



# Overview of Fall 2010 Revenue Forecast



*Presentation to the  
Senate Finance Committee  
January 25, 2011  
Alaska Department of Revenue*



# Outline for Presentation

- **Fall 2010 Revenue Forecast for FY2011 and 2012**
  - Revenue Classification Changes
  - Total Revenue
  - Unrestricted Revenue
  - Non-Oil Revenue
- **10-year plan Revenue / Spending Scenario**
- **How Production Tax Is Calculated**
  - FY 2010, 2011, 2012 - “Income statement” format
- **Components of Production Tax Forecast**
  - Oil Production Forecast
  - Oil Price Forecast
  - Lease Expenditures Forecast / Oil Company Spending
  - Tax Credits



# Fall 2010

# Revenue Forecast

# FY2011 and FY2012



# Revenue Classification Changes

- In response to Legislative Finance & OMB request, we worked with these agencies to implement new categories of revenue.
- In the past, 2 categories of revenue
  - Unrestricted Revenue
  - Restricted Revenue
- Now, 4 categories of revenue
  - Unrestricted General Fund Revenue
  - Designated General Fund Revenue
  - Other Restricted Revenue
  - Federal Revenue
- Only a couple minor changes made to unrestricted revenue
  - LPV Gambling Tax shown as unrestricted revenue
  - Dividends from component units (state corporations) shown as unrestricted revenue
  - These changes ensure consistency between our revenue forecast, and budget protocol

Formerly grouped as “restricted”



# FY 11 and FY 12 Total Revenue



Revenue Type	FY 11 (\$M)	FY 12 (\$M)
<b>Unrestricted General Fund</b>		
Oil Revenue	\$ 4,673.9	\$ 5,061.1
Other Sources (except Federal & Investment)	\$ 480.5	\$ 487.1
Investment Revenue	\$ 217.4	\$ 195.7
<b>Subtotal Unrestricted</b>	<b>\$ 5,371.8</b>	<b>\$ 5,743.9</b>
<b>Designated General Fund</b>		
Other Sources (except Federal & Investment)	\$ 281.6	\$ 282.3
Investment Revenue	\$ 59.7	\$ 42.0
<b>Subtotal Restricted</b>	<b>\$ 341.3</b>	<b>\$ 324.3</b>
<b>Other Restricted Revenue</b>		
Oil Revenue	\$ 669.7	\$ 755.3
Other Sources (except Federal & Investment)	\$ 209.7	\$ 190.3
Investment Revenue	\$ 3,384.5	\$ 3,283.4
<b>Subtotal Restricted</b>	<b>\$ 4,263.9</b>	<b>\$ 4,229.0</b>
<b>Federal Revenue</b>		
Oil Revenue	\$ 19.5	\$ 19.5
Federal Receipts	\$ 3,087.0	\$ 2,987.0
<b>Subtotal Restricted</b>	<b>\$ 3,106.5</b>	<b>\$ 3,006.5</b>
<b>Total State Revenue</b>	<b>\$ 13,083.4</b>	<b>\$ 13,303.7</b>



# FY 11 & FY 12 General Fund Unrestricted Revenue



Revenue Type	FY 11 (\$M)	% Total	FY 12 (\$ M)	% Total
Royalty - Net PF / SF	\$ 1,510.1	28.1%	\$ 1,666.6	29.0%
Production Tax	\$ 2,614.6	48.7%	\$ 2,737.6	47.7%
Corp Income Tax	\$ 445.0	8.3%	\$ 555.0	9.7%
Property Tax	<u>\$ 104.1</u>	<u>1.9%</u>	<u>\$ 101.9</u>	<u>1.8%</u>
Subtotal Oil Revenue	\$ 4,673.9	87.0%	\$ 5,061.1	88.1%
Non-Oil Revenue	<u>\$ 697.9</u>	<u>13.0%</u>	<u>\$ 682.8</u>	<u>11.9%</u>
<b>Total Revenue</b>	<b>\$ 5,371.8</b>	<b>100.0%</b>	<b>\$ 5,743.9</b>	<b>100.0%</b>



# FY 11 and FY 12 Unrestricted Non-Oil Revenue Detail



Revenue Type	FY 11 (\$M)	% Total	FY 12 (\$M)	% Total
<b>Taxes</b>				
Corporate Income	\$ 80.0	11.5%	\$ 85.0	12.4%
Mining	\$ 46.7	6.7%	\$ 47.0	6.9%
Insurance Premium	\$ 50.1	7.2%	\$ 51.6	7.6%
Tobacco	\$ 44.4	6.4%	\$ 44.3	6.5%
Motor Fuel	\$ 38.5	5.5%	\$ 38.8	5.7%
Other Taxes	<u>\$ 61.3</u>	<u>8.8%</u>	<u>\$ 61.4</u>	<u>9.0%</u>
<b>Subtotal Taxes</b>	<b>\$ 321.0</b>	<b>46.0%</b>	<b>\$ 328.1</b>	<b>48.1%</b>
<b>Investments</b>	<b>\$ 217.4</b>	<b>31.2%</b>	<b>\$ 195.7</b>	<b>28.7%</b>
<b>Other *</b>	<b>\$ 159.5</b>	<b>22.9%</b>	<b>\$ 159.0</b>	<b>23.3%</b>
<b>Total Non-Oil</b>	<b>\$ 697.9</b>	<b>100.0%</b>	<b>\$ 682.8</b>	<b>100.0%</b>

NOTE: This presentation only includes the portion of revenue that is included in the "Unrestricted General Fund" category.

\*Other includes Charges for Services, Fines and Forfeitures, Licenses & Permits, Rents & Royalties, and Miscellaneous.



# 10-Year Revenue/Spending Projection

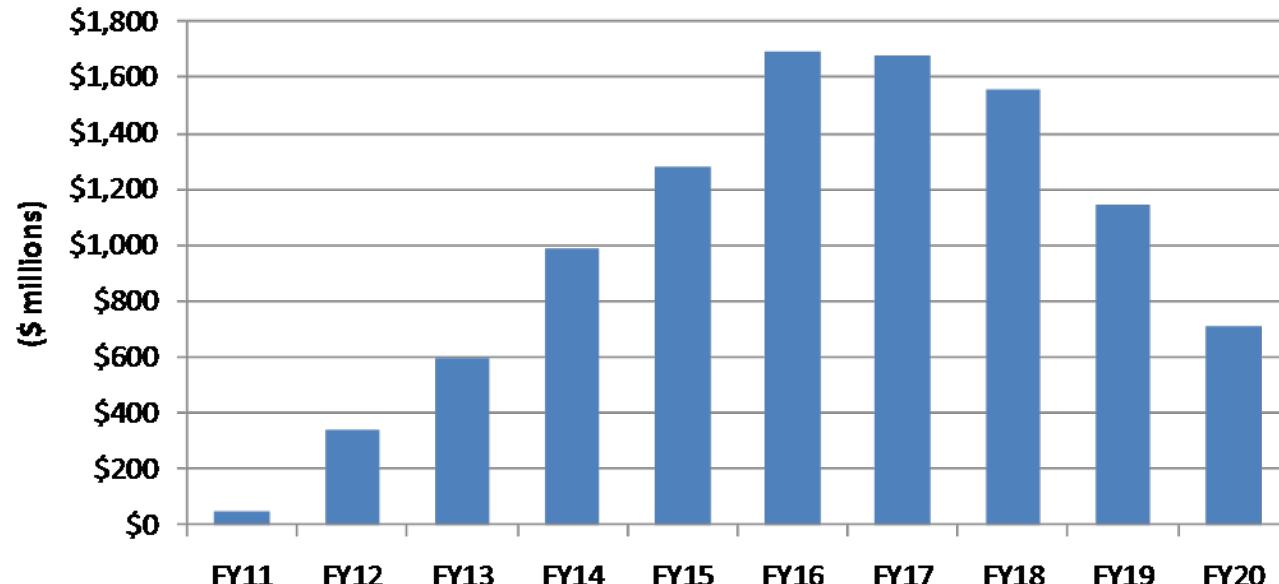


# 10-Year Revenue and Spending

Assumes Fall 2010 Revenue and 3% budget escalation from FY12



## Budget Surplus/Shortfall



Revenue vs. Spending (\$Millions)	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20
General Fund Unrestricted Revenues	5,452.2	5,790.3	6,207.7	6,767.8	7,233.1	7,822.4	7,992.7	8,060.4	7,845.7	7,610.7
General Fund Expenses	5,403.6	5,446.4	5,609.8	5,778.1	5,951.4	6,130.0	6,313.9	6,503.3	6,698.4	6,899.3
Budget Surplus/Shortfall	48.6	343.9	597.9	989.7	1,281.7	1,692.4	1,678.9	1,557.1	1,147.3	711.3
Reserve Balances										
CBRF Total	10,016.8	10,589.0	11,195.2	11,837.3	12,517.8	13,239.1	14,003.7	14,814.6	15,674.6	16,587.0
Statutory Budget Reserve Balance	1,048.6	1,392.4	1,990.3	2,980.0	4,261.7	5,954.2	7,633.0	9,190.1	10,337.4	11,048.7
Total Reserve Balances	11,065.4	11,981.4	13,185.5	14,817.4	16,779.5	19,193.3	21,636.7	24,004.7	26,012.0	27,635.7

Source: OMB FY 2012 10-year plan. FY 11 and FY 12 revenues shown include adjustments for corporate dividends, reappropriations, and carry forwards and do not exactly match numbers in the RSB.

*Appropriations projections do not represent a commitment by the Administration to propose spending at a particular level in FY13 or any future year. The 10 year forecast shows that unanticipated shortfalls during the period could be filled primarily through the use of reserve funds. However, other options could be used in whole, or in part. The plan will be revisited as conditions warrant.*



# How Production Tax Is Calculated



# FY 10 Production Tax Calculation



	Per Barrel	Barrels	Value (\$ million)
Avg ANS Oil Price (\$/bbl) & Daily Production (bbls)	\$74.90	643,517	\$48.2 / day
Annual Production (bbl)			
<b>Total Annual Production/Value</b>		<b>234,883,705</b>	<b>\$17,592.8</b>
R royalty and Federal barrels		(31,067,340)	(\$2,326.9)
<b>Taxable barrels</b>		<b>203,816,365</b>	<b>\$15,265.8</b>
Downstream (Transportation) Costs (\$/bbl)			
ANS Marine Transportation	(\$2.21)		
TAPS Tariff	(\$3.81)		
Other	\$0.00		
<b>Total Transportation Costs</b>	<b>(\$6.02)</b>	<b>203,816,365</b>	<b>(\$1,227.0)</b>
Lease Expenditures			
Deductible Operating Expenditures	(\$10.64)		(\$2,168.7)
Deductible Capital Expenditures	(\$8.55)		(\$1,742.0)
<b>Total Lease Expenditures</b>	<b>(\$19.19)</b>	<b>203,816,345</b>	<b>(\$3,910.7)</b>
<b>Production Tax Value (PTV)</b>	<b>\$49.69</b>	<b>203,816,345</b>	<b>\$10,128.1</b>
Production Tax			
Base Tax (25%*PTV)			\$2,532.0
Progressive Tax Rate = $(\$49.69 - \$30) * 0.4\% = 7.9\%$			
Progressive Tax = $(7.9\% * PTV)$			\$797.8
<b>Total Tax Due before credits</b>			<b>\$3,329.8</b>
Credits Applied Against Taxes			(\$350.0)
<b>Total Tax after credits</b>			<b>\$2,979.8</b>

Source: Department of Revenue Fall 2010 Revenue Sources Book, Appendix D

This simple model assumes constant production, price, and expenditures for the entire year; results will differ from our larger model and forecast.  
The per-barrel expenditures shown are per taxable barrel and do not reflect expenditures per all barrels produced.



# FY 11 Production Tax Projected



	Per Barrel	Barrels	Value (\$ million)
Avg ANS Oil Price (\$/bbl) & Daily Production (bbls)	\$77.96	615,902	\$48.0 / day
Annual Production (bbl)			
<b>Total Annual Production/Value</b>		<b>224,804,230</b>	<b>\$17,525.7</b>
Royalty and Federal barrels		(34,100,490)	(\$2,658.5)
<b>Taxable barrels</b>		<b>190,703,740</b>	<b>\$14,867.3</b>
Downstream (Transportation) Costs (\$/bbl)			
ANS Marine Transportation	(\$2.07)		
TAPS Tariff	(\$4.17)		
Other	\$0.24		
<b>Total Transportation Costs</b>	<b>(\$6.00)</b>	<b>190,730,740</b>	<b>(\$1,144.2)</b>
Lease Expenditures			
Deductible Operating Expenditures	(\$12.99)		(\$2,477.0)
Deductible Capital Expenditures	(\$10.43)		(\$1,988.4)
<b>Total Lease Expenditures</b>	<b>(\$23.42)</b>	<b>190,703,740</b>	<b>(\$4,465.4)</b>
<b>Production Tax Value (PTV)</b>	<b>\$48.54</b>	<b>190,703,740</b>	<b>\$9,257.6</b>
Production Tax			
Base Tax (25%*PTV)			\$2,314.4
Progressive Tax Rate = $(\$48.54 - \$30) * 0.4\% = 7.4\%$			
Progressive Tax = (7.4% * PTV)			\$686.7
<b>Total Tax Due before credits</b>			<b>\$3,001.1</b>
Credits Applied Against Taxes			(\$400.0)
<b>Total Tax after credits</b>			<b>\$2,601.1</b>

Source: Department of Revenue Fall 2010 Revenue Sources Book, Appendix D

This simple model assumes constant production, price, and expenditures for the entire year; results will differ from our larger model and forecast.  
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# FY 12 Production Tax Projected



	Per Barrel	Barrels	Value (\$ million)
Avg ANS Oil Price (\$/bbl) & Daily Production (bbls)	\$82.67	622,182	\$51.4 / day
Annual Production (bbl)			
<b>Total Annual Production/Value</b>		<b>227,096,430</b>	<b>\$18,774.1</b>
Royalty and Federal barrels		(34,669,890)	(\$2,866.2)
<b>Taxable barrels</b>		<b>192,426,540</b>	<b>\$15,907.9</b>
Downstream (Transportation) Costs (\$/bbl)			
ANS Marine Transportation	(\$2.05)		
TAPS Tariff	(\$4.67)		
Other	\$0.33		
<b>Total Transportation Costs</b>	<b>(\$6.39)</b>	<b>192,426,540</b>	<b>(\$1,229.6)</b>
Lease Expenditures			
Deductible Operating Expenditures	(\$12.86)		(\$2,477.0)
Deductible Capital Expenditures	(\$13.14)		(\$1,988.4)
<b>Total Lease Expenditures</b>	<b>(\$26.00)</b>	<b>192,426,540</b>	<b>(\$5,002.4)</b>
<b>Production Tax Value (PTV)</b>	<b>\$50.28</b>	<b>192,426,540</b>	<b>\$9,675.9</b>
Production Tax			
Base Tax (25%*PTV)			\$2,419.0
Progressive Tax Rate = $(\$50.28 - \$30) * 0.4\% = 8.1\%$			
Progressive Tax = $(8.1\% * PTV)$			\$785.0
<b>Total Tax Due before credits</b>			<b>\$3,204.0</b>
Credits Applied Against Taxes			(\$450.0)
<b>Total Tax after credits</b>			<b>\$2,754.0</b>

Source: Department of Revenue Fall 2010 Revenue Sources Book, Appendix D

This simple model assumes constant production, price, and expenditures for the entire year; results will differ from our larger model and forecast.  
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# Components of Production Tax Calculation

- Production
- Price
- Lease Expenditures
- Tax Credits



# Fall 2010 Oil Production Forecast



# Three Categories of Forecasted Production

- 1) Currently Producing- Includes base production and enhanced recovery production from investment in rate enhancing activities (perforations, stimulations, well workovers, gas and water injection support).
- 2) Currently under Development- New projects that are currently funded or awaiting project sanction in near future.



# Three Categories of Forecasted Production

- 3) Currently Under Evaluation- Includes technically viable projects in the stage where engineering, cost, risk and reward are being actively evaluated. Unfunded but are considered to have a high chance of being brought to fruition.



# Factors That Affect Production Forecasting



## 1. GEOLOGY

- Rock type and formation characteristics
- Depth, thickness, pressure
- Oil & gas characteristics (oil gravity, viscosity, water content, etc.)

## 2. DEVELOPMENT PLAN

- Well density and development rate
- Well bore size and completion technique
- Artificial lift and enhanced oil recovery
- Facilities & surface operations

## 3. COMMERCIAL

- Project economics
- Oil price and market conditions
- Government Policy: access, regulation, taxation

## 4. PRODUCTION PROFILE

- History, stage of depletion
- Use production profile to extrapolate trends

## 5. TIMING!



# North Slope Production Decline

**FY 1988: production peak → 2.01 million barrels per day (bpd).**

**FY 2010: production → 644,000 bpd, a 68% decline since peak.**

**FY 1988 to date: production decline rate ~ 5% per year, on average.**

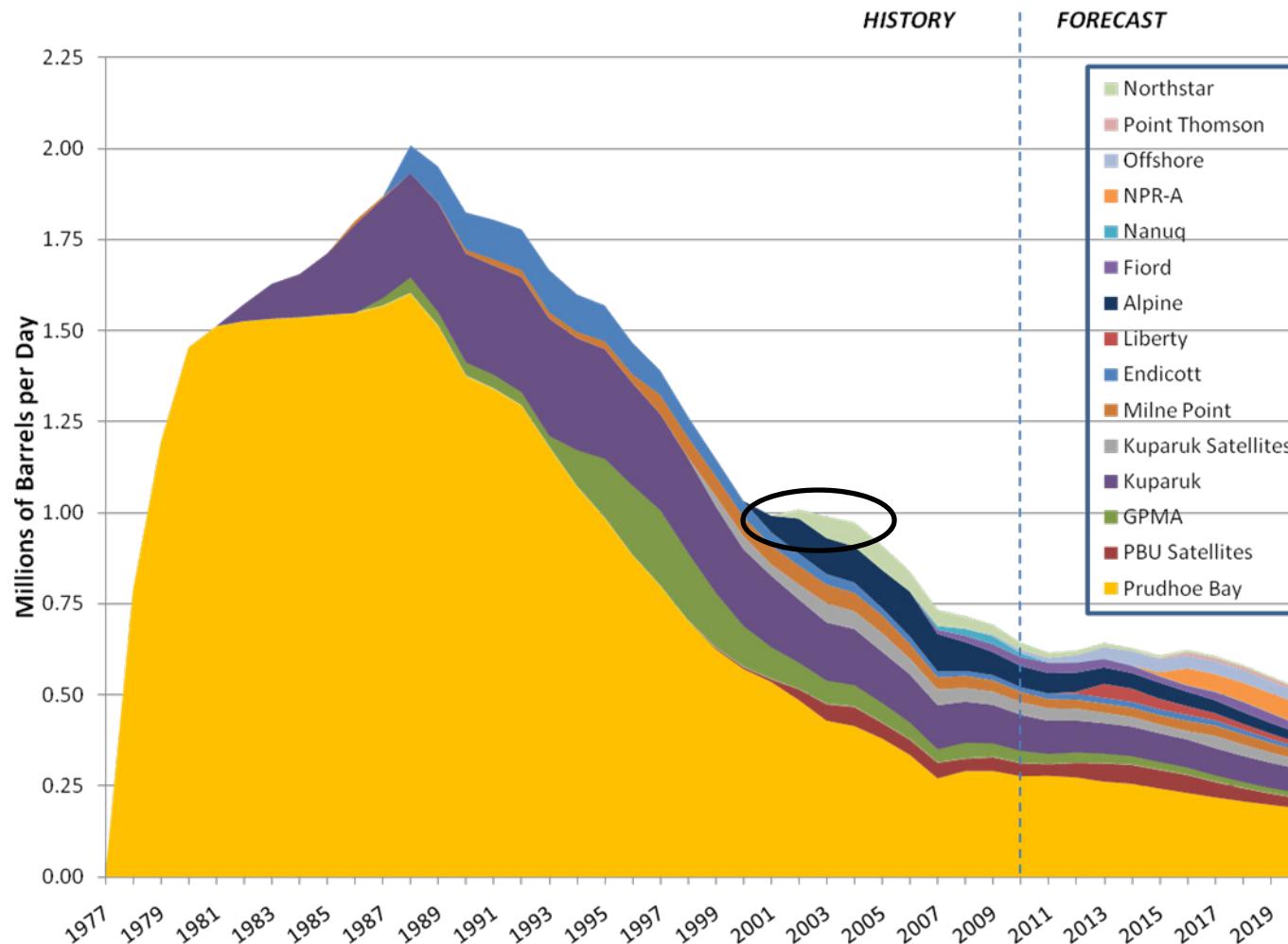
**Over the last 10 years, production decline rate ~ 4.2% per year, on average.**

**We expect the decline rate to flatten out to 3.2% per year, on average, through FY 2030.**



# ANS Production History & Forecast

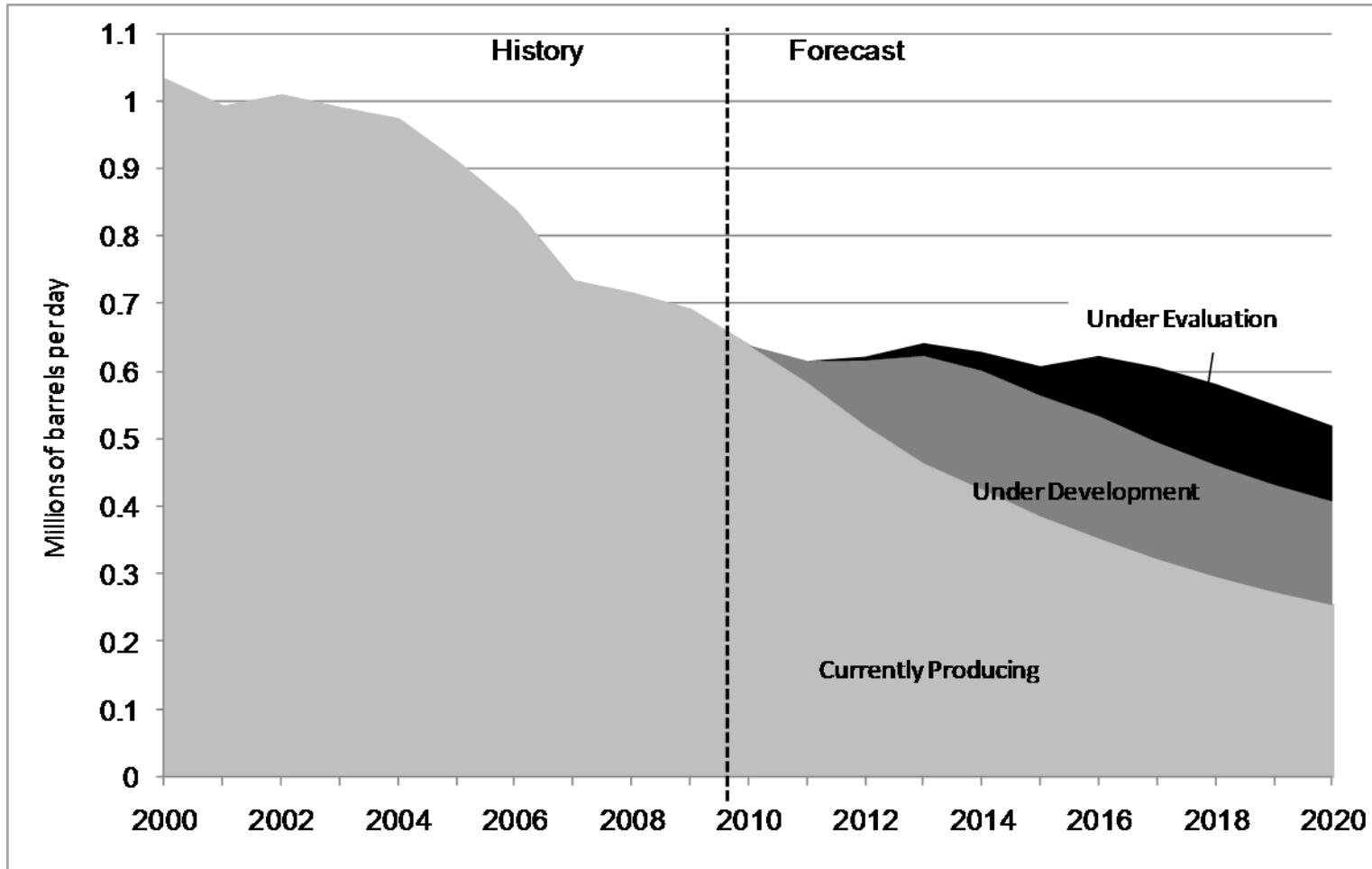
Annual North Slope Production and Contribution of Fields





# Forecasted ANS Production

## FY 2010 - 2020





# Conclusion on Production

- Production forecasting requires consideration of each project's geology, development plans, commerciality, production profiles, decline curves and timing.
- Department uses extensive well and field specific data acquired from producers, AOGCC, and DNR
- New field development is very important in mitigating decline rates.



# Fall 2010 Oil Price Forecast



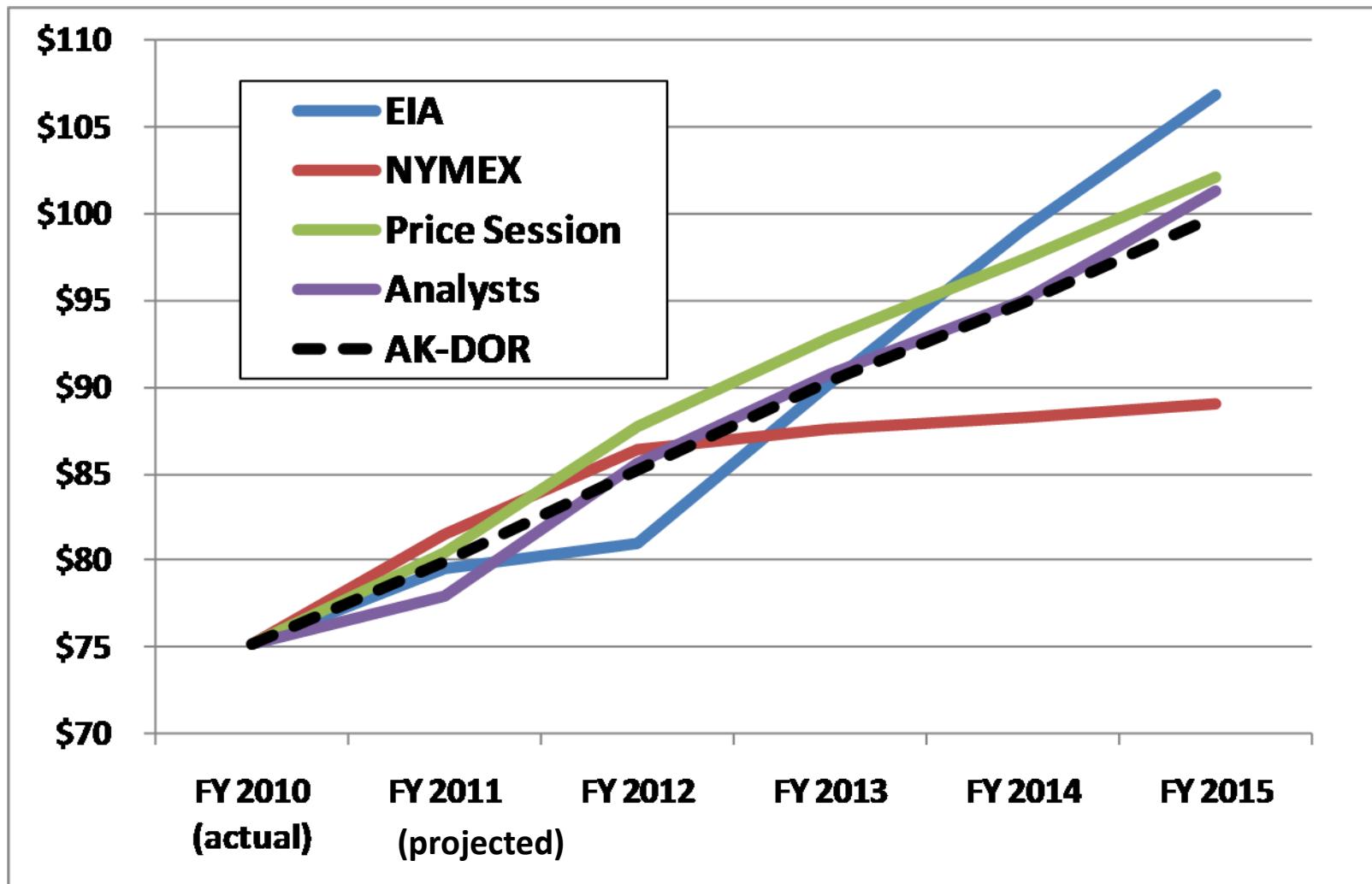
# Price Forecast Methodology



- **FY 2011- 2015: Average of participant forecasts from Price Forecasting Session, and other sources**
- **27 Participants from DOR, DNR, DOL, OMB, University, Legislative Finance and outside participants**
- **Presentations: supply, demand, geopolitics, financial markets, outside expert forecasts, etc.**
- **Forecasting Session outcome blended equally with NYMEX, EIA, and analysts to derive price forecast.**
- **Beyond FY 2015: Constant real price, 2.75% inflation**



# Price Forecasts as of October 2010



WTI, nominal dollars per barrel. Sources: DOR, Bloomberg, NYMEX, Energy Information Agency



# Fall 2010 DOR Oil Price Forecast



	Real \$		Nominal \$	
	WTI	ANS	WTI	ANS
FY 2010 (actual)	75.21	74.90	75.21	74.90
FY 2011 (projected)	77.75	75.88	79.89	77.96
FY 2012	80.67	78.30	85.17	82.67
FY 2013	83.30	80.99	90.36	87.86
FY 2014	85.15	82.90	94.91	92.41
FY 2015	87.17	84.99	99.84	97.34

\*Note: FY 2011 forecast includes one quarter of actual prices.

Forecast is made in terms of Real WTI, then adjusted using 2.75% inflation rate and \$2.50 nominal differential to ANS.



# Fall 2010

# Lease Expenditure

# Forecast

# (Oil Company Spending)



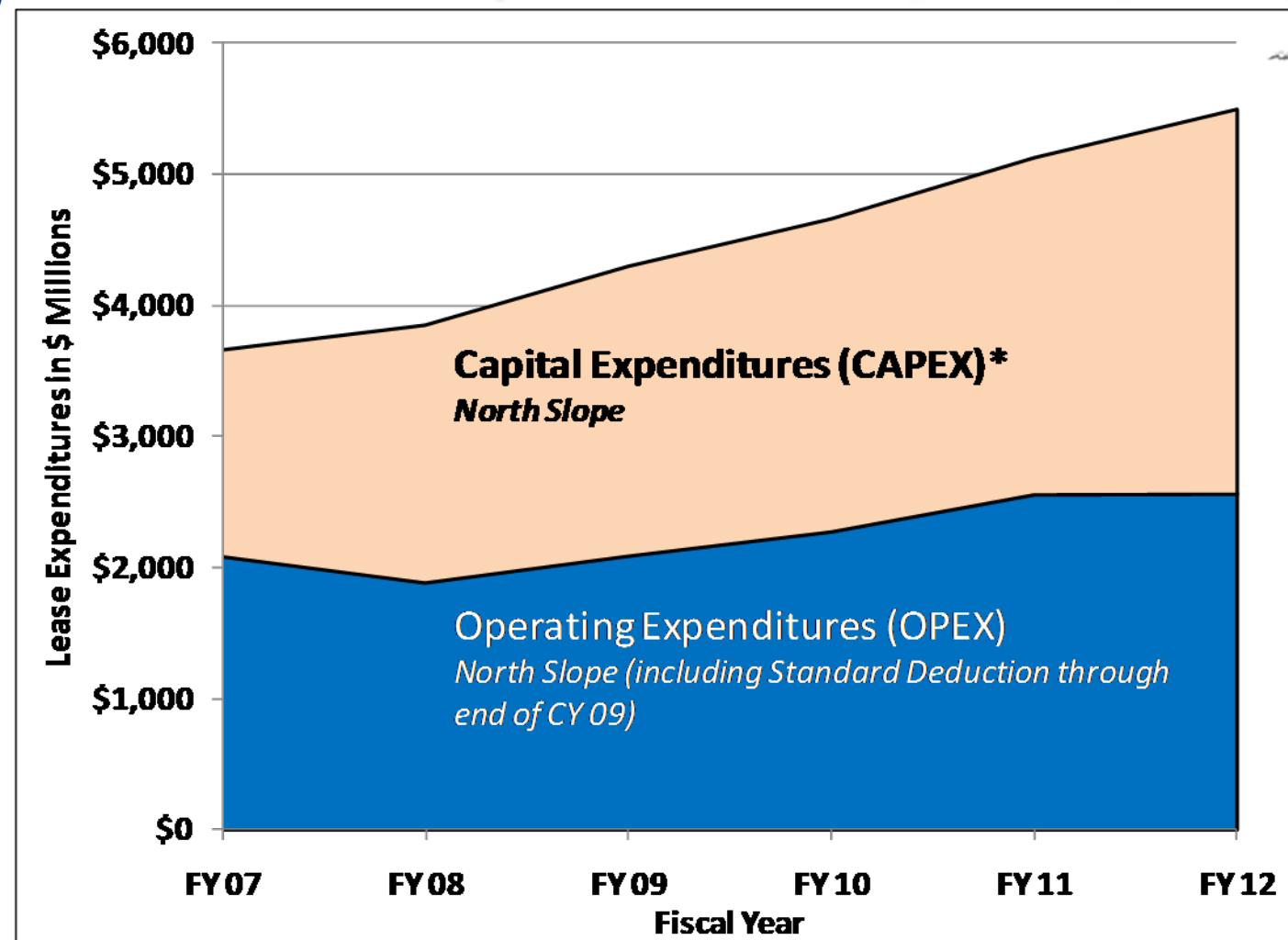
# Lease Expenditures (Costs)



- **FY 2007 – FY 2010 lease expenditures based on unaudited company reported expenditure estimates submitted on production tax monthly forms and annual returns**
- **FY 2011 – FY 2012 lease expenditure forecasts were compiled from company submitted information**
- **Under ACES, DOR requests expenditure forecast estimates and other documentation from oil companies**
- **Longer term spending – particularly capital investment - is highly uncertain**



# Lease Expenditures (Costs)



\* Capital Expenditures shown are based on company reporting. Includes capital spending on new exploration, development spending, and capital spending required to maintain existing operations and production.

Source: Department of Revenue from production tax monthly information forms, annual returns, and company forecasts.



# Lease Expenditures per Barrel

	FY 07	FY 08	FY 09	FY 10	FY 11	FY 12
<b>Lease Expenditures (\$ millions)</b>						
Operating Expenditures (OPEX)	2,081	1,881	2,085	2,270	2,553	2,558
Capital Expenditures (CAPEX)	1,578	1,967	2,212	2,389	2,572	2,937
Production (bpd)	739,702	715,950	692,127	643,517	615,902	622,182
<b>Lease Expenditures per barrel (\$)</b>						
OPEX per barrel (\$)	7.71	7.20	8.25	9.66	11.36	11.26
CAPEX per barrel (\$)	5.84	7.53	8.76	10.17	11.44	12.93

Source: Department of Revenue from production tax monthly information forms, annual returns, and company forecasts  
Operating expenditures include "standard deduction" through end of CY 2009.



# Tax Credits



# Production Tax Credits



- **Qualified Capital Expenditure Credit** – 20% credit for qualified capital expenditures (40% for well lease expenditures outside North Slope).
- **Carried-Forward Annual Loss Credit** – 25% credit for carried-forward annual loss.
- **Small Producer / New Area Development Credit** – Up to \$12 million / year for small producers and up to \$6 million / year for production outside North Slope and Cook Inlet.
- **Alternative Credit for Exploration** – 30% or 40% of eligible exploration expenditures if certain criteria are met.
- **Cook Inlet Jack-Up Rig Credit** – 80% to 100% credit for first three exploration wells drilled using jack-up rig in Cook Inlet.
- **Chapter 3 of Fall 2010 Revenue Sources Book provides detailed information about these and other tax credits**



# Production Tax Credits Reported

