



# Alaska Department of Revenue



## Fall 2015 Revenue Forecast Presentation

January 26, 2016

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Alaska Department of Revenue

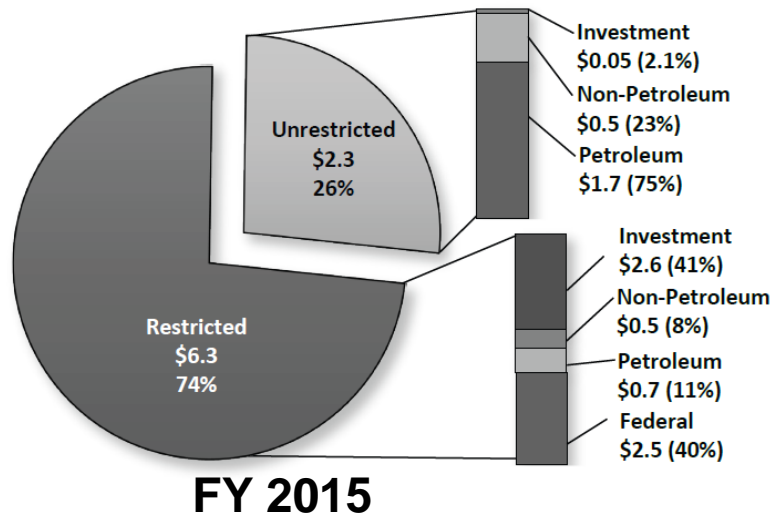
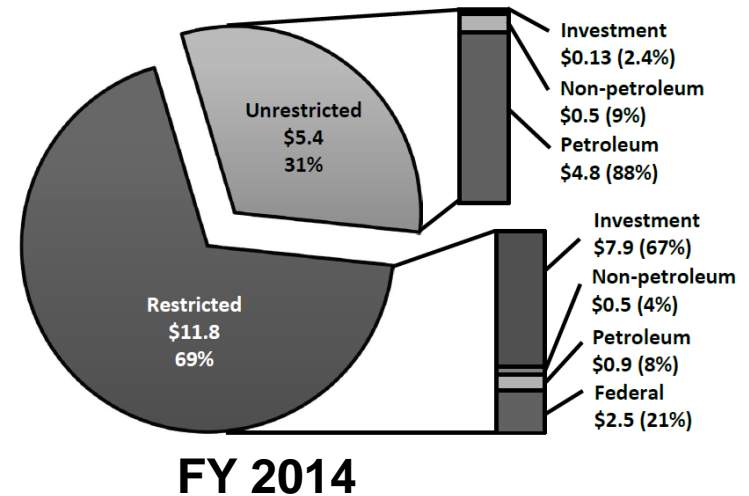
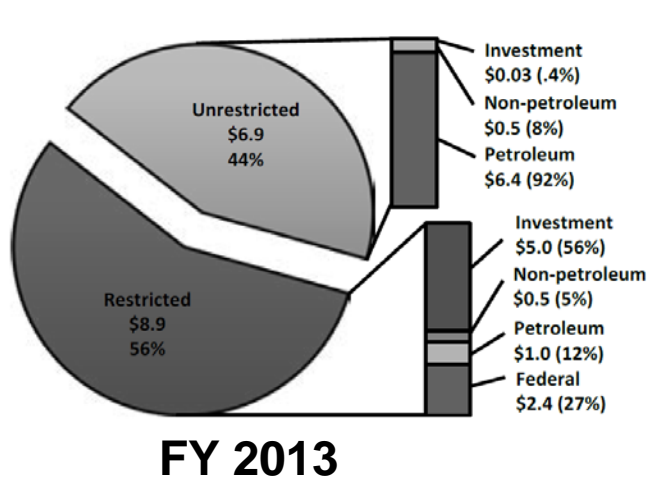


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## Forward Looking Statements

- All data is based on the DOR Fall 2015 Forecast.
- This is a forecast. All figures and narratives in this document that are not based on events that have already occurred, constitute forecasts or “forward-looking statements.” These numbers are projections based on assumptions regarding uncertain future events and the responses to those events. Such figures are, therefore, subject to uncertainties and actual results will differ, potentially materially, from those anticipated. The Department of Revenue attempts to capture these uncertainties in order to provide policymakers and the general public with a general understanding of the scale and scope of future revenue streams. The official forecast process takes into account many possible outcomes and attempts to minimize deviations from what is likely to happen. Readers are cautioned to take uncertainty into account when considering forward-looking statements in making decisions. This forecast supersedes all prior estimates or forecasts as the official forecast of the department. Therefore, all prior forecasts should be used only for comparison purposes.

# Structure of Revenue FY 2013, FY 2014, FY 2015



# FALL 2015

## Revenue Forecast



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## Methods: What Do We Forecast at DOR?

### Mostly Petroleum and Non-petroleum Revenue

- We directly forecast **Petroleum Revenue**
  - the largest component, accounting for 75% of state unrestricted revenue in FY 2015
  - “Petroleum Revenue” includes severance taxes, royalties, corporate income tax, and all other revenue from oil companies
- We directly forecast **Non-petroleum Revenue**
- We use someone else’s forecast for **Investment Revenue**
- We use the Federal Revenue authorized for spending as the forecast
  - It is typically 20%-30% more than actually gets spent.
- DOR compiles all different revenue streams and compiles them in the annual Revenue Sources Book

## Oil Revenue Forecasting

### Three Factors for Production Tax Revenue Forecast

$\text{REVENUE} = (\text{Net value} * \text{Tax Rate}) - \text{Credits}$   
taken against liability<sup>1</sup>

$\text{Net value} = (\text{Price} * \text{Production}) - \text{Costs}$

1. Price

2. Production

3. Costs

1. Capital expenditures

2. Operating expenditures

3. Transportation cost



<sup>1</sup> DOR also forecasts refundable credits, but these are paid out of the General Fund and do not appear in the revenue forecast.

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## FALL 2015 HIGHLIGHTS

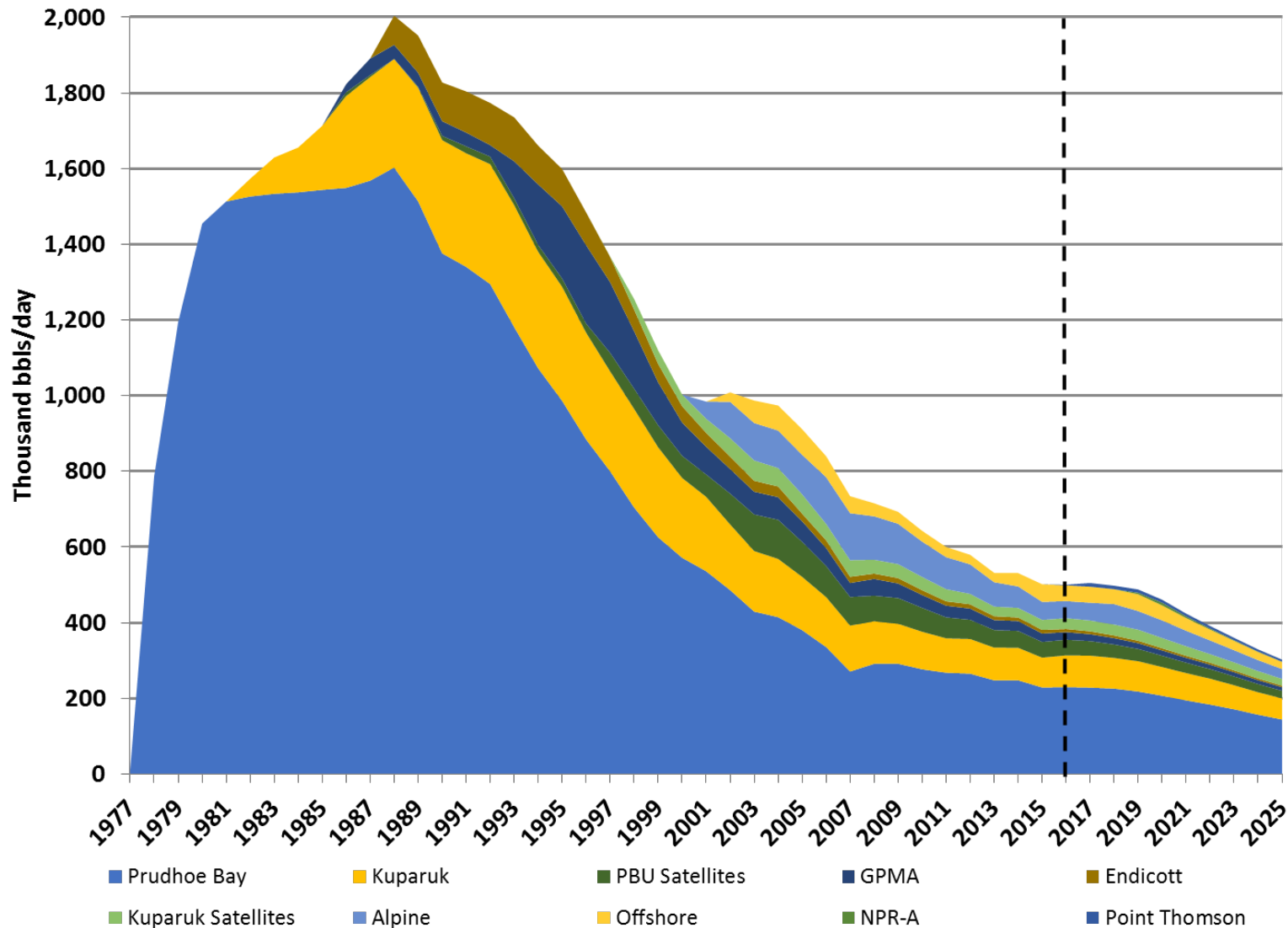
- Input changes relative to the 2015 Spring Forecast.
  - Oil price forecasts have been reduced for all years in the forecast.
    - Long term prices now expected to settle around \$50 - \$70 real.
  - Capital expenditures forecasts have been reduced for all years in the forecast.
  - Oil production forecasts have been reduced for all years in the forecast.
  - Correspondingly, unrestricted revenues have been revised downward.
- Revenue impacts largely due to change in oil price assumptions.
- Lease expenditure (or investment) in the oil fields expected to decline, which will lead to less expected “new” production in the future.
  - Many projects have been deferred until oil prices improve.

# Fall 2015 Production Forecast



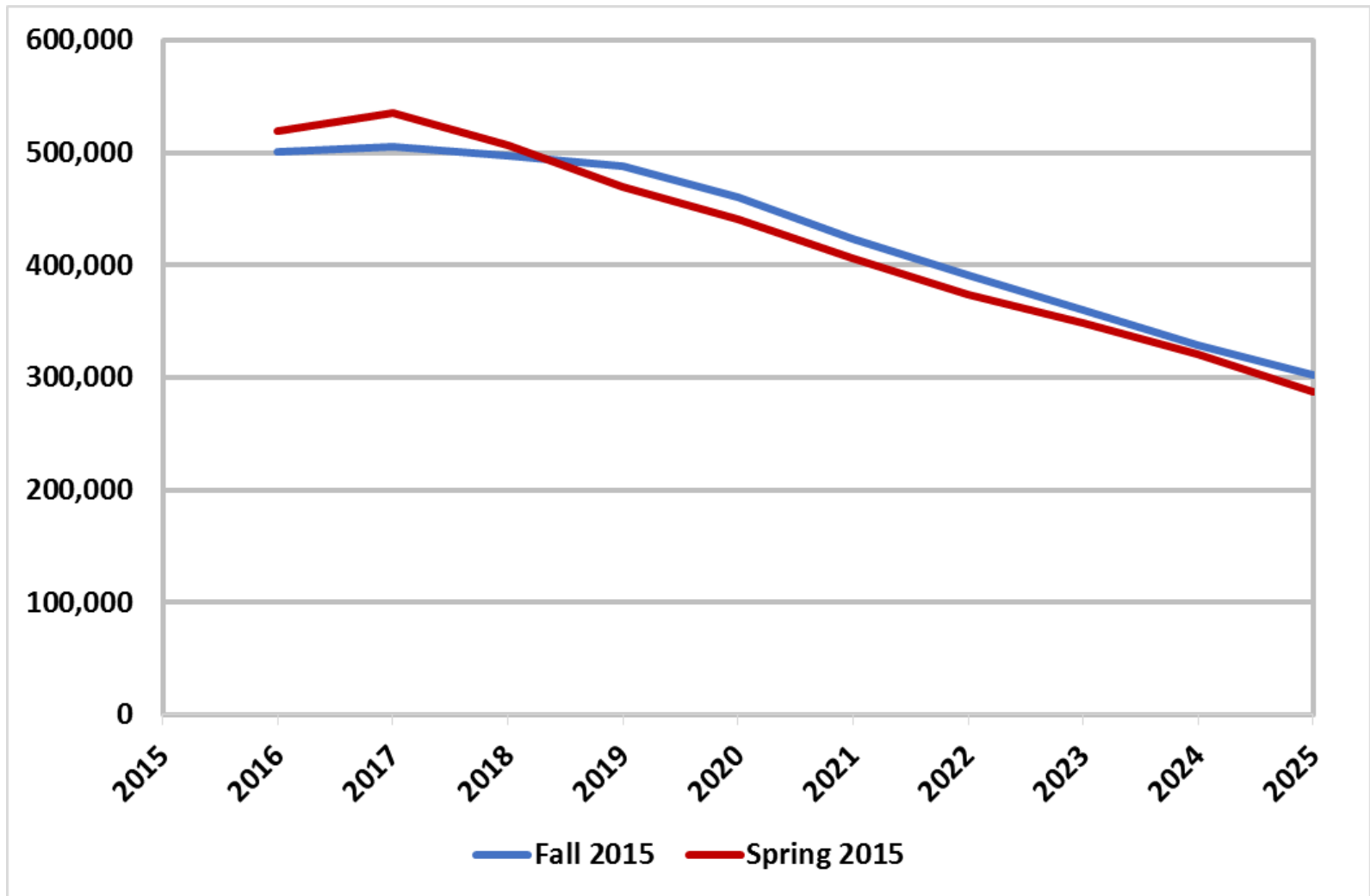


# Production History and Forecast



Source: Department of Revenue - Revenue Sources Book Fall 2015

# ANS Production Forecast Comparison



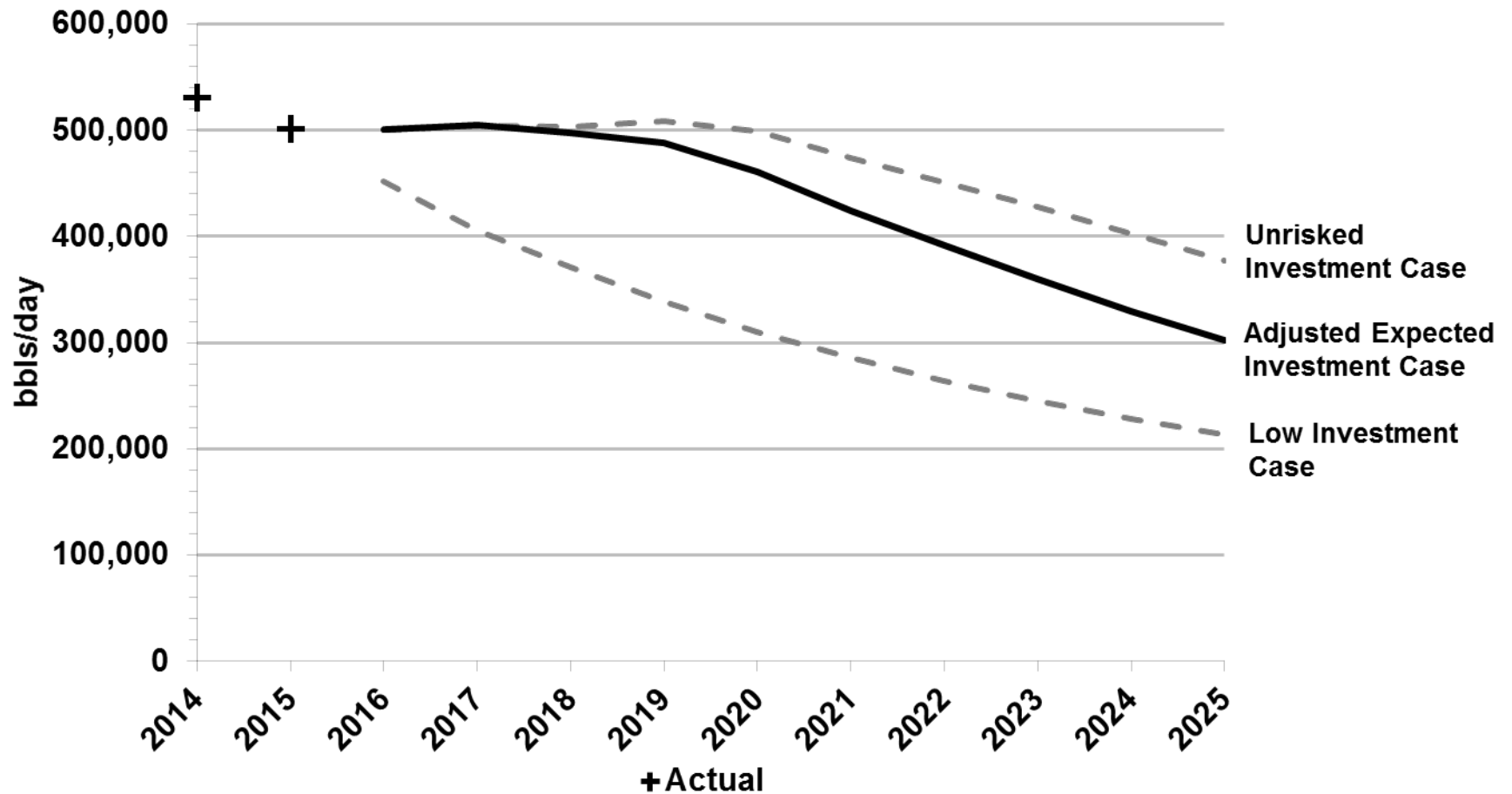
Source: Department of Revenue - Revenue Sources Book Spring 2015 and Fall 2015

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# ANS Oil Production Forecast

- **Volumes from Developed Reserves (Currently Producing):**
  - Oil from wells that are in production and following typical reservoir engineering optimization without major investment.
  - These volumes are from projects already in place and thus remain unadjusted for risk.
- **Volumes from Undeveloped Reserves and additional/accelerated Developed Reserves:**
  - Oil from projects that will add incremental oil to existing fields or will bring new fields into production.
  - Must have senior management approval and be allocated funds in the company's budget.
  - These volumes are risk-adjusted for commercial uncertainty.
- **Volumes from Contingent Resources:**
  - Oil from projects that are likely to occur in the future, but have not met the requirements of the previous category.
  - Oil reserves must be known and recovery is technically possible with current technology.
  - These volumes are more strongly risk-adjusted due to the commercial uncertainty and other risks.
- **DR + UDR + CR = Unrisked Investment Case**

# ANS Production Forecast

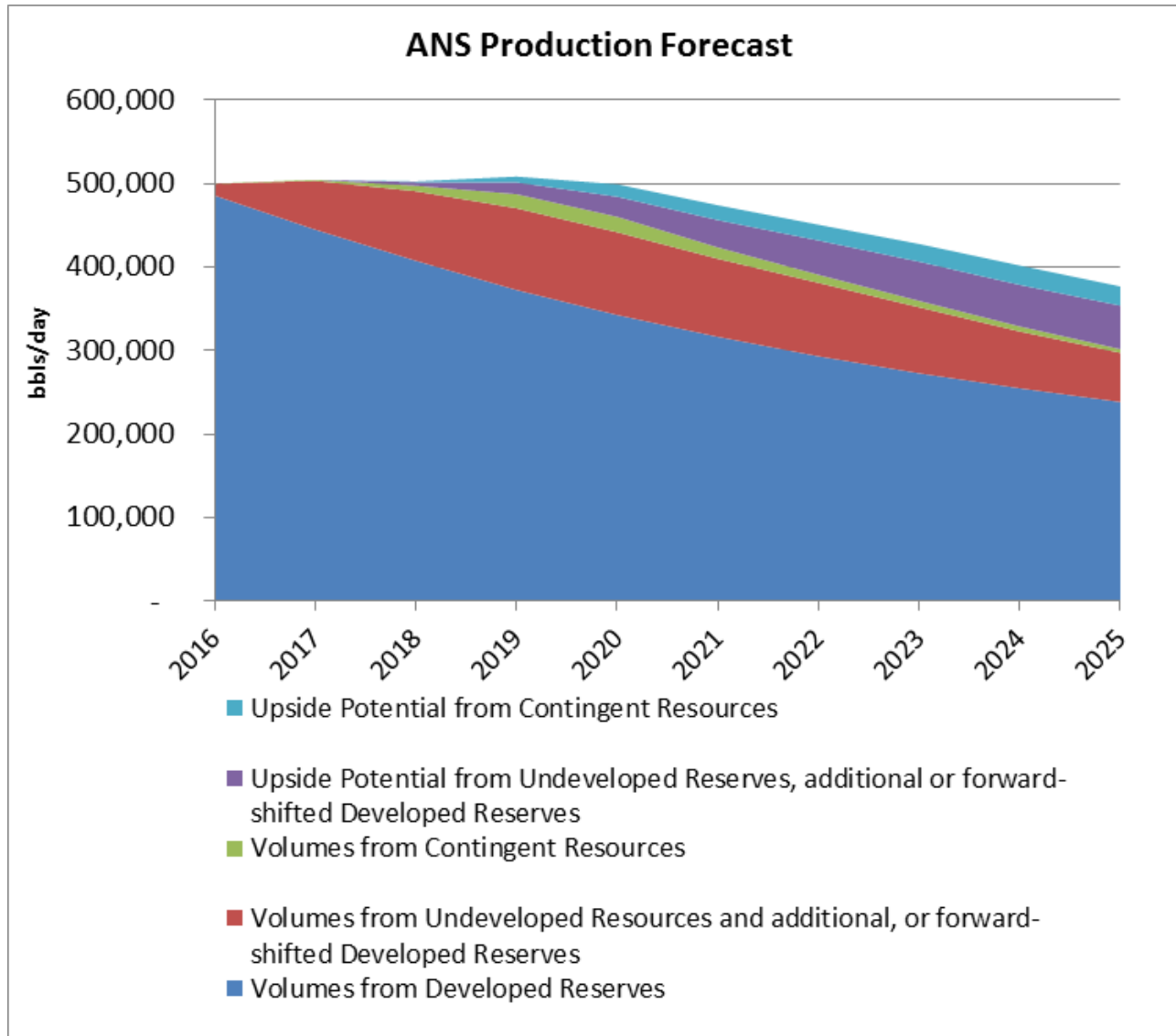


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## Dept. of Revenue Investment Cases

- **Unrisked Investment Case:**
  - This is a technical forecast provided by a DOR consulting petroleum engineering service.
  - It is based upon the expectations and best estimates of oil companies.
  - It includes forecasts from the production from developed, undeveloped oil reserves and contingent resources
- **Adjusted Expected Investment Case:**
  - This is the official revenue forecast.
  - Unrisked investment case adjusted for risks and uncertainties.
  - It is used for forecasting revenue beyond two years.
  - All developed reserves remain un-risked, but less certain projects are weighted over time.
- **Low Investment Case:**
  - This includes forecasts strictly from projects and wells that are already developed. This is risk weighted only at the technical level.
  - If no new projects came to fruition, this is what we would expect the future to look like.

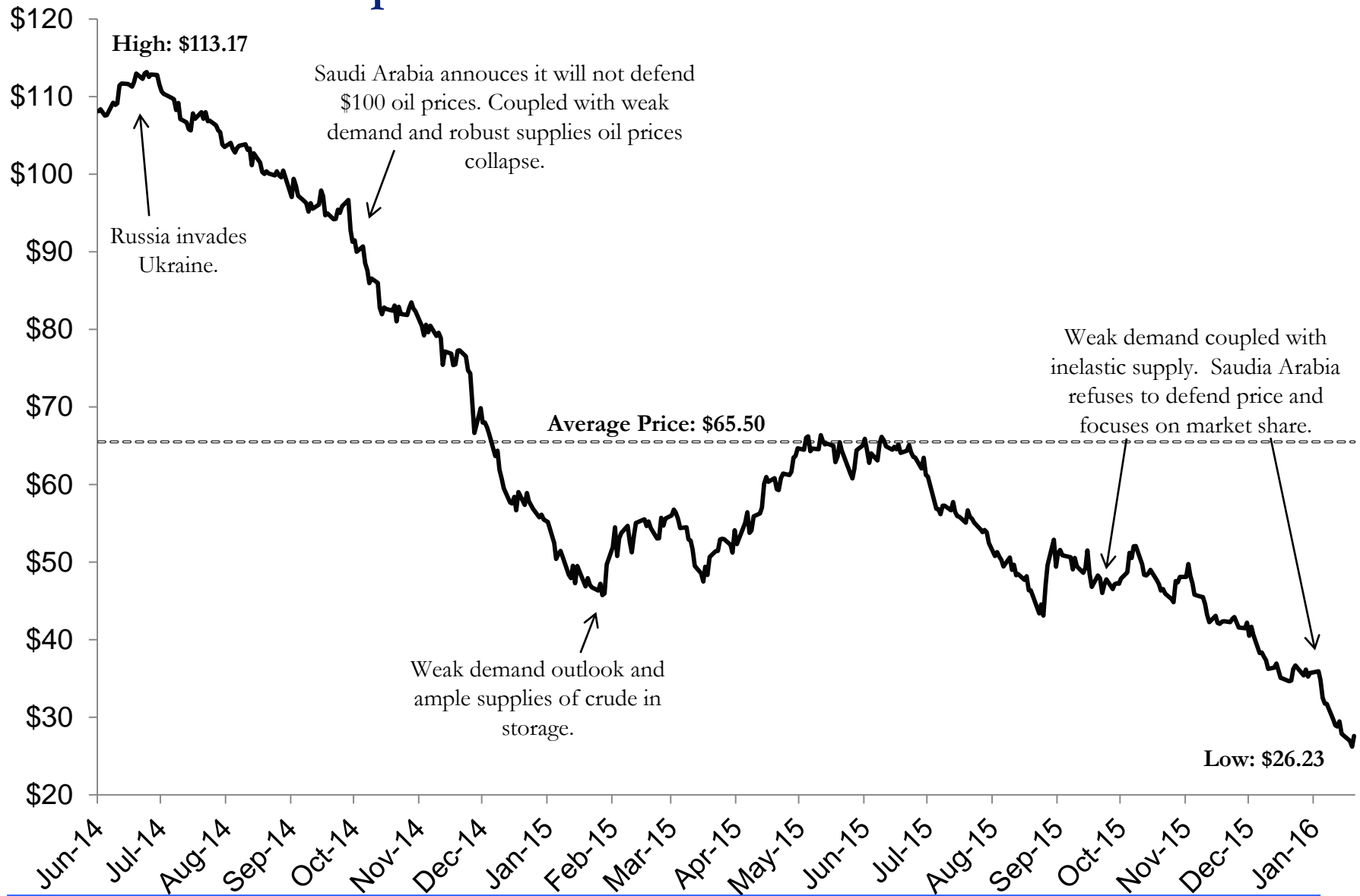
# ANS Production Forecast



# Fall 2015 Price Forecast



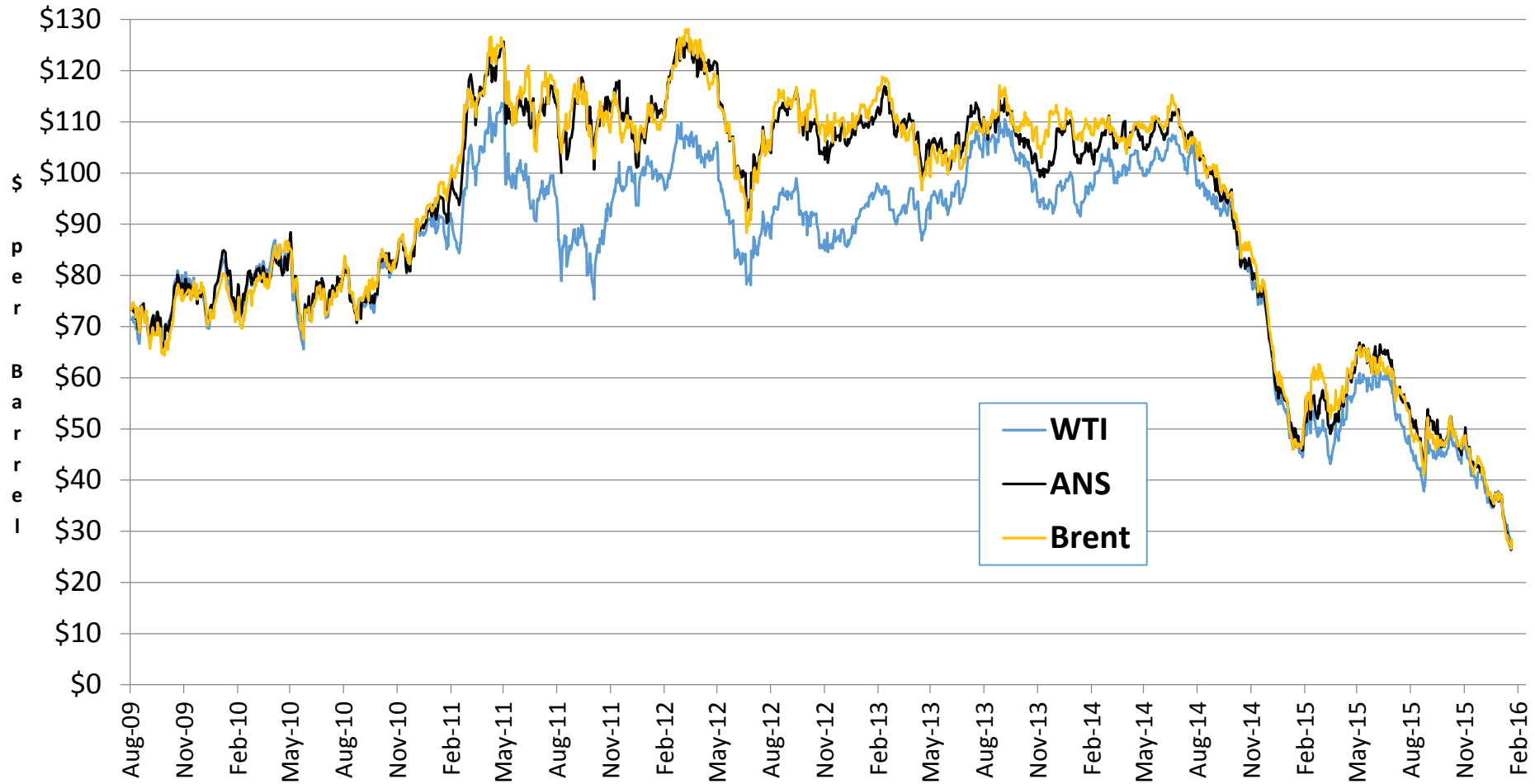
# Alaska North Slope Crude West Coast Price



Source: Department of Revenue – Economic Research



# Alaska North Slope West Coast, West Texas Intermediate and Brent Crude Prices 2009 through 2016



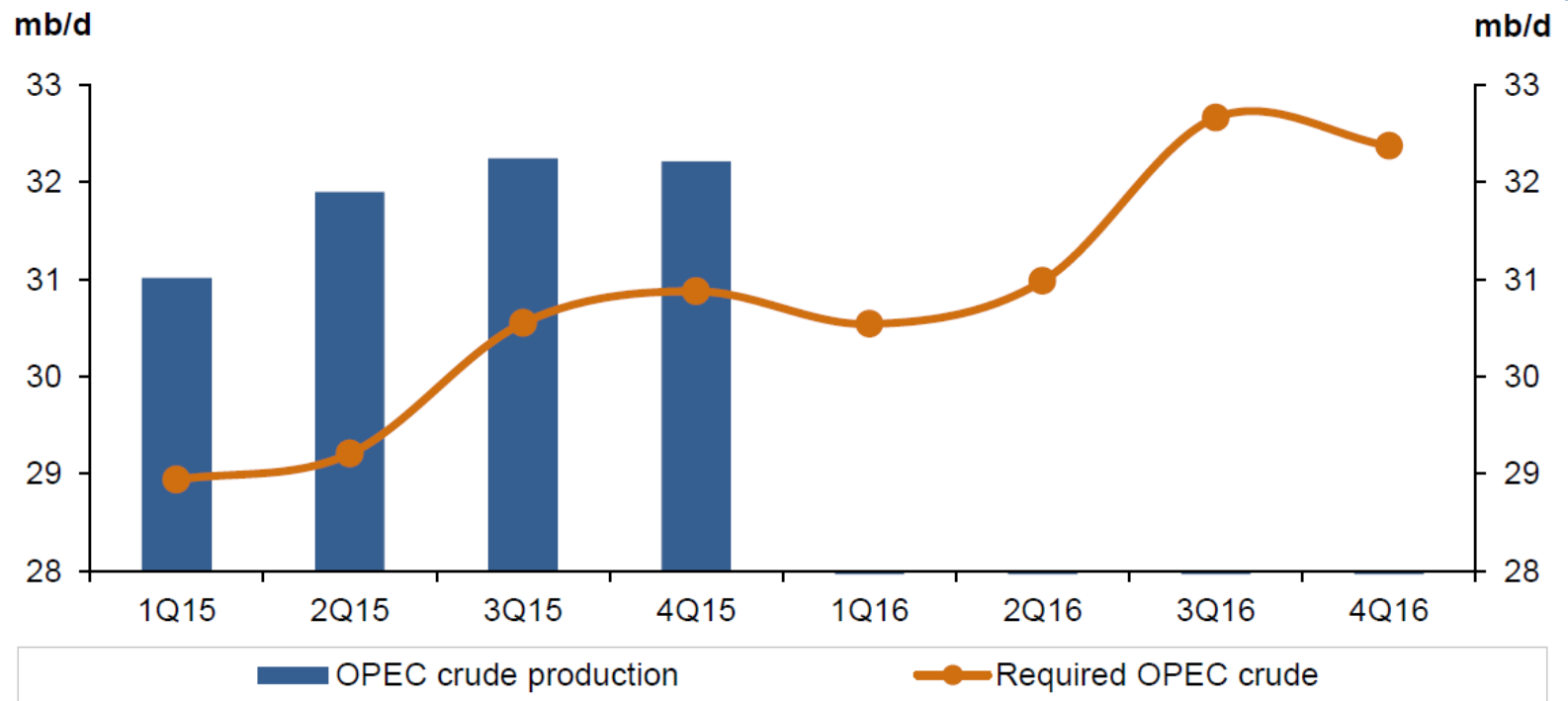
Source: Platts

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## Key Oil Price Drivers

- **Supply & Demand**
  - There are two main factors to monitor
    - Global spare capacity, since it is both a reflection of supply and demand. In other words, the Organization of Petroleum Exporting Countries (OPEC) spare capacity (flipping a switch) is key.
    - Cost of developing new oil supply.
- **Current Events**
  - Weak global demand.
  - Cost of supplying the marginal barrel has decreased dramatically.
  - OPEC (Saudi Arabia) maintains market share and accepts lower prices.
  - Cost of supply has fallen as new sources have been defined and developed.
    - Oil shale is a prime example.

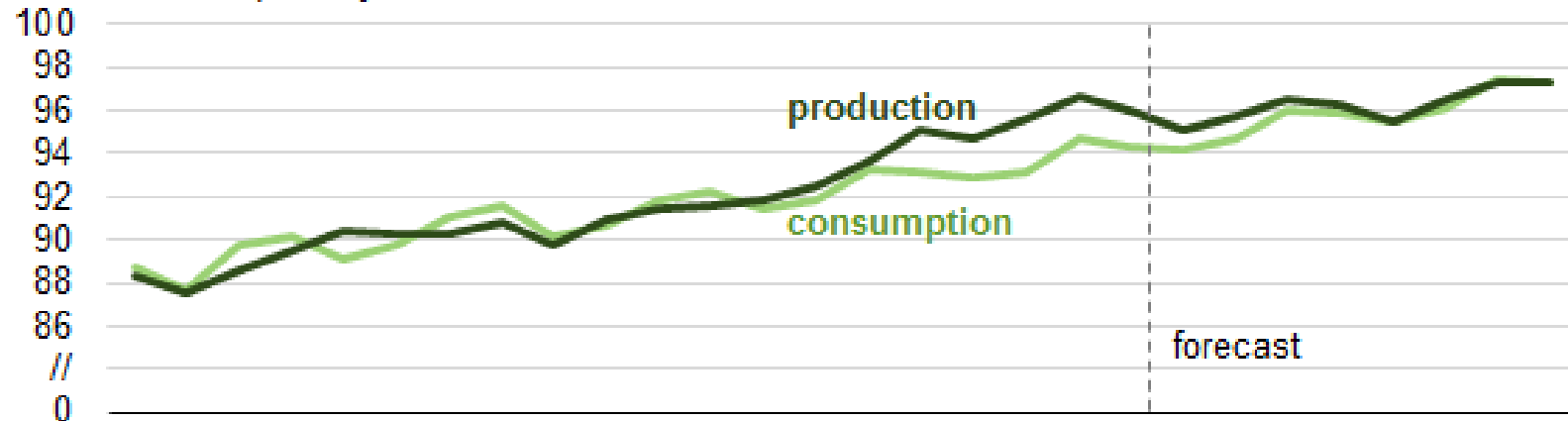
## OPEC's view of supply and demand...



## It's about spare capacity....

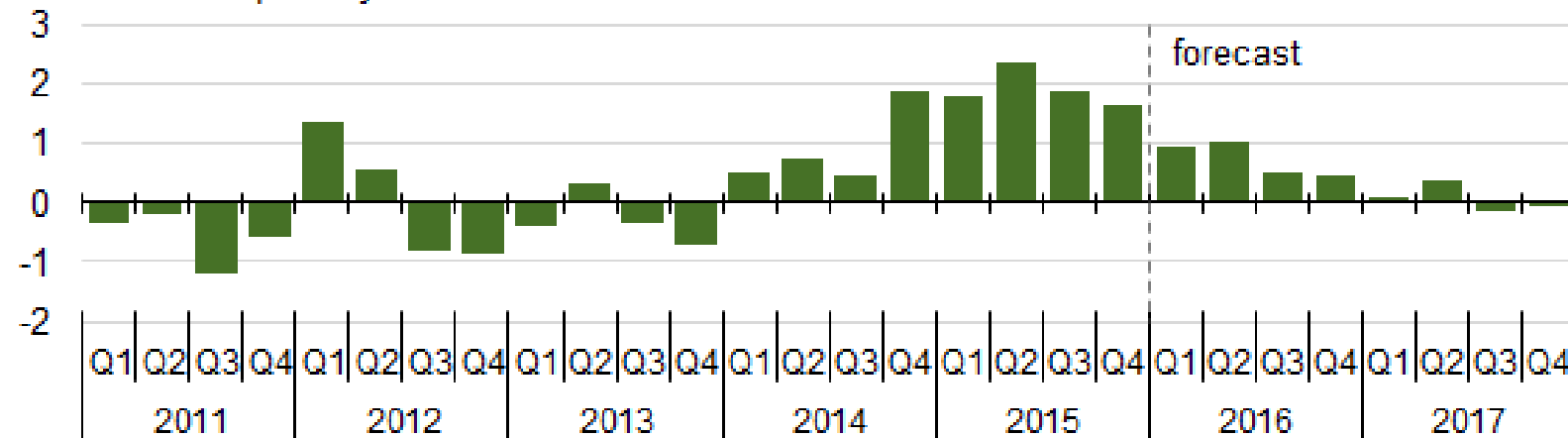
Global production and consumption of crude oil and other liquids (2011-17)

million barrels per day



Implied stock change (2011-17)

million barrels per day



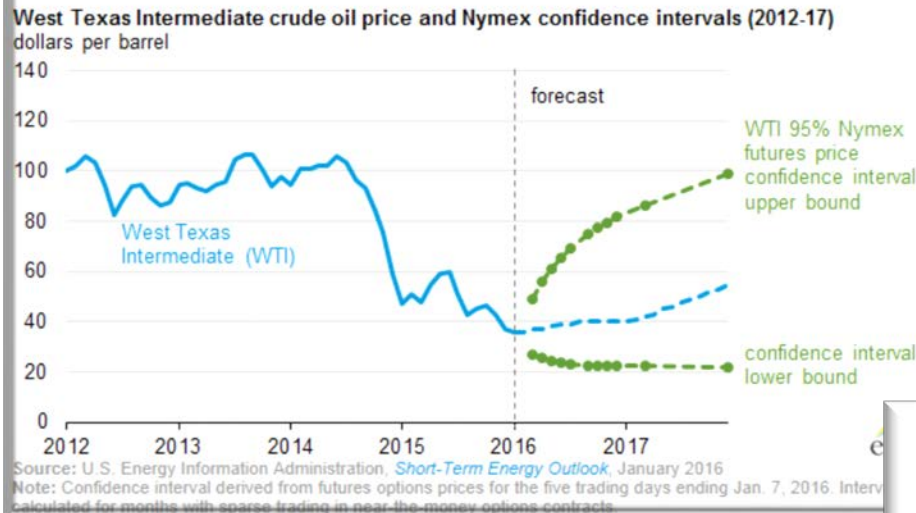
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## Base Price Forecast Methodology

- **Price Forecasting Session**
  - Held a day long oil price forecasting session on October 6, 2015.
  - Speakers provided insight into oil markets, probability and analysis, modeling, and financial aspects of commodity markets.
  - 37 participants from state government, academia and the private sector.
    - DOR, DNR, DOL, OMB, University, Legislative Finance and outside participants.
  - Participants were asked to forecast P10, mean, and P90 real ANS prices out to FY 2025.
    - Real prices were converted to nominal using a 2.25% inflation assumption.
    - Official forecast is based on probabilistic outcomes the price forecast session.

# Consensus view that the distribution is wide

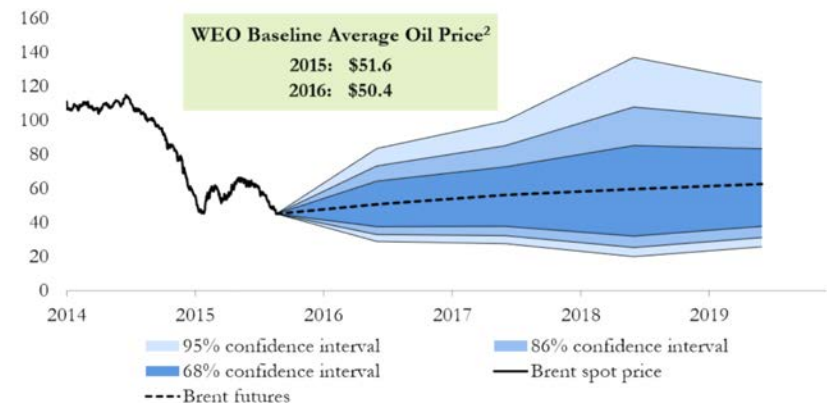
## Crude oil prices to remain relatively low through 2016 and 2017



<http://www.eia.gov/todayinenergy/detail.cfm?id=24532&src=email>

## Brent Crude Oil Price<sup>1</sup>

(U.S. dollars per barrel)



Sources: Bloomberg; and IMF staff calculations.

<sup>1</sup> As of August 20, 2015.

<sup>2</sup> Average of WTI, Brent, and the Dubai Fateh prices.

Source: IMF

# Fall 2015 ANS Revenue Forecast Prices

Percentile	FY 2016 Q1	FY 2016 Q2	FY 2016 Q3	FY 2016 Q4	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
90%		64.99	65.00	70.00	62.77	86.89	96.17	106.88	109.30	122.92	135.40	140.18	143.36	154.51
80%		58.85	60.05	63.68	58.42	76.61	84.80	94.28	96.37	107.34	115.99	119.49	122.80	130.19
70%		54.42	56.17	58.69	55.09	68.89	76.37	84.75	86.73	95.93	101.98	104.69	107.93	113.13
60%		50.76	52.74	54.24	52.21	62.28	69.22	76.53	78.53	86.33	90.36	92.55	95.57	99.35
50%	51.09	47.50	49.50	50.00	49.52	56.24	62.73	68.95	71.05	77.68	80.00	81.80	84.53	87.35
40%		44.45	46.27	45.76	46.89	50.40	56.52	61.59	63.86	69.47	70.28	71.81	74.19	76.39
30%		41.47	42.91	41.30	44.19	44.50	50.31	54.11	56.63	61.34	60.77	62.15	64.05	65.98
20%		38.42	39.18	36.31	41.25	38.18	43.74	46.04	48.95	52.83	50.99	52.33	53.59	55.62
10%		34.99	34.49	29.99	37.64	30.67	36.06	36.33	39.88	43.02	40.00	41.47	41.79	44.59

- Official forecast is one value within a range of possible outcomes
- Forecasts for FY 2016 and beyond are from the Fall 2015 price forecast session held on October 6, 2015
- Probabilistic analyses produced the percentile ranges above

# “What if the oil price is...” for the remainder of FY 2016

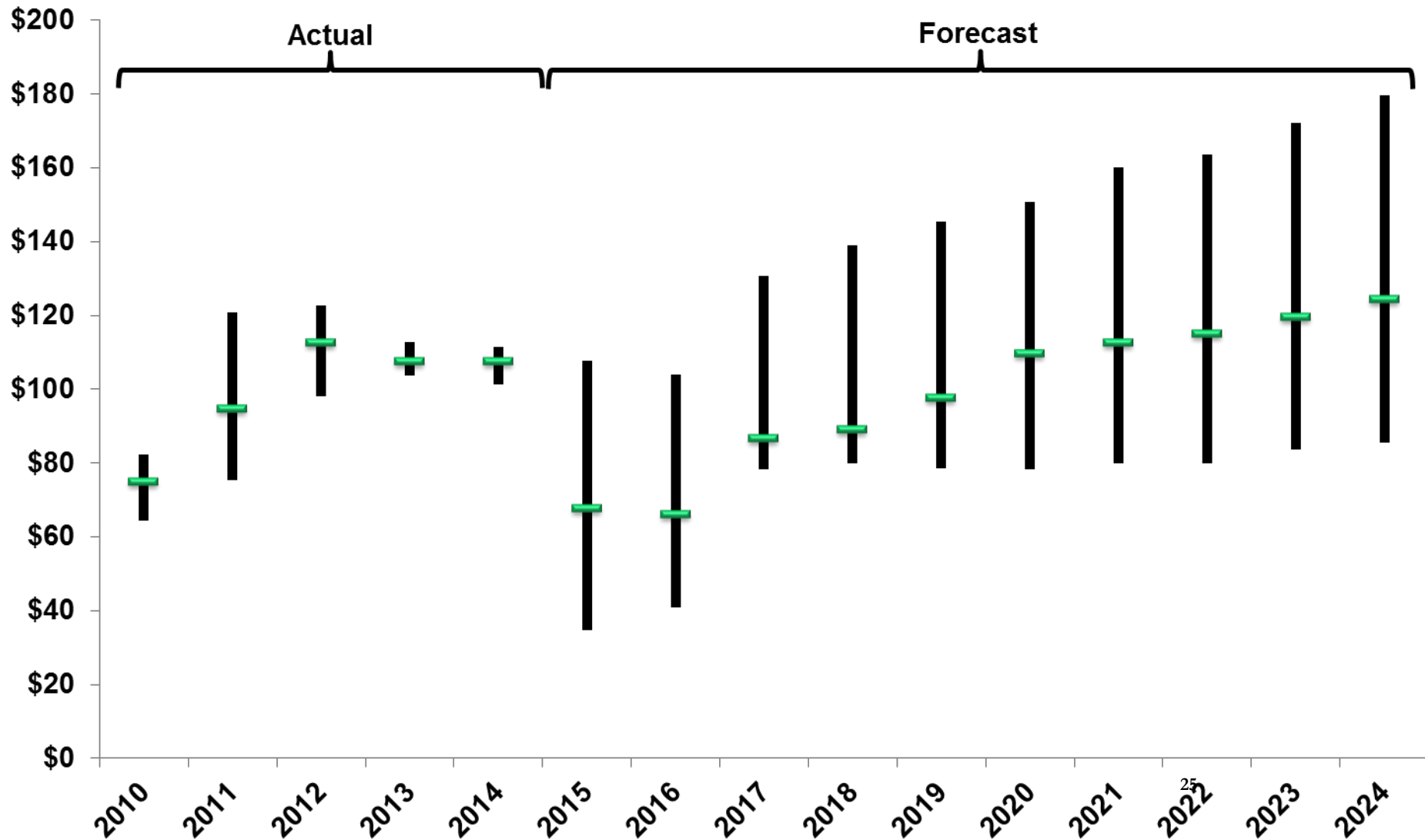
<i>"What if price is..."</i>	ANS Price Sensitivity								
	\$ 60	\$ 55	\$ 50	\$ 45	\$ 40	\$ 35	\$ 30	\$ 25	20
7/1/2015	56.20	56.20	56.20	56.20	56.20	56.20	56.20	56.20	56.20
8/1/2015	48.26	48.26	48.26	48.26	48.26	48.26	48.26	48.26	48.26
9/1/2015	48.83	48.83	48.83	48.83	48.83	48.83	48.83	48.83	48.83
10/1/2015	48.20	48.20	48.20	48.20	48.20	48.20	48.20	48.20	48.20
11/1/2015	44.24	44.24	44.24	44.24	44.24	44.24	44.24	44.24	44.24
12/1/2015	37.15	37.15	37.15	37.15	37.15	37.15	37.15	37.15	37.15
1/1/2016	60.00	55.00	50.00	45.00	40.00	35.00	30.00	25.00	20.00
2/1/2016	60.00	55.00	50.00	45.00	40.00	35.00	30.00	25.00	20.00
3/1/2016	60.00	55.00	50.00	45.00	40.00	35.00	30.00	25.00	20.00
4/1/2016	60.00	55.00	50.00	45.00	40.00	35.00	30.00	25.00	20.00
5/1/2016	60.00	55.00	50.00	45.00	40.00	35.00	30.00	25.00	20.00
6/1/2016	60.00	55.00	50.00	45.00	40.00	35.00	30.00	25.00	20.00
<b>Forecast Price</b>	<b>\$ 53.57</b>	<b>\$ 51.07</b>	<b>\$ 48.57</b>	<b>\$ 46.07</b>	<b>\$ 43.57</b>	<b>\$ 41.07</b>	<b>\$ 38.57</b>	<b>\$ 36.07</b>	<b>\$ 33.57</b>

Source for actuals: Prevailing Values, DOR Tax Division website



# Historical ANS West Coast FY Oil Price Bands:

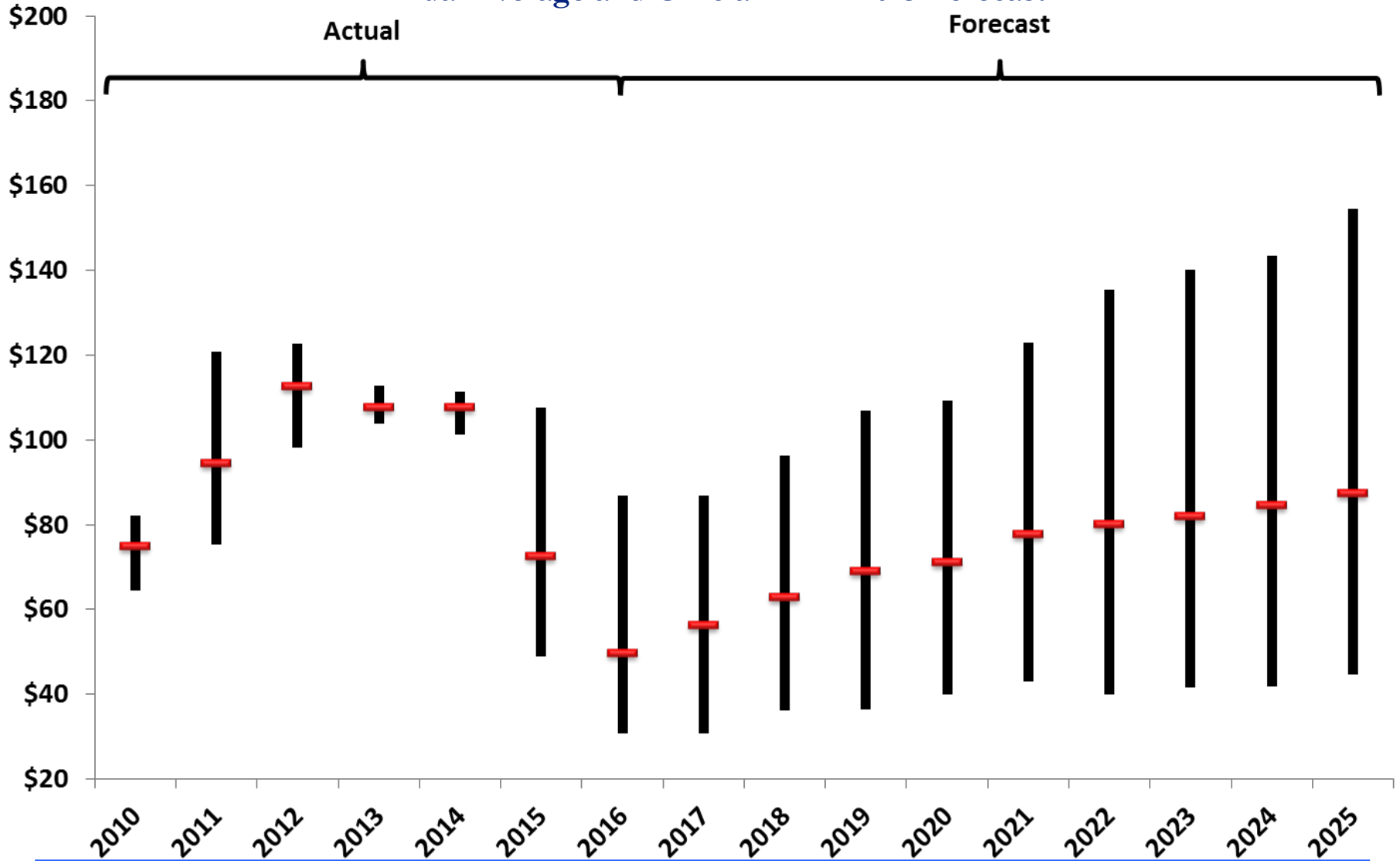
Annual Average and Official **SPRING** 2015 Forecast



Source: Department of Revenue – Revenue Sources Book Spring 2015

# Historical ANS West Coast FY Oil Price Bands:

Annual Average and Official **FALL** 2015 Forecast



Source: Department of Revenue - Revenue Sources Book Fall 2015

# Changes from Spring 2015 Forecast



## COMPARISON – SPRING 2015 vs. FALL 2015 FORECASTS

<b>FY 2016</b>	<b>Spring 2015 Forecast</b>	<b>Fall 2015 Forecast</b>	<b>Difference</b>	<b>Change</b>
<b>Oil Price (ANS West Coast per barrel)</b>	\$66.03	\$49.58	-\$16.45	-25%
<b>ANS Oil Production (THSbbls/day)</b>	519.5	500.2	-19.3	-4%
<b>GFUR (\$ millions)</b>	\$2,198.2	\$1,593.0	-\$605	-28%

<b>FY 2017</b>	<b>Spring 2015 Forecast</b>	<b>Fall 2015 Forecast</b>	<b>Difference</b>	<b>Change</b>
<b>Oil Price (ANS West Coast per barrel)</b>	\$86.66	\$56.24	-\$30.42	-35%
<b>ANS Oil Production (THSbbls/day)</b>	535.5	504.9	-30.6	-6%
<b>GFUR (\$ millions)</b>	\$3,179.7	\$1,796.4	-\$1,383	-44%

## CONTRIBUTORS OF CHANGE IN FY2016 REVENUE FORECAST

Component	Spring 2015 Forecast	Fall 2015 Forecast	Difference
ANS Production (THSbbls/day)	519.5	500.2	(19.3)
ANS Price	\$66.03	\$49.58	(\$16.45)
ANS Deductible Lease Expenditures (\$ millions)	\$6,788	\$5,782	(\$1,005)
Transportation Costs (\$/barrel)	\$9.28	\$10.56	\$1.28

Average Production Tax Value per barrel is reduced by \$13.

Simplified calculation, does not represent any specific company value.

Assumes 12.5% royalty.

## CONTRIBUTORS OF CHANGE IN FY2017 REVENUE FORECAST

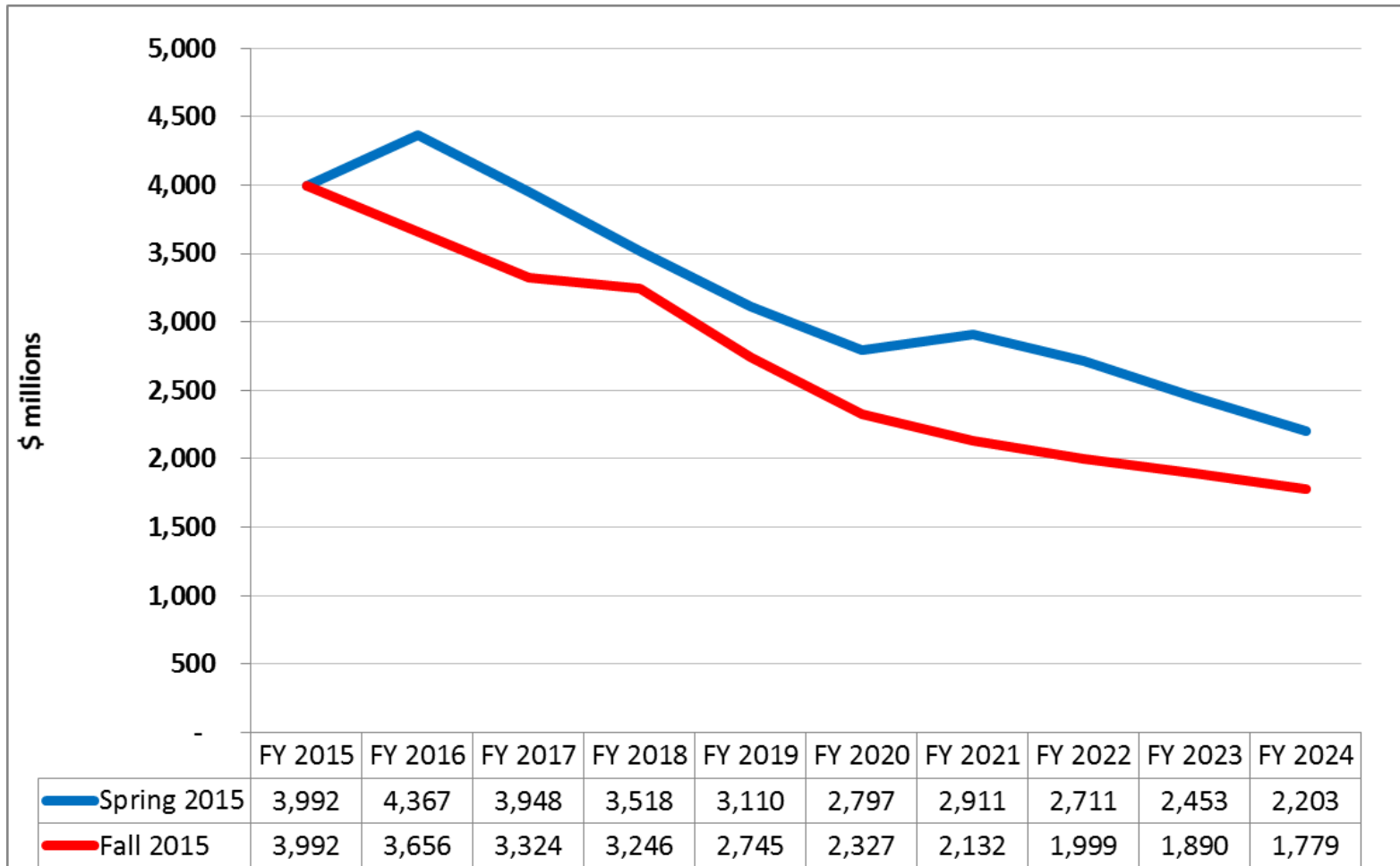
Component	Spring 2015 Forecast	Fall 2015 Forecast	Difference
ANS Production (THSbbls/day)	535.5	504.9	(30.6)
ANS Price	\$86.66	\$56.24	(\$30.42)
ANS Deductible Lease Expenditures (\$ millions)	\$6,847	\$5,828	(\$1,020)
Transportation Costs (\$/barrel)	\$9.82	11.16	1.34

Average Production Tax Value per barrel is reduced by \$28.

Simplified calculation, does not represent any specific company value.

Assumes 12.5% royalty.

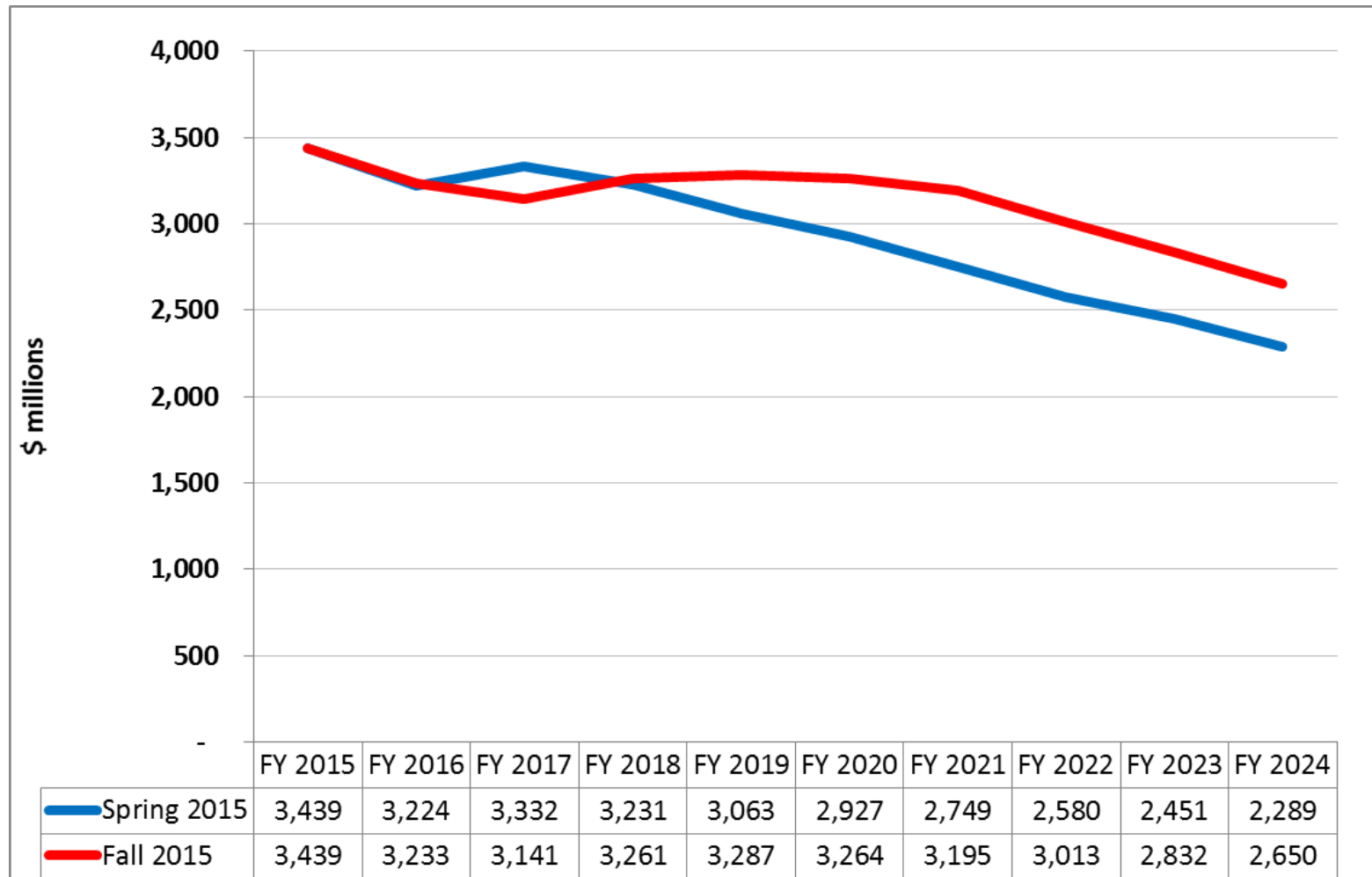
# NORTH SLOPE CAPITAL EXPENDITURE FORECAST CHANGE



Note: These estimates include lease expenditures by companies that are not expected to have a tax liability.

Source: Department of Revenue - Revenue Sources Book Spring 2015 forecast and Fall 2015 forecast

# NORTH SLOPE OPERATING EXPENDITURE FORECAST CHANGE



Note: These estimates include lease expenditures by companies that are not expected to have a tax liability.

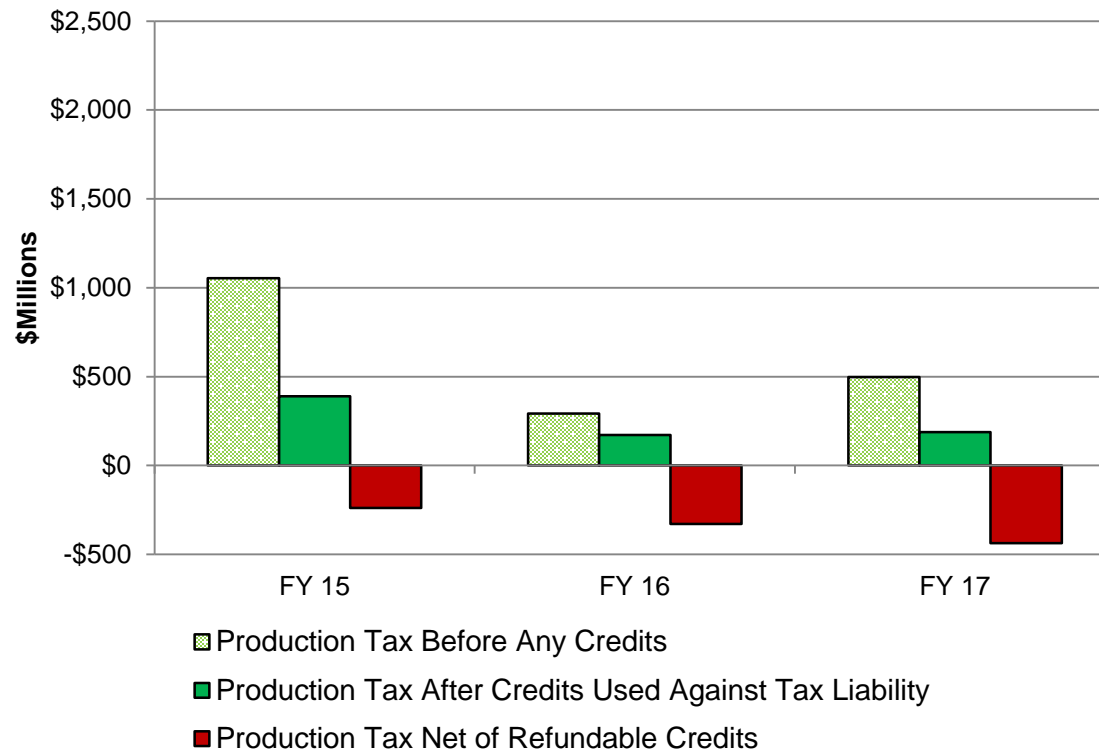
Source: Department of Revenue - Revenue Sources Book Spring 2015 forecast and Fall 2015 forecast



# Fall 2015 Credits Forecast

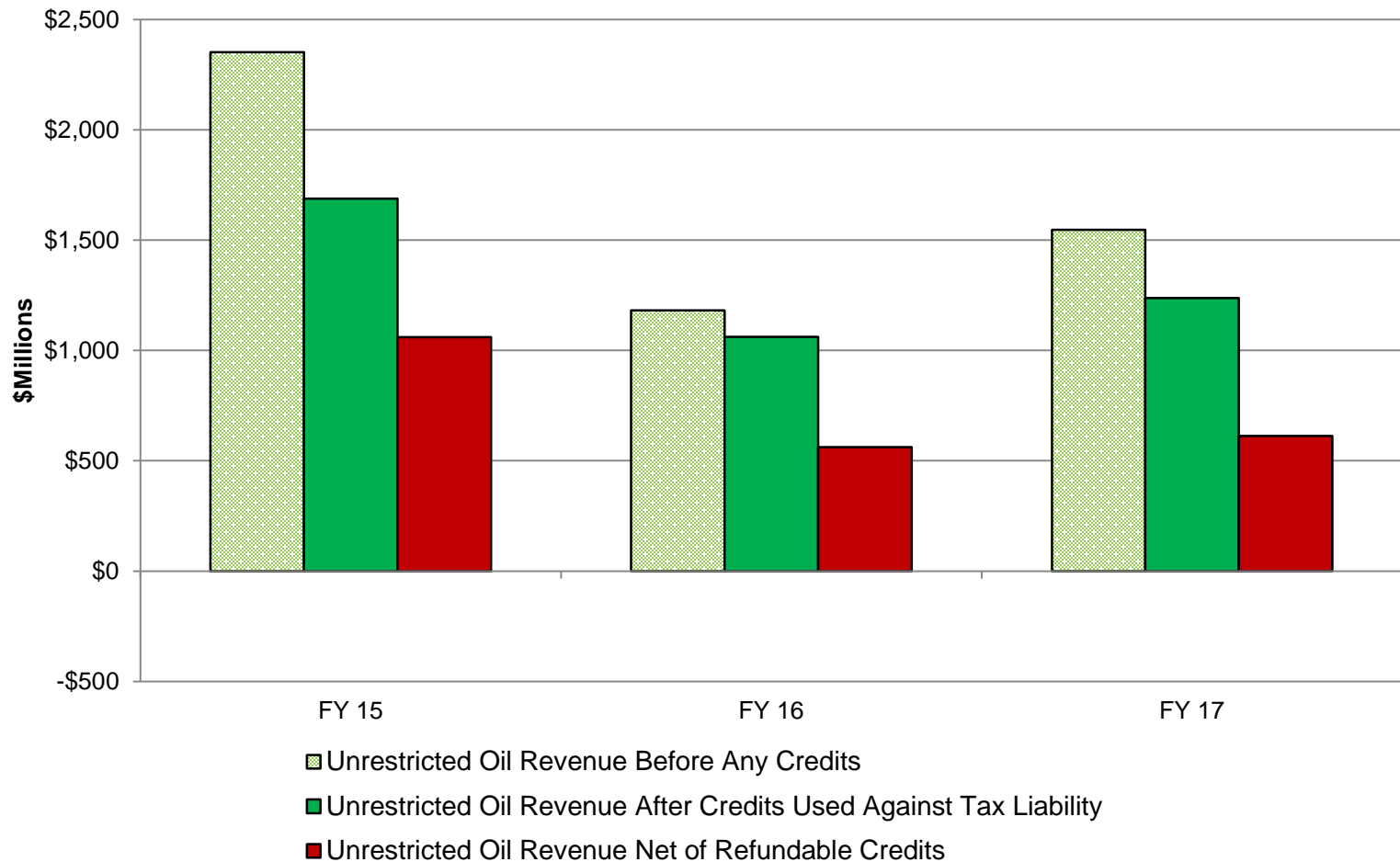


## Net Tax Credits vs. Production Tax



Source: Department of Revenue - Revenue Sources Book Fall 2015

# Unrestricted Oil Revenue\* and Tax Credits



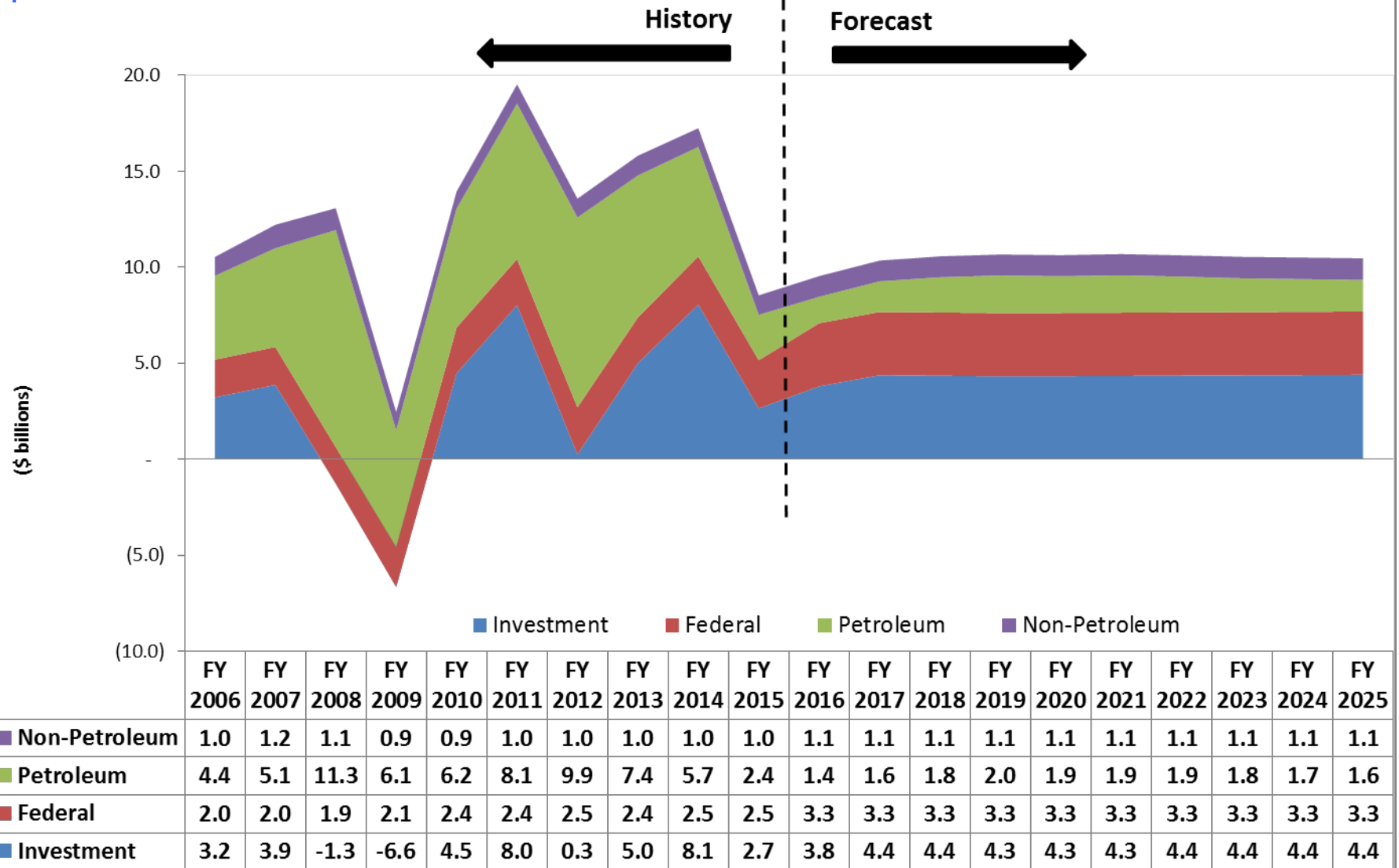
\*This graph shows net tax credits versus unrestricted oil revenue, which includes the petroleum property tax, petroleum CIT, production tax, oil and gas hazardous release, oil and gas conservation, rents, and royalties.

Source : Department of Revenue - Revenue Sources Book Fall 2015

# Total Revenue Forecast

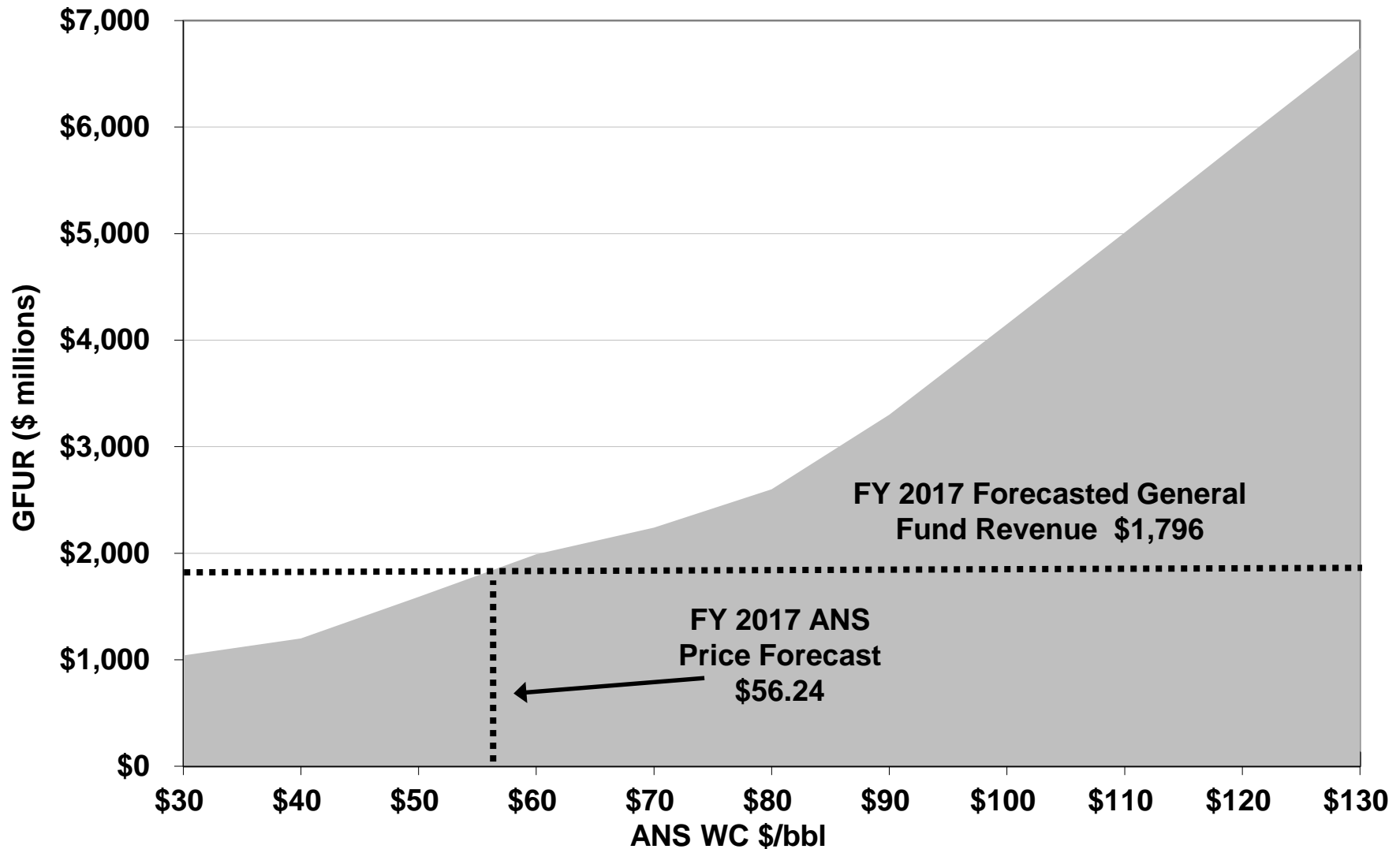


# Fall 2015 Total Revenue Forecast



Source: Department of Revenue –Fall 2015 forecast

# FY 2017 General Fund Unrestricted Revenue, with Price Sensitivity



## Total Revenue Forecast – FY 2015 & 2016

(\$ millions)	Actual	Forecast	
Revenue Type	FY 2015	FY 2016	FY 2017
<b>Unrestricted General Fund</b>			
Oil Revenue	1,687.9	1,061.5	1,237.3
Non-Oil Revenue*	521.5	510.1	521.0
Investment Revenue	47.9	21.3	38.1
<b>Total Unrestricted Revenue</b>	<b>2,257.3</b>	<b>1,593.0</b>	<b>1,796.4</b>
<b>Designated General Fund</b>			
Non-Oil Revenue*	313.3	348.2	338.7
Investment Revenue	17.7	6.8	37.8
<b>Subtotal</b>	<b>331.0</b>	<b>355.0</b>	<b>376.5</b>
<b>Other Restricted Revenue</b>			
Oil Revenue	667.3	307.7	351.8
Non-Oil Revenue*	183.9	219.7	220.5
Investment Revenue	2,585.7	3,773.4	4,309.0
<b>Subtotal</b>	<b>3,436.9</b>	<b>4,300.8</b>	<b>4,881.3</b>
<b>Federal Revenue</b>			
Oil Revenue	3.2	4.3	4.3
Federal Receipts	2,512.7	3,290.2	3,290.2
<b>Subtotal</b>	<b>2,515.9</b>	<b>3,294.5</b>	<b>3,294.5</b>
<b>Total State Revenue</b>	<b>8,541.1</b>	<b>9,543.3</b>	<b>10,348.7</b>

\*Except Federal and Investment

Source: Department of Revenue - Revenue Sources Book Fall 2015

# A New View of Revenue

(\$ millions)		Forecast	
Revenue Type	Actual FY 2015	FY 2016	FY 2017
<b>Petroleum Revenue</b>			
Unrestricted General Fund	1,687.9	1,061.5	1,237.3
Royalties to Alaska Permanent Fund beyond 25% dedication <sup>(2)</sup>	111.3	48.4	53.9
Tax and Royalty Settlements to CBRF	149.0	20.0	20.0
<b>Subtotal Petroleum Revenues</b>	<b>1,948.2</b>	<b>1,130.0</b>	<b>1,311.2</b>
<b>Non-Petroleum Revenue</b>			
Unrestricted General Fund	521.5	510.1	521.0
Designated General Fund	313.3	348.2	338.7
Royalties to Alaska Permanent Fund beyond 25% dedication <sup>(2)</sup>	0.2	1.1	1.1
Tax and Royalty Settlements to CBRF	0.1	0.1	0.1
<b>Subtotal Non-Petroleum Revenues</b>	<b>835.1</b>	<b>859.5</b>	<b>860.9</b>
<b>Investment Revenue</b>			
Unrestricted General Fund	<b>47.9</b>	<b>21.3</b>	<b>38.1</b>
Designated General Fund	17.7	6.8	37.8
Constitutional Budget Reserve Fund	197.7	65.5	95.8
Alaska Permanent Fund - Realized Earnings	2,931.4	3,354.4	3,403.5
<b>Subtotal Investment Revenues</b>	<b>3,194.7</b>	<b>3,448.0</b>	<b>3,575.2</b>
<b>Total Revenue Subject to Appropriation</b>	<b>5,977.9</b>	<b>5,437.5</b>	<b>5,747.3</b>

(1) This figure presents only the largest known categories of current year funds subject to appropriation. A comprehensive review of all accounts in the state accounting system would likely reveal additional revenues subject to appropriation beyond those identified here.

(2) Estimated based on deposit to Permanent Fund minus 25% of total royalties.



# General Fund Unrestricted Revenues

## Non-petroleum

Revenue Type	Actual		Forecast			
	2015	Percent	2016	Percent	2017	Percent
<b>Taxes</b>						
Non-petroleum Corporate Income	\$136	23.9%	\$105	19.7%	\$105	18.8%
Mining License Tax	\$39	6.8%	\$24	4.6%	\$21	3.8%
Insurance Premium	\$59	10.4%	\$59	11.1%	\$58	10.4%
Tobacco	\$41	7.0%	\$42	8.0%	\$42	7.5%
Motor Fuel	\$42	7.3%	\$51	9.6%	\$51	9.1%
Other Taxes	<u>\$65</u>	11.4%	<u>\$65</u>	12.3%	<u>\$75</u>	13.5%
<b>Subtotal Taxes</b>	<b>\$381</b>	<b>66.9%</b>	<b>\$347</b>	<b>65.3%</b>	<b>\$354</b>	<b>63.2%</b>
<b>Investments</b>	<b>\$48</b>	<b>8.4%</b>	<b>\$21</b>	<b>4.0%</b>	<b>\$38</b>	<b>6.8%</b>
<b>Other</b>	<b>\$141</b>	<b>24.7%</b>	<b>\$163</b>	<b>30.7%</b>	<b>\$168</b>	<b>30.0%</b>
<b>Total Non-Oil</b>	<b>\$569</b>	<b>100.0%</b>	<b>\$531</b>	<b>100.0%</b>	<b>\$559</b>	<b>100.0%</b>

# THANK YOU

Please find our contact information below:

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[dor.alaska.gov](http://dor.alaska.gov)

