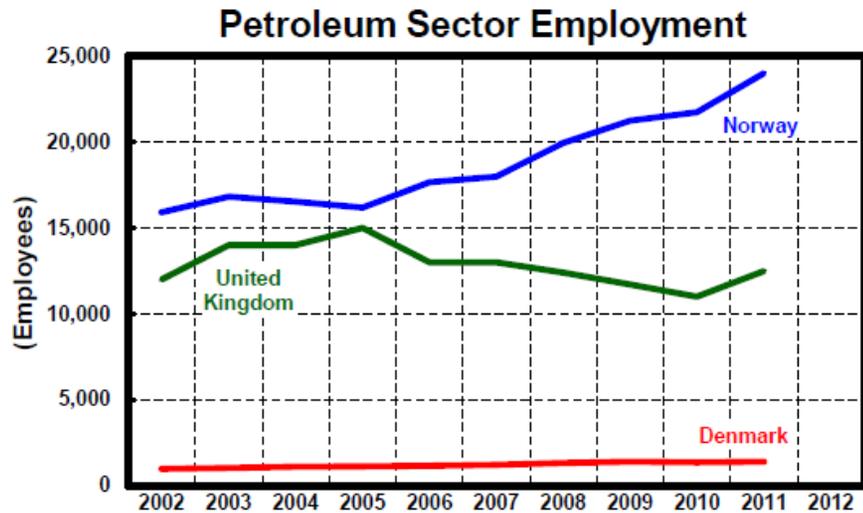
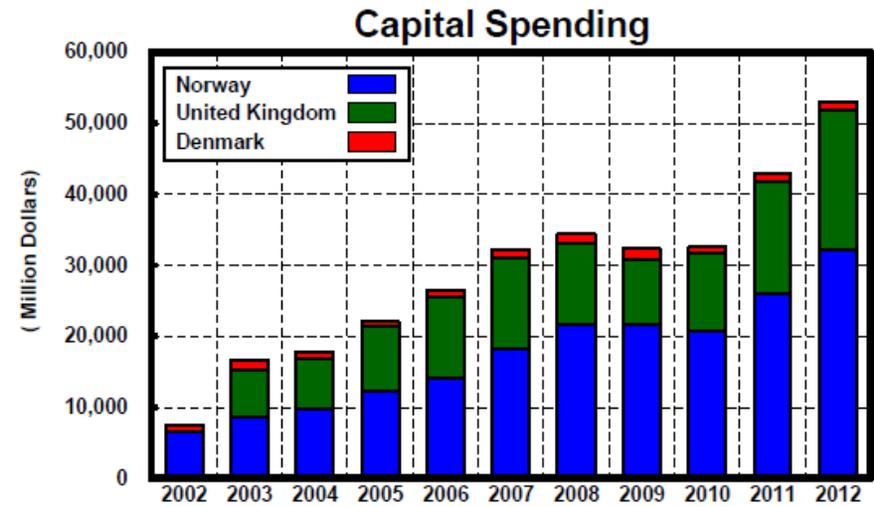
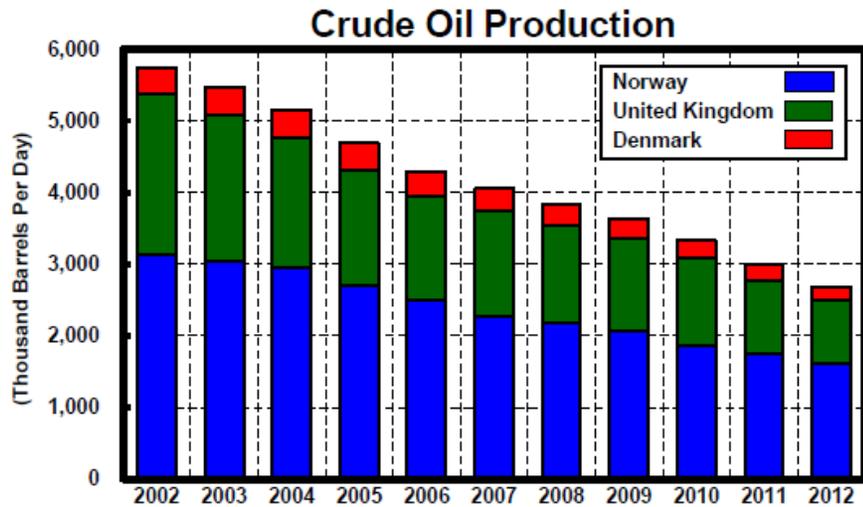
Drilling / Development Activity



Econ One Research

Source: Econ One Research, 2013, Analysis of Alaska's Tax System, North Slope Investment and The Administration's Proposal SB21 / SRES CS SB21, March 1, 2013.

Peer Profile – Northwest Europe (North Sea)

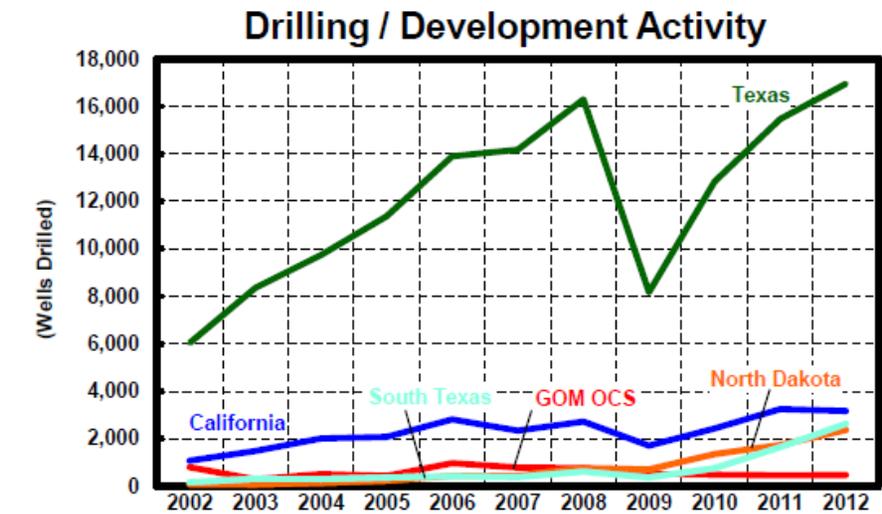
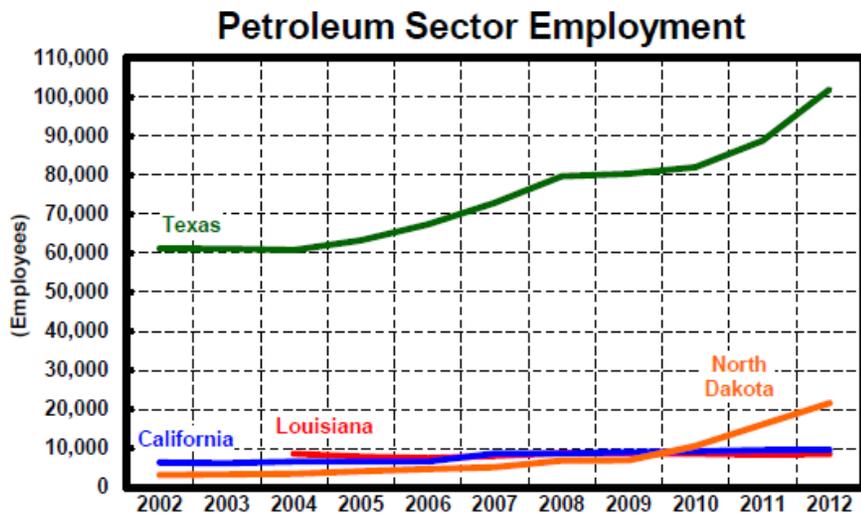
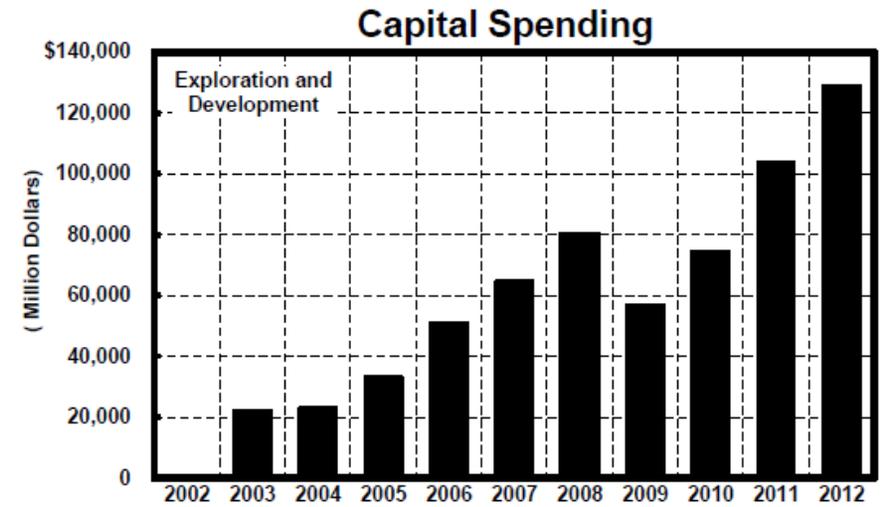
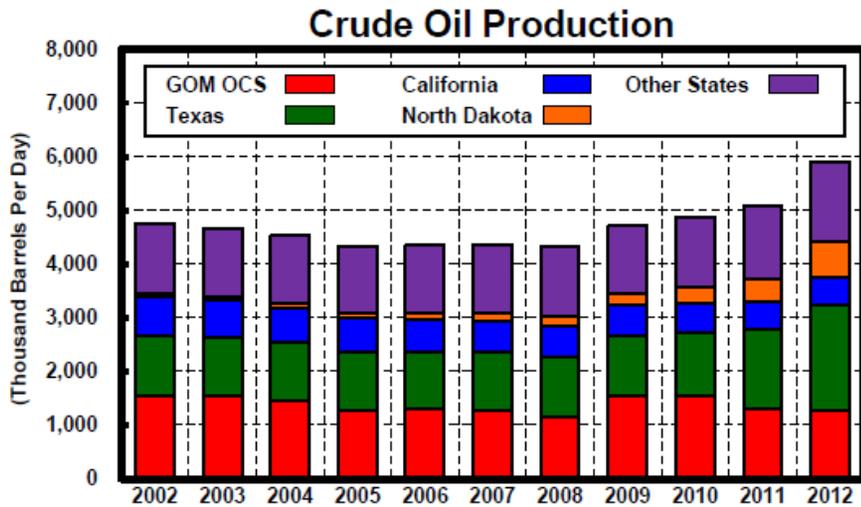


Econ One Research

Note: 2012 figures are preliminary.

Source: Econ One Research, 2013, Analysis of Alaska's Tax System, North Slope Investment and The Administration's Proposal SB21 / SRES CS SB21, March 1, 2013.

Peer Profile –U.S.A. Excluding Alaska North Slope



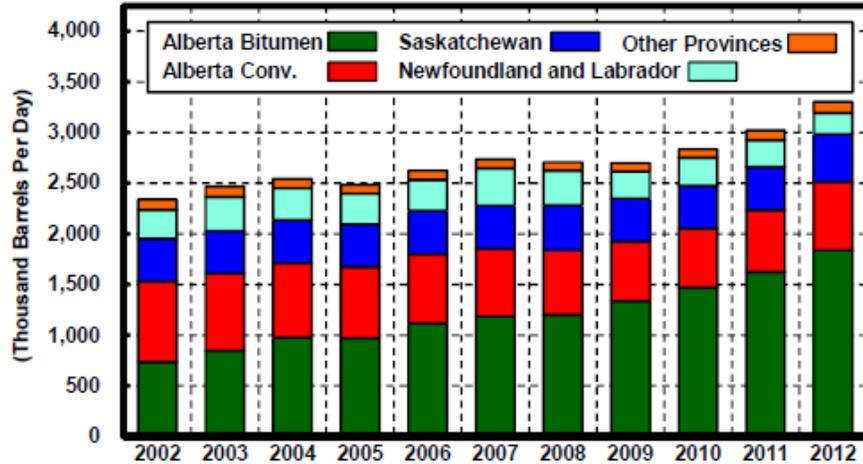
Econ One Research

Note: 2012 figures are preliminary.

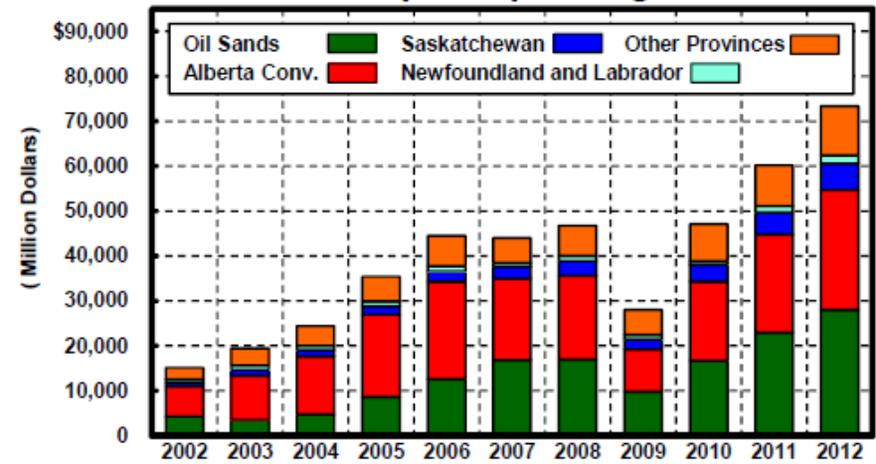
Source: Econ One Research, 2013, Analysis of Alaska's Tax System, North Slope Investment and The Administration's Proposal SB21 / SRES CS SB21, March 1, 2013.

Peer Profile – Canada

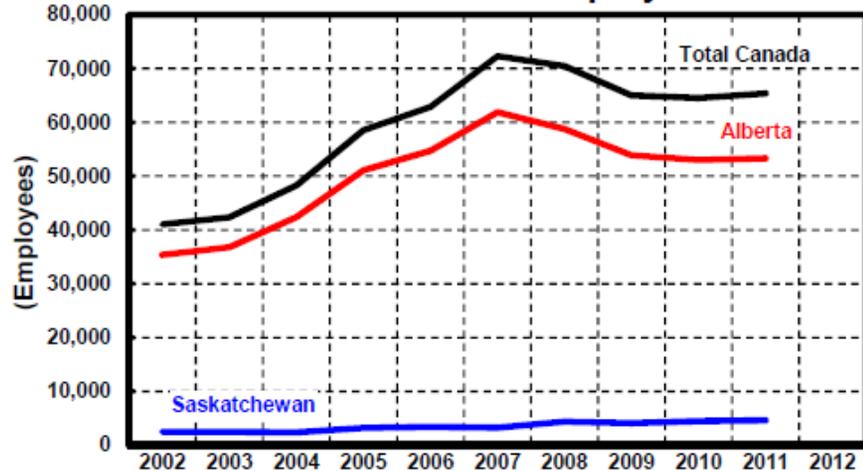
Crude Oil Production



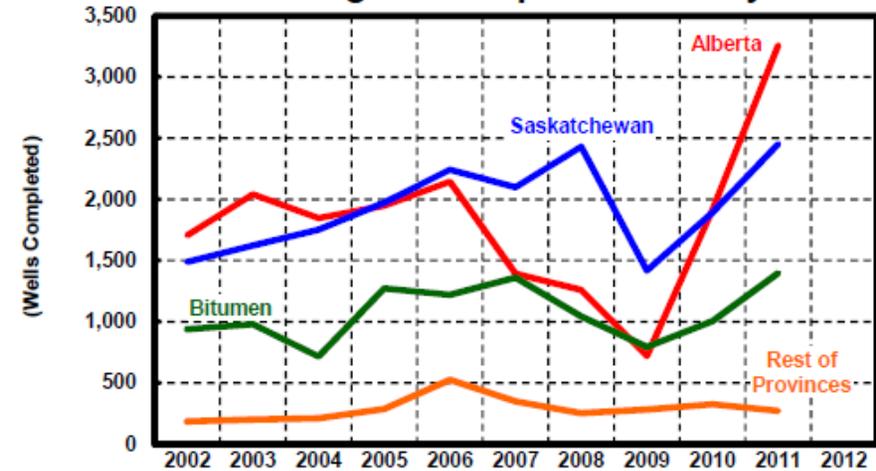
Capital Spending



Petroleum Sector Employment



Drilling / Development Activity



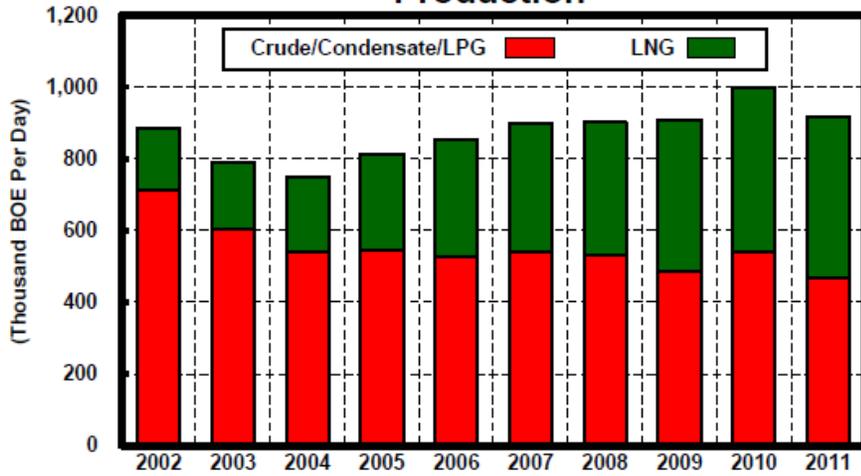
Econ One Research

Note: 2012 figures are preliminary.

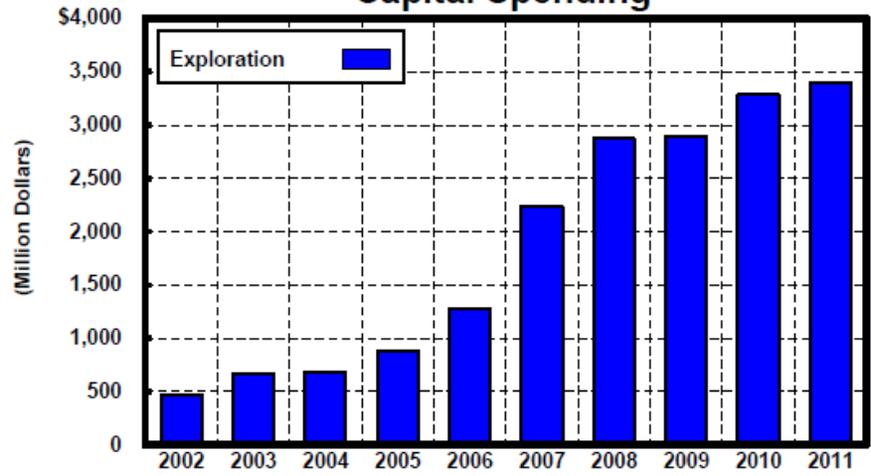
Source: Econ One Research, 2013, Analysis of Alaska's Tax System, North Slope Investment and The Administration's Proposal SB21 / SRES CS SB21, March 1, 2013.

Peer Profile – Australia

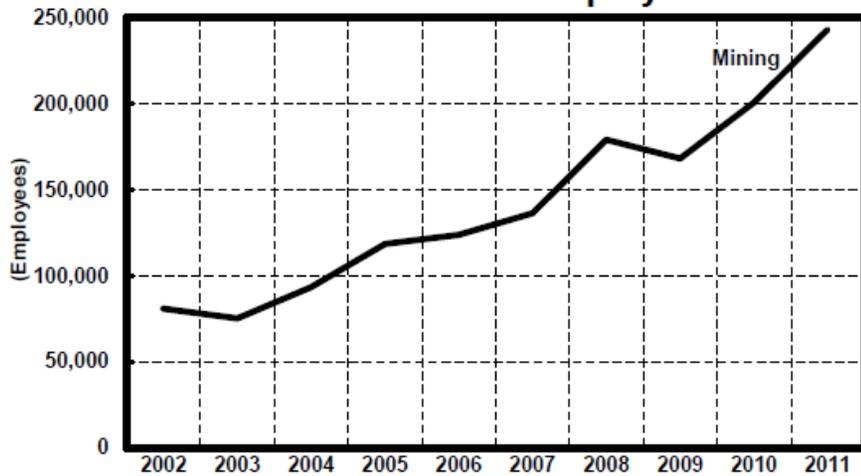
Production



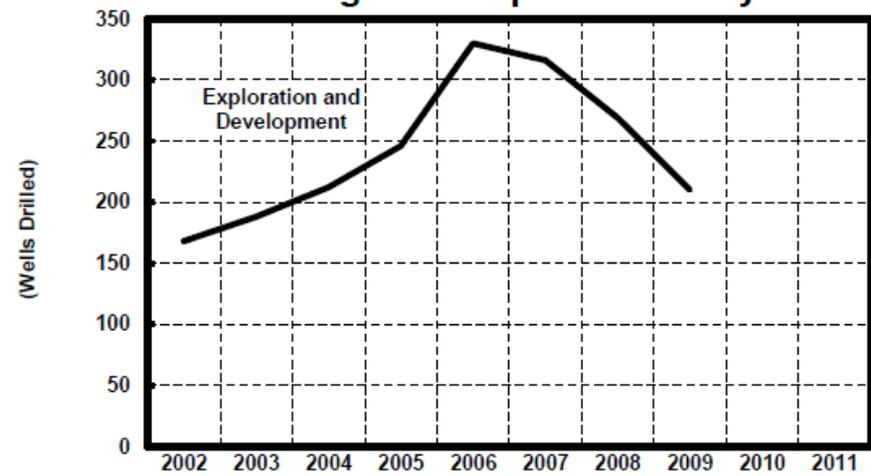
Capital Spending



Petroleum Sector Employment



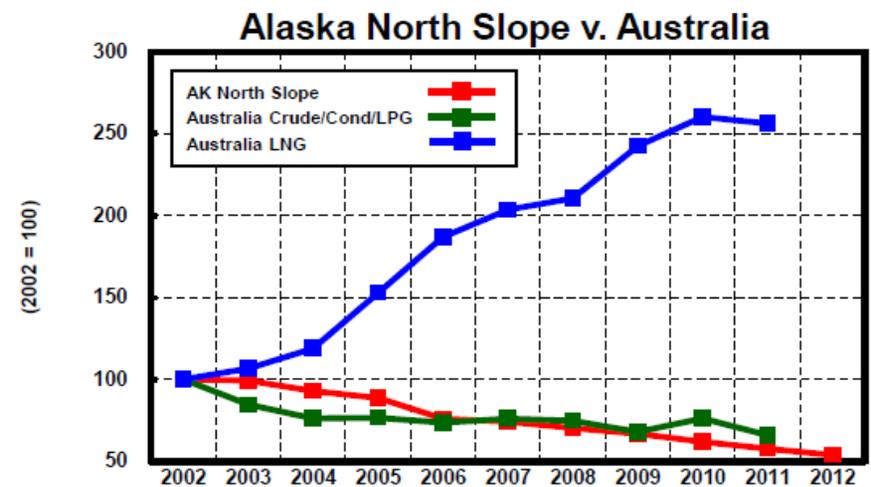
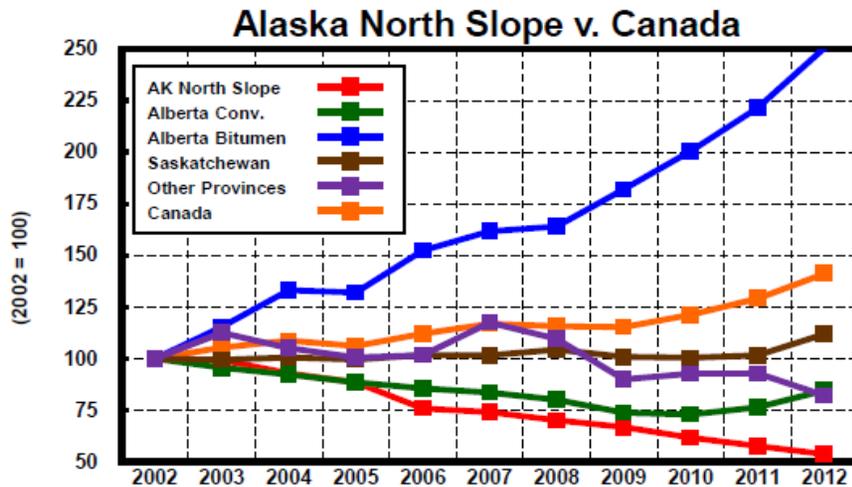
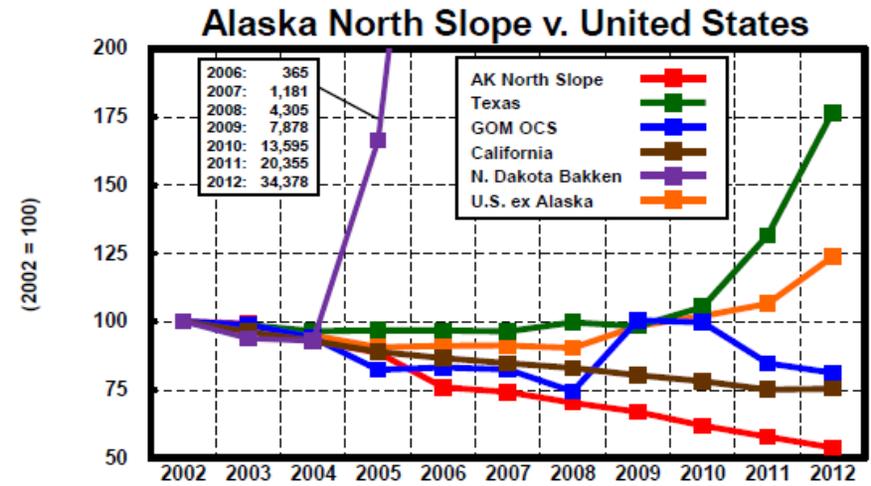
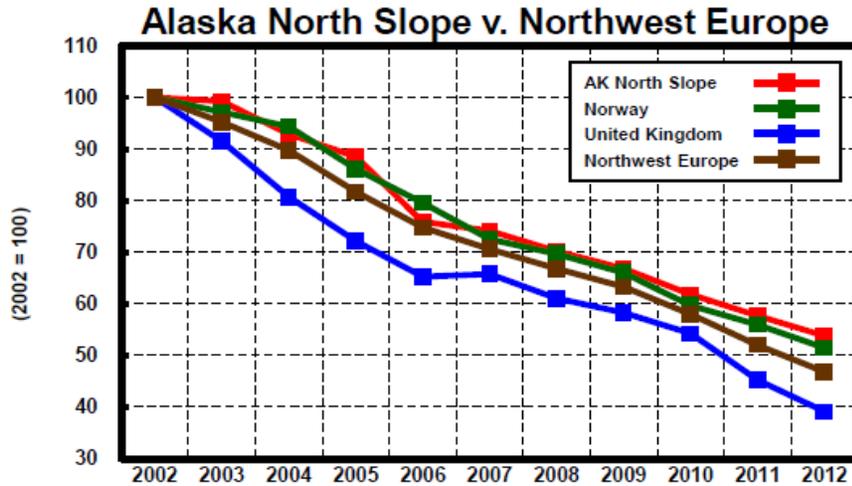
Drilling / Development Activity



Econ One Research

Source: Econ One Research, 2013, Analysis of Alaska's Tax System, North Slope Investment and The Administration's Proposal SB21 / SRES CS SB21, March 1, 2013.

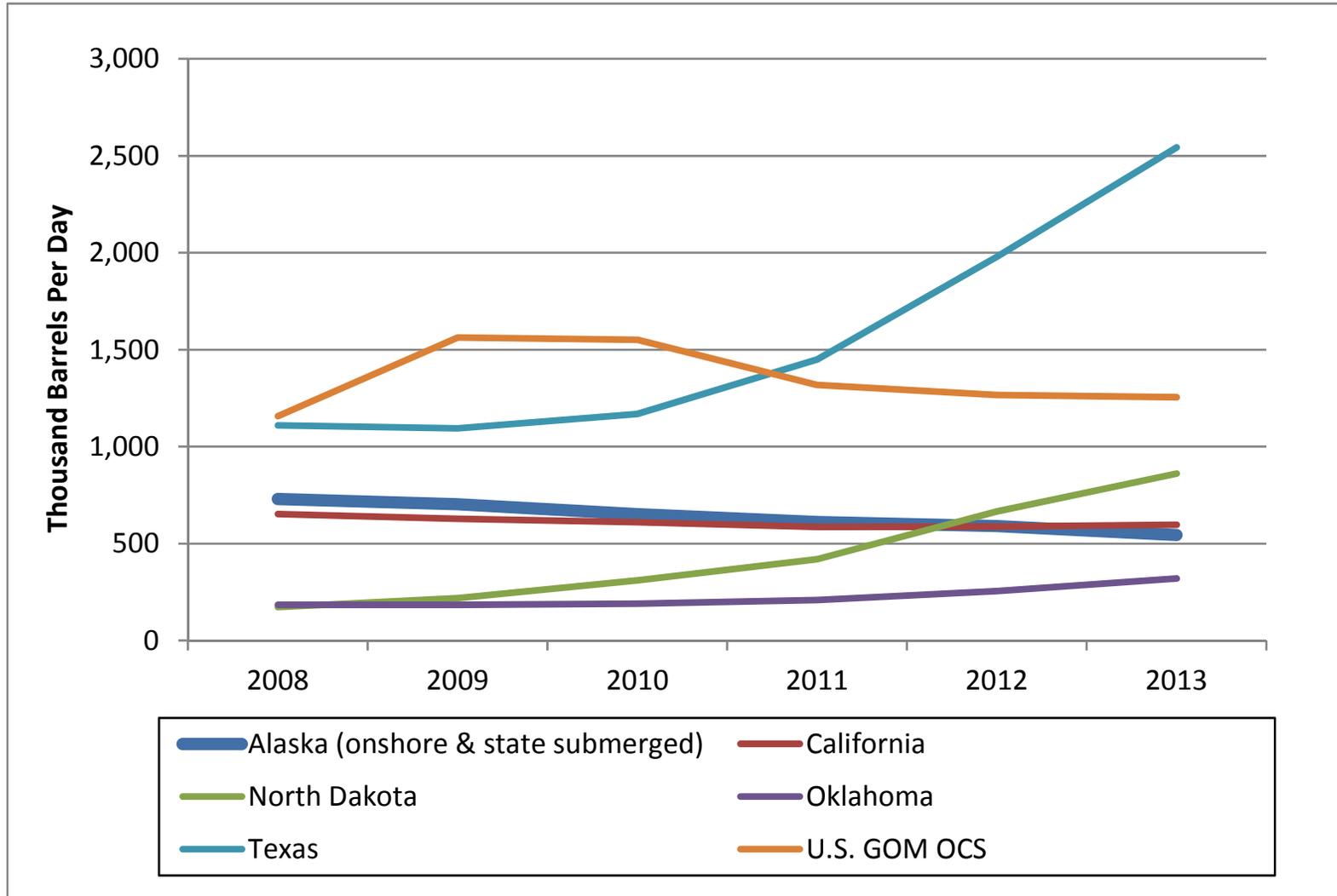
Peer Group Crude Oil Production Comparison to Alaska



Econ One Research

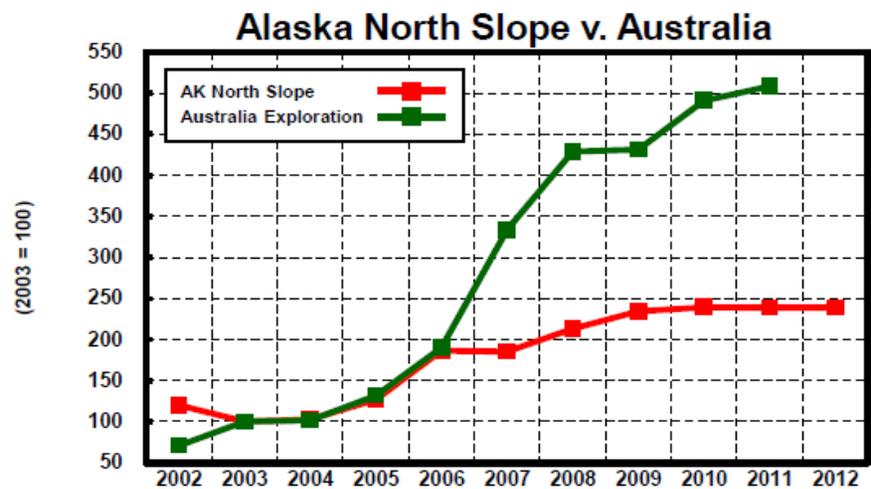
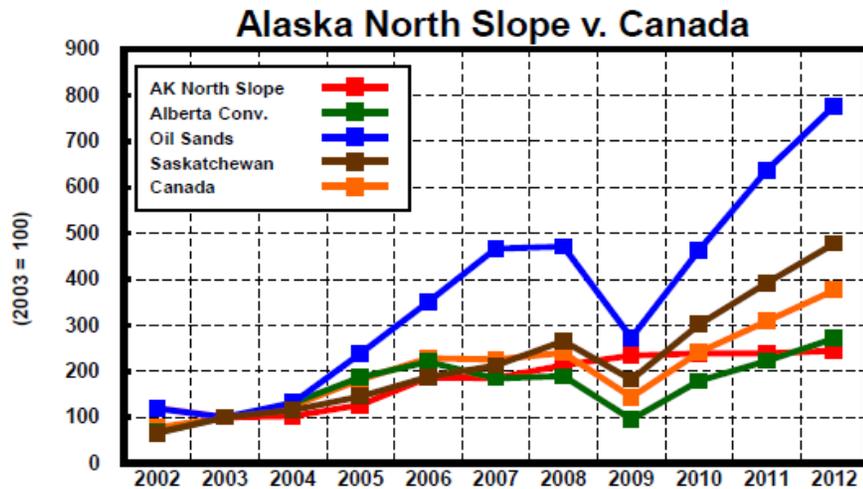
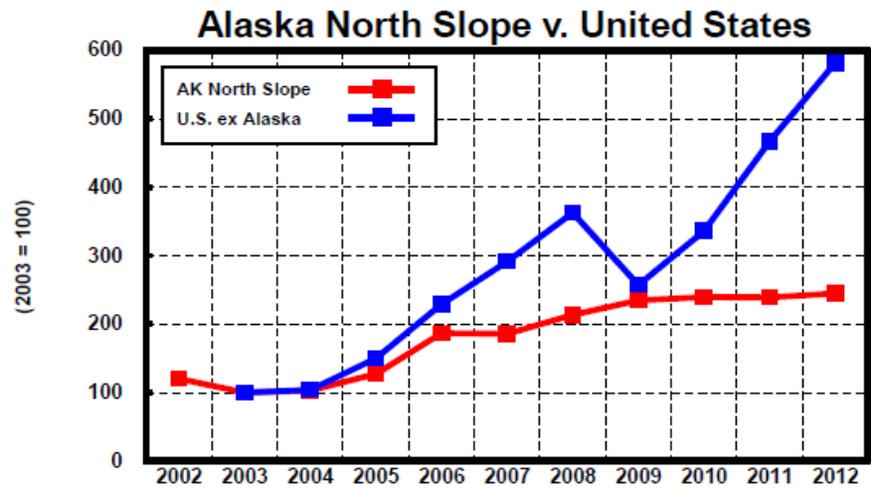
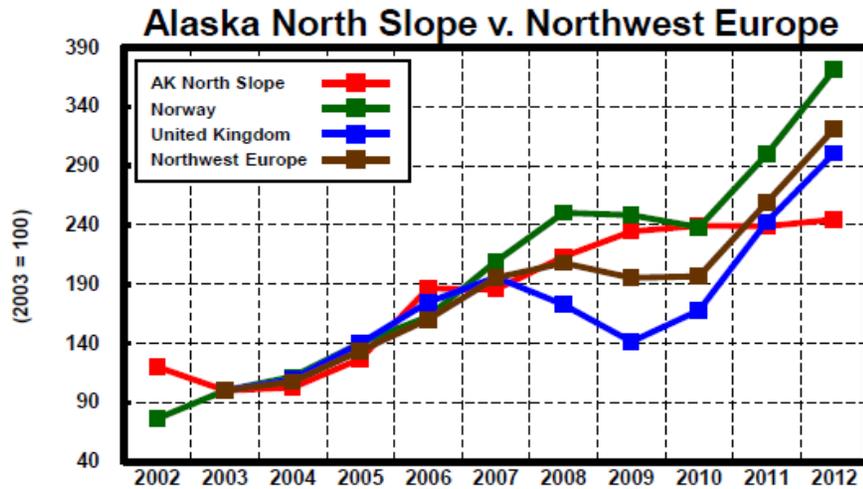
Source: Econ One Research, 2013, Analysis of Alaska's Tax System, North Slope Investment and The Administration's Proposal SB21 / SRES CS SB21, March 1, 2013.

Five States and the U.S. Gulf of Mexico Produce 80% of U.S. Crude Oil in 2013 (EIA)



Source: EIA 2014, Five states and the Gulf of Mexico produce more than 80% of U.S. crude oil ; <http://www.eia.gov/todayinenergy/detail.cfm?id=15631#>

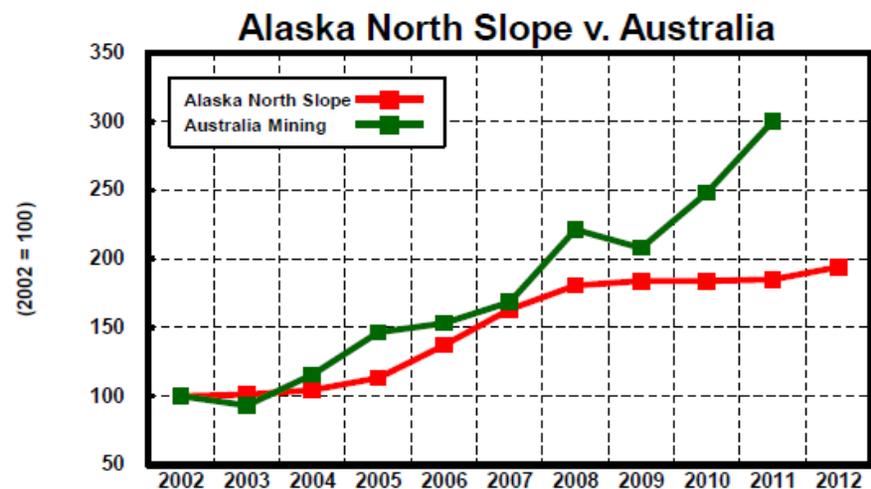
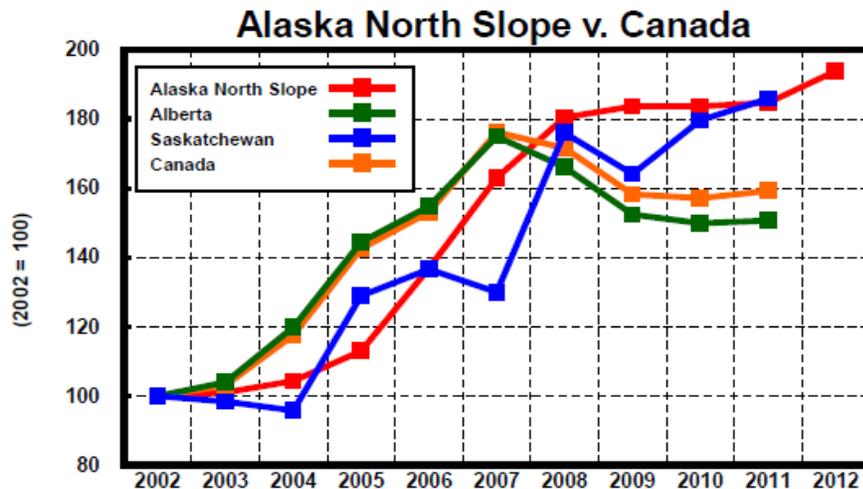
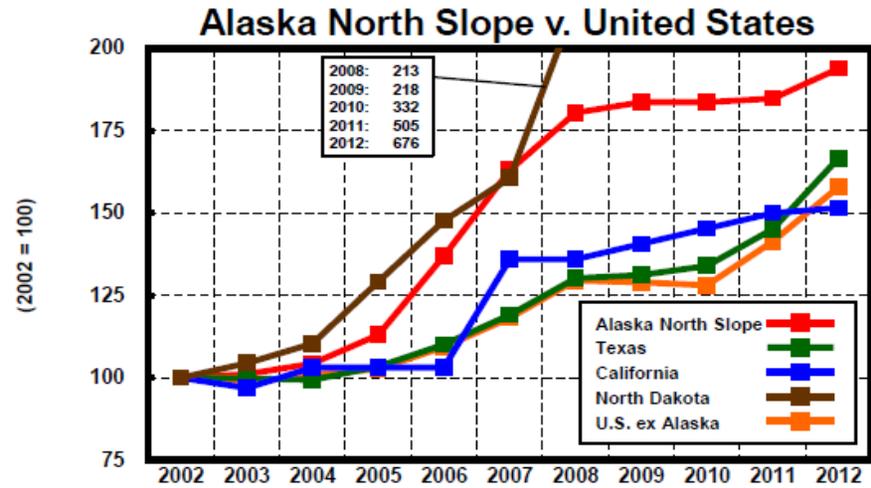
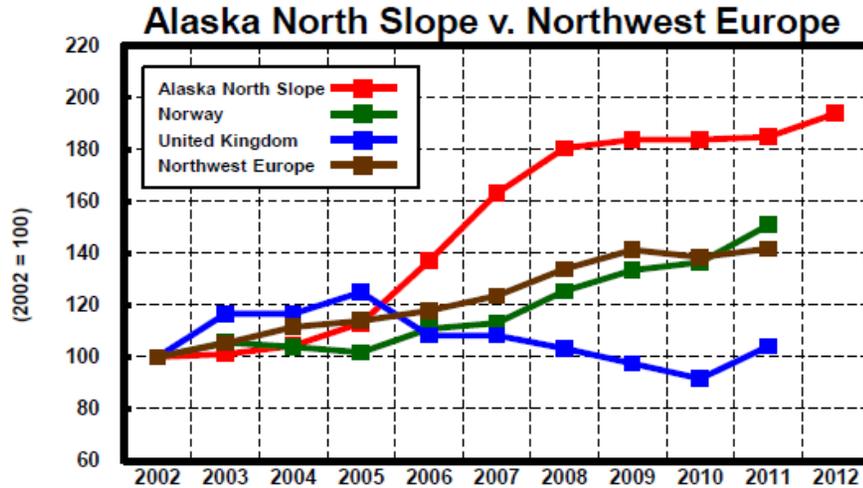
Peer Group Capital Spending Comparison to Alaska



Econ One Research

Source: Econ One Research, 2013, Analysis of Alaska's Tax System, North Slope Investment and The Administration's Proposal SB21 / SRES CS SB21, March 1, 2013.

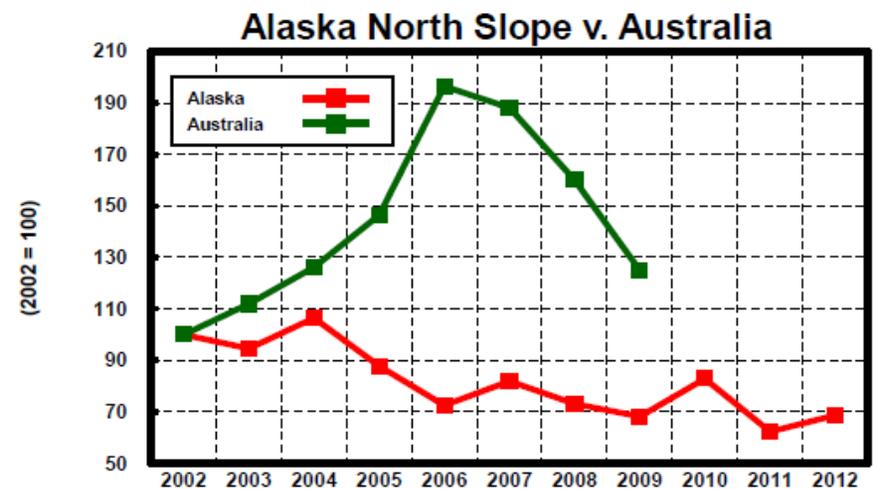
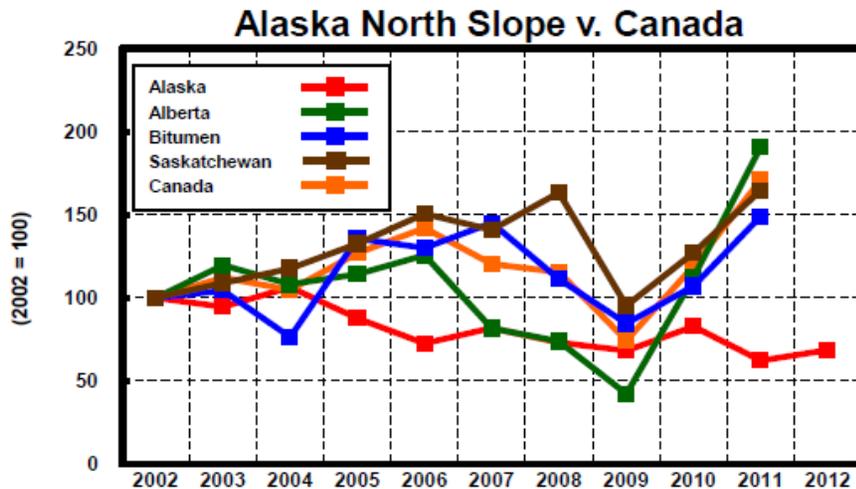
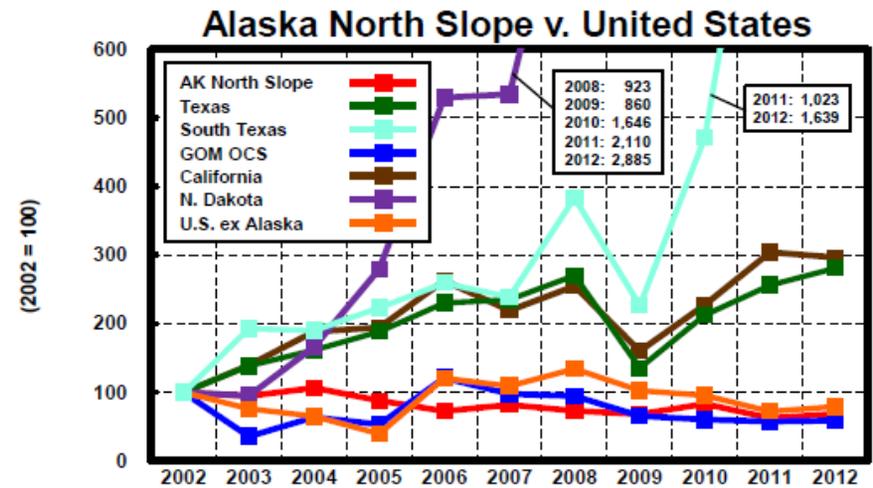
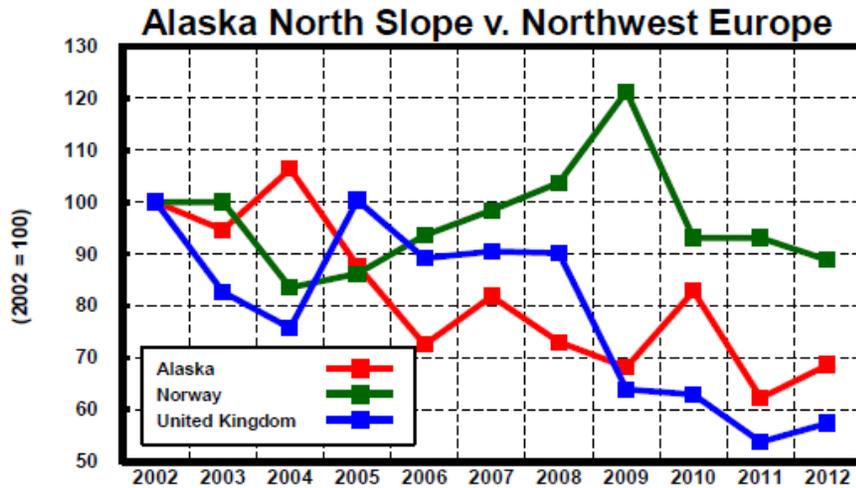
Peer Group Employment Comparison to Alaska



Econ One Research

Source: Econ One Research, 2013, Analysis of Alaska's Tax System, North Slope Investment and The Administration's Proposal SB21 / SRES CS SB21, March 1, 2013.

Peer Group Drilling / Development Comparison to Alaska



Econ One Research

Source: Econ One Research, 2013, Analysis of Alaska's Tax System, North Slope Investment and The Administration's Proposal SB21 / SRES CS SB21, March 1, 2013.

THANK YOU

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