

Spring 2018 Revenue Forecast



Presented by

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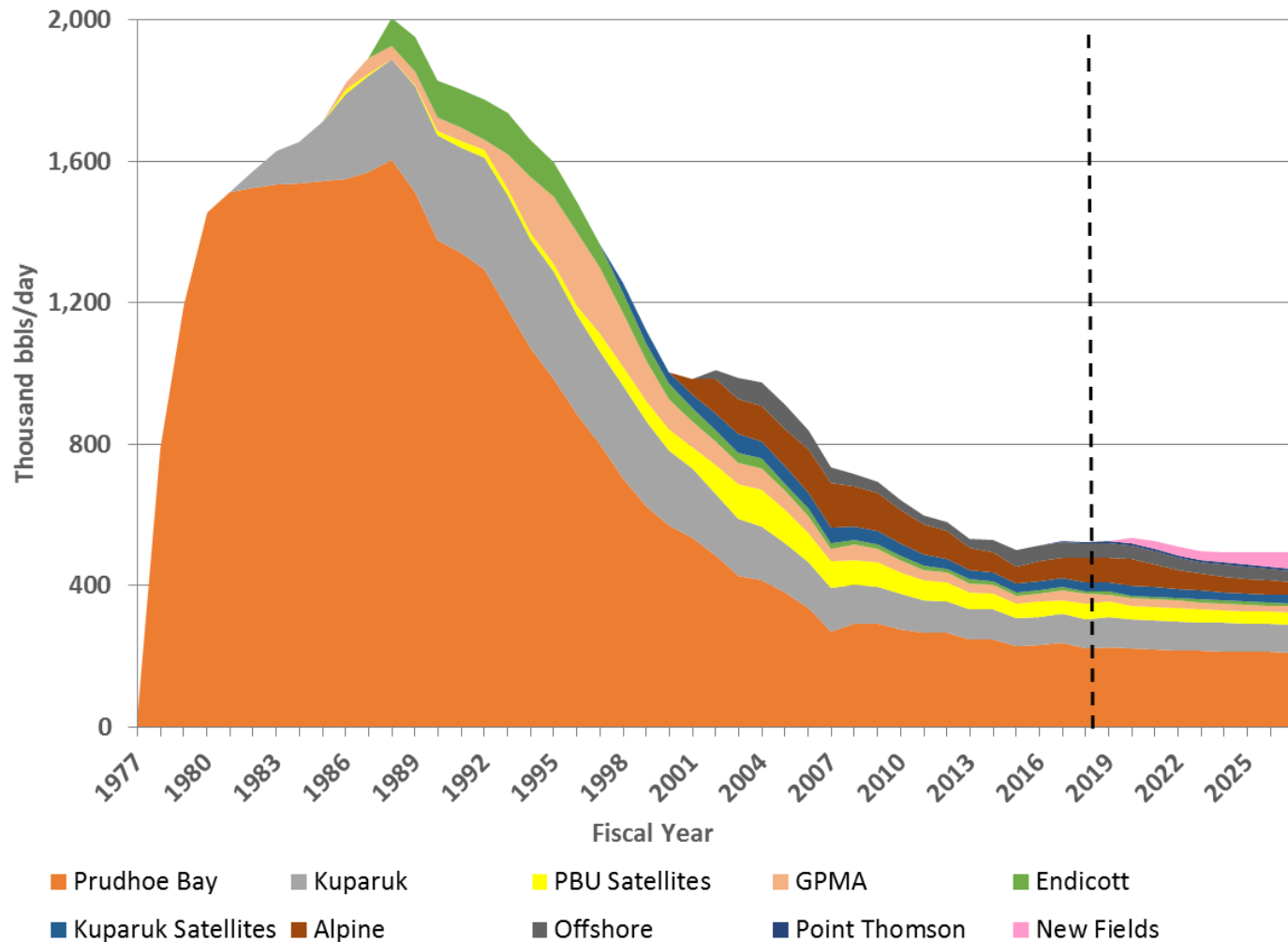
FORECASTING METHODS: Timeline

- Early April 2017: Spring 2017 Forecast
- Late April 2017: Spring 2017 Alternative Scenario
 - 4% Production Decline Scenario, Letter to Co-Chairs
 - Used in modeling by Department of Revenue, Office of Management and Budget, and Legislative Finance
- October 2017: Preliminary Fall 2017 Forecast
 - Non-standard, provided to assist special session
- December 2017: Final Fall 2017 Forecast and Revenue Sources Book
- March 2018: Spring 2018 Forecast
- December 2018: Fall 2018 Forecast and Revenue Sources Book

Spring 2018 Production Forecast



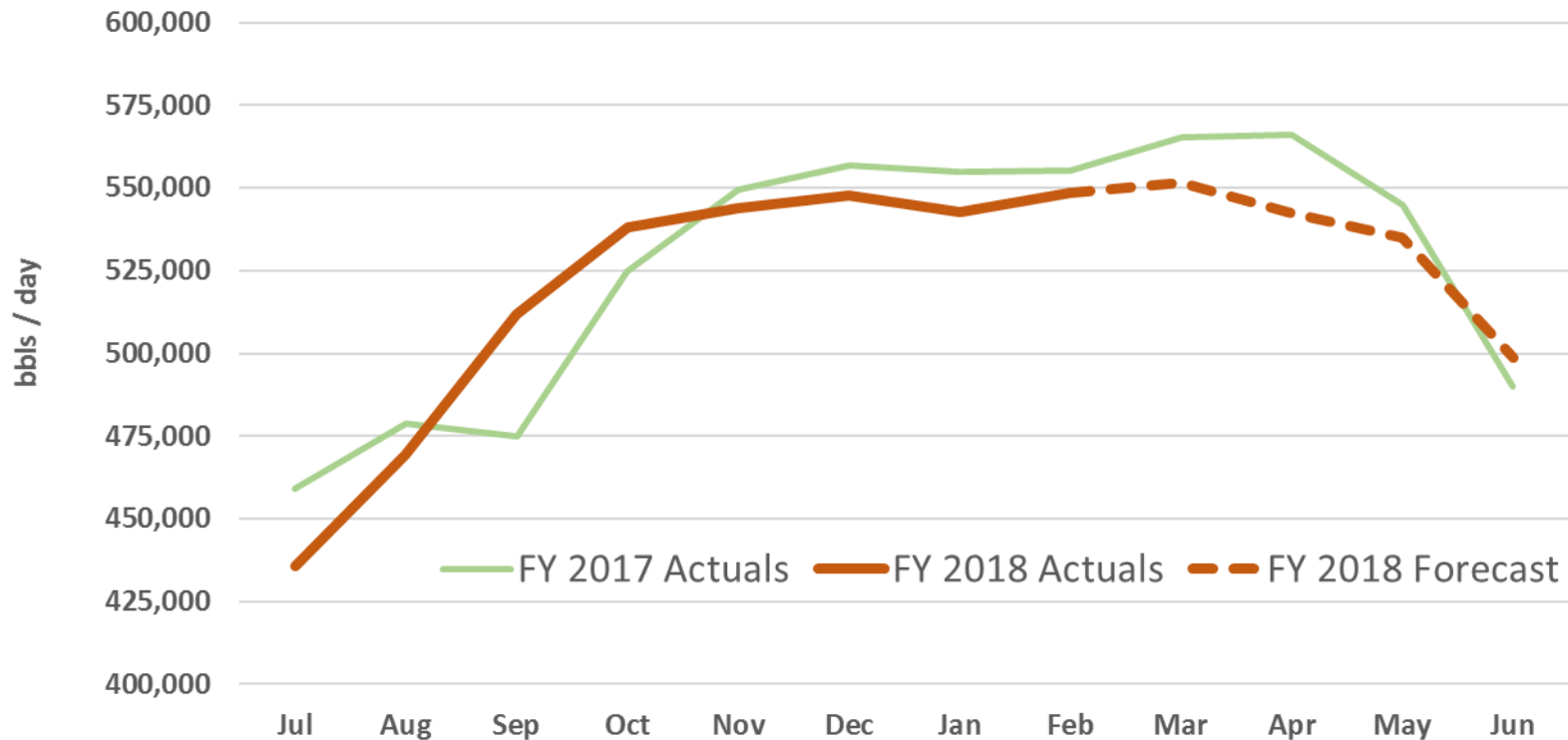
PRODUCTION FORECAST: ANS History and Forecast by Pool



Source: Department of Revenue and Department of Natural Resources

ANS = Alaska North Slope; PBU = Prudhoe Bay Unit; GPMA = Greater Point McIntyre Area

PRODUCTION FORECAST: ANS FY 2017 Versus FY 2018



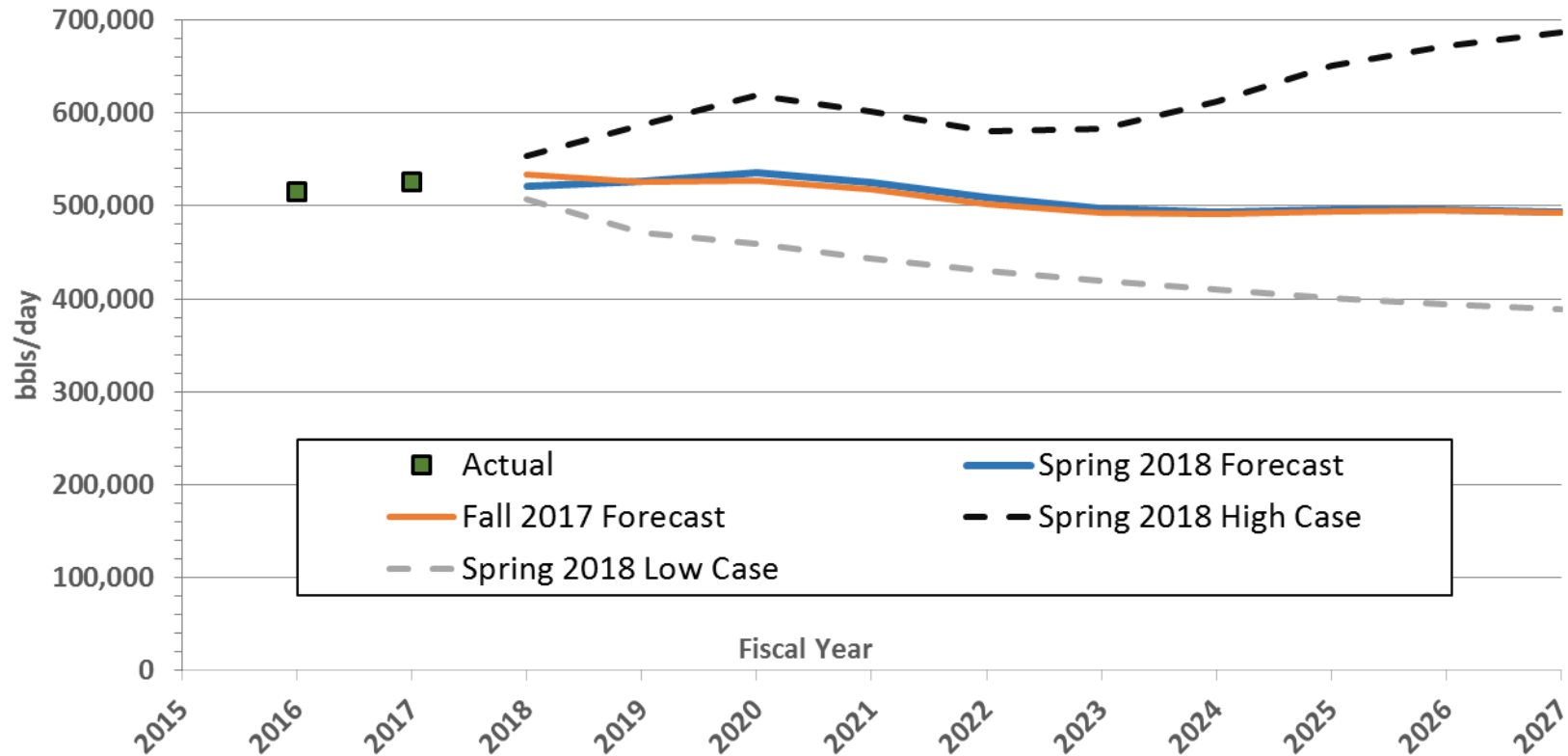
ANS PRODUCTION (barrels per day)													
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average
FY 2017	458,900	478,900	475,000	524,700	549,400	556,900	554,800	555,100	565,200	566,200	544,800	490,000	526,500
FY 2018	<u>435,800</u>	<u>469,400</u>	<u>511,700</u>	<u>538,100</u>	<u>544,000</u>	<u>547,600</u>	<u>542,500</u>	<u>548,400</u>	<u>551,500</u>	<u>542,200</u>	<u>534,900</u>	<u>498,600</u>	<u>521,800</u>
Change	-23,100	-9,500	36,700	13,400	-5,400	-9,300	-12,300	-6,700	-13,700	-24,000	-9,900	8,600	-4,700

Source: Department of Revenue and Department of Natural Resources

ANS = Alaska North Slope

Note: Totals may not sum due to rounding

PRODUCTION FORECAST: ANS Comparison



Source: Department of Revenue and Department of Natural Resources

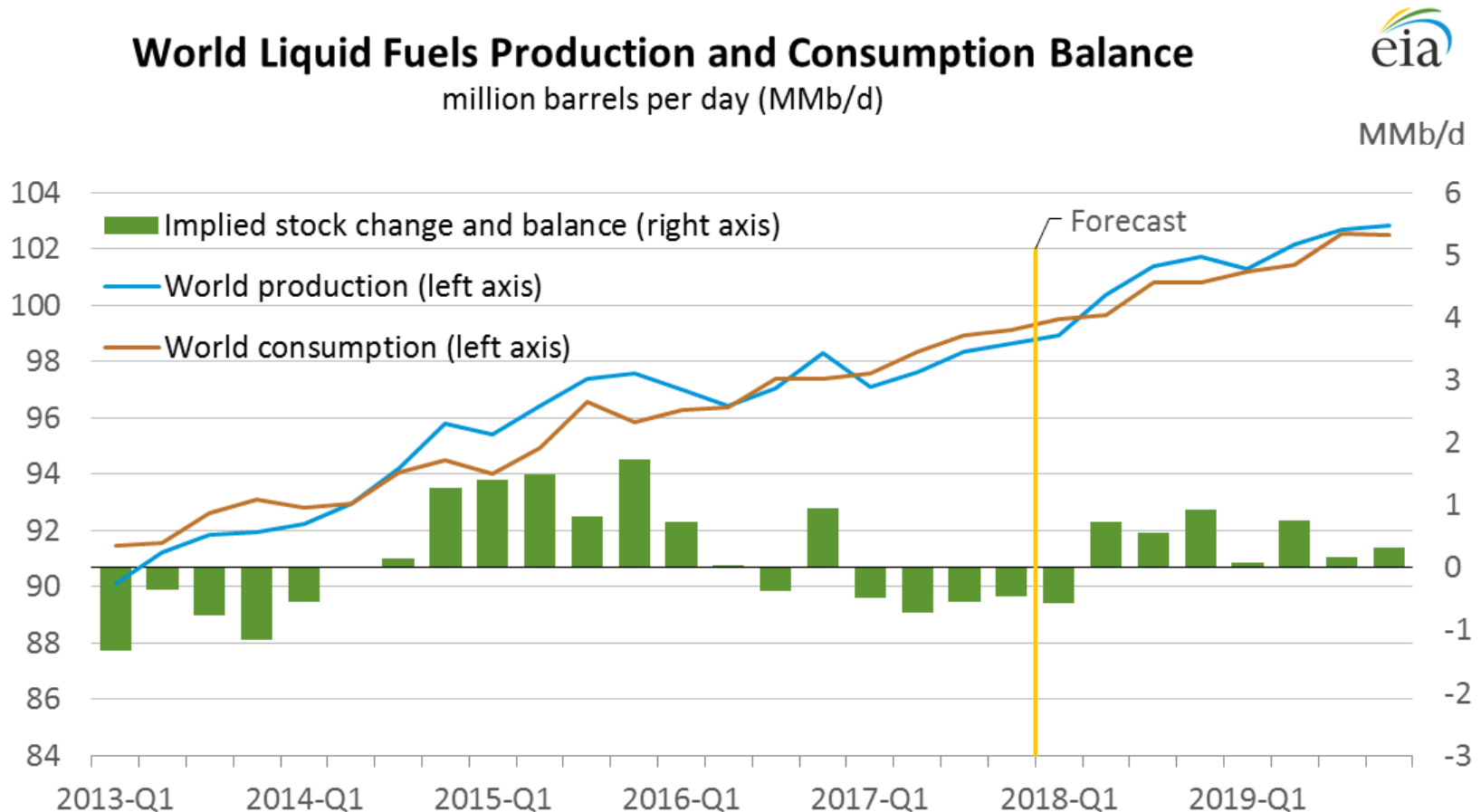
ANS = Alaska North Slope

Note: Totals may not sum due to rounding

Spring 2018 Price Forecast

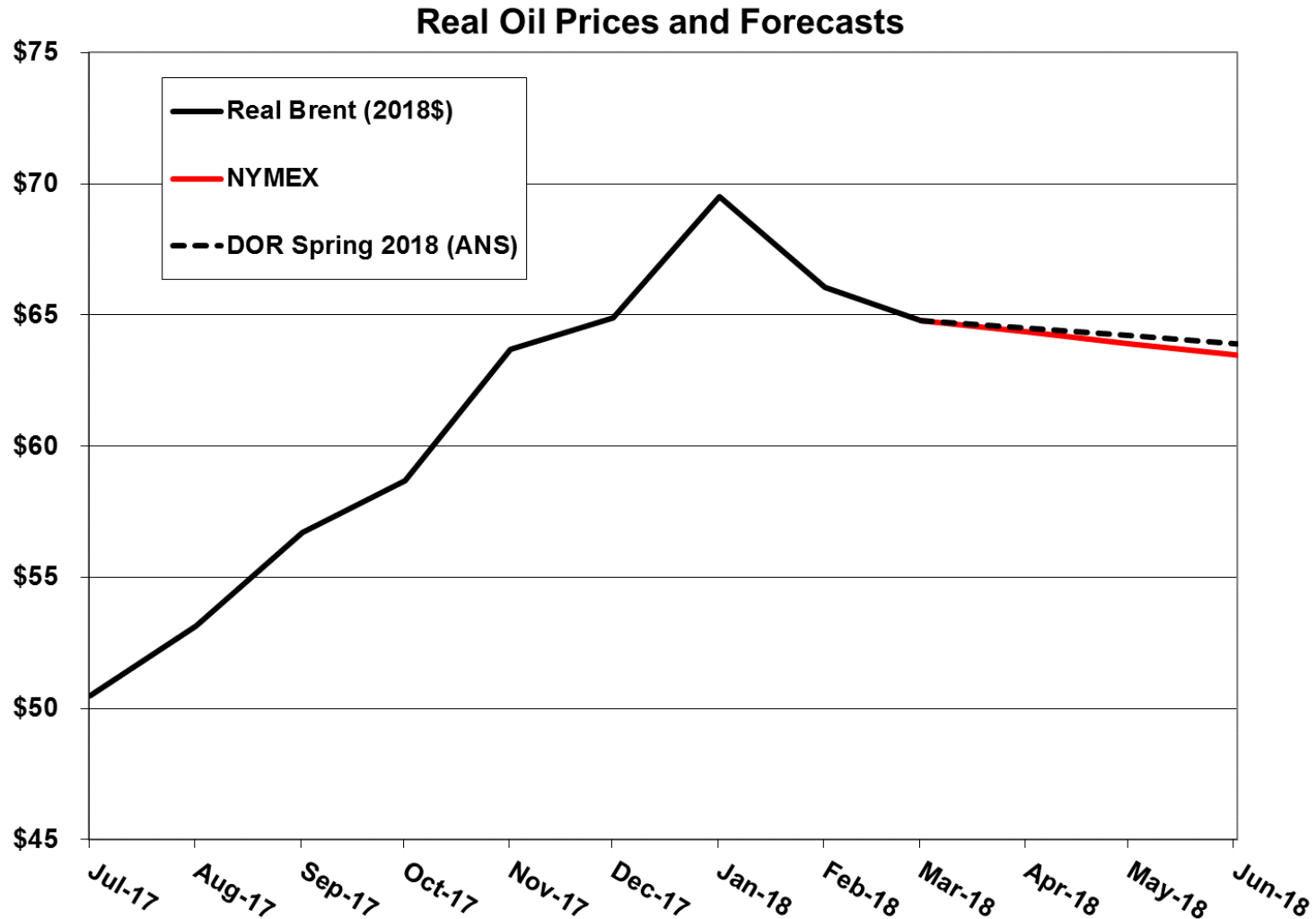


PRICE FORECAST: Impact of Spare Capacity: Short Term



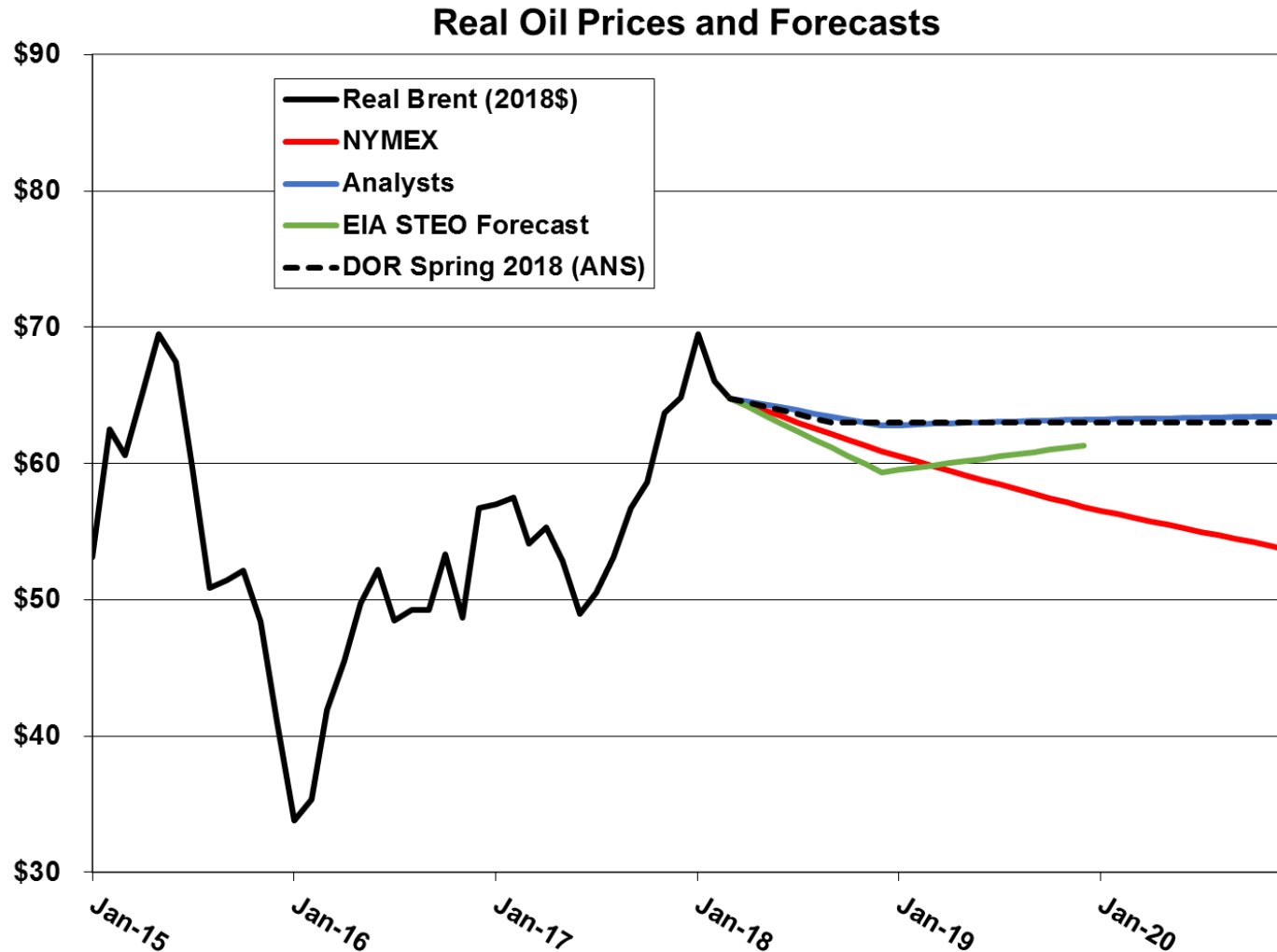
Source: Energy Information Agency, March 2018 Short-Term Energy Outlook

PRICE FORECAST: Brent Forecasts Comparison to DOR ANS Forecast: FY2018



Sources: Futures prices are from the New York Mercantile Exchange (NYMEX) as of Mar. 9, 2018. The U.S. Energy Information Administration (EIA) forecast is from their March 2018 Short-Term Energy Outlook (through 2020). Forecasts are adjusted using Alaska Department of Revenue's 2.25% inflation assumption.

PRICE FORECAST: Brent Forecasts Comparison to DOR ANS Forecast: Short-Term



Sources: Analyst forecast is an average of 20-31 firms from a Bloomberg survey as of Mar. 9, 2018. Futures prices are from the New York Mercantile Exchange (NYMEX) as of Mar. 9, 2018. The U.S. Energy Information Administration (EIA) forecast is from their March 2018 Short-Term Energy Outlook (through 2020). Forecasts are adjusted using Alaska Department of Revenue's 2.25% inflation assumption.

SHORT-TERM PRICE FORECAST¹

	Fiscal Year								
	2019	2020	2021	2022	2023	2024	2025	2026	2027
DOR Spring Official ²	\$63	\$64	\$66	\$67	\$69	\$70	\$72	\$74	\$75
NYMEX Extended ³	\$62	\$59	\$57	\$56	\$56	\$56	\$56	\$56	-
EIA STEO ⁴	\$60	-	-	-	-	-	-	-	-
EIA AEO	-	\$67	\$80	\$88	\$93	\$98	\$102	\$106	\$110
Analysts: Average ⁶	\$64	\$66	\$67	\$64					

¹ All price forecasts rounded to the nearest dollar. Dashes indicate that a forecast for this FY is either not available or inapplicable.

² DOR Spring Official forecast: Released 3/16/2018; Crude Forecast ANS West Coast; Original forecast in FY.

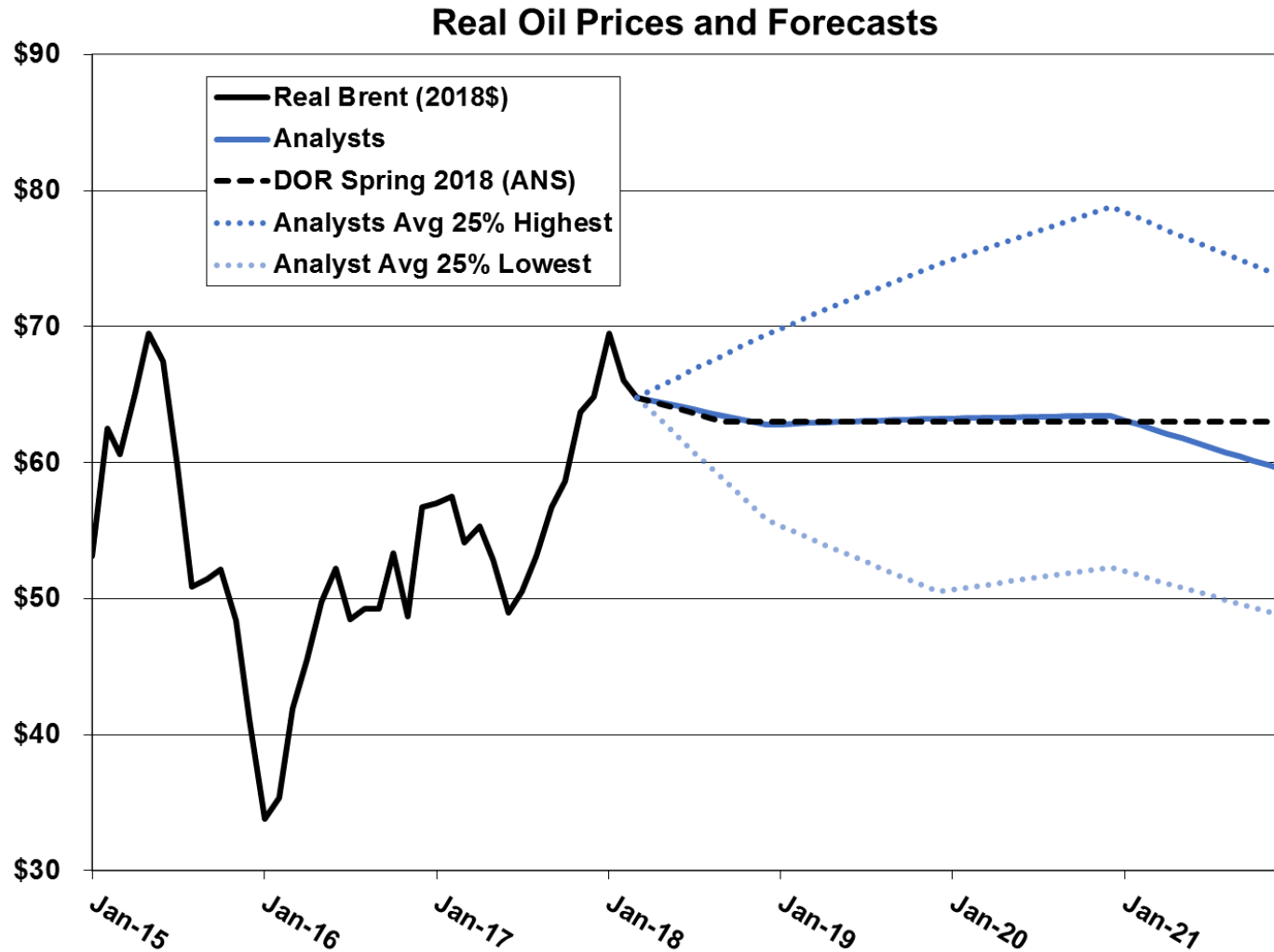
³ NYMEX Futures: Retrieved: 3/9/2018; Crude Traded Brent; FY calculated based on monthly prices.

⁴ EIA STEO (Short-Term Energy Outlook): Released 3/6/2018; Crude Forecast Brent; FY calculated based on monthly prices.

⁵ EIA AEO (Annual Energy Outlook) forecasts: Released 2/6/2018; Crude Forecast Brent; Converted to FY by assuming 6 months of each calendar year's forecast.

⁶ Analysts Forecasts: Retrieved 3/9/2018; Individual forecasts released between 01/22/2018 and 03/02/2018; Crude Forecast Brent.

PRICE FORECAST: Analyst Brent Forecasts Comparison to DOR ANS Forecast: Short-Term



Sources: Analyst forecasts are derived from forecasts of 7-31 firms from a Bloomberg survey as of Mar. 9, 2018. Forecasts are adjusted using Alaska Department of Revenue's 2.25% inflation assumption.

PRICE FORECAST: Differences in Analyst Forecasts

	Demand	Supply
<i>Analyst Low</i> <i>(Short-Term)</i>	Slowing global demand growth	Strong production growth in U.S. and OPEC countries
<i>Analyst High</i> <i>(Short-Term)</i>	Rapid demand growth in India and China	Flat U.S. shale production and disruptions elsewhere
<i>EIA Forecast</i> <i>(Short-Term)</i>	Steady global demand growth	Global petroleum inventories declining
<i>EIA Reference Case</i> <i>(Long-Term)</i>	Moderate demand growth led by non-OECD countries	OPEC production flat U.S. is largest contributor to new non-OPEC production; Somewhat higher price needed to bring on sufficient supply

PRICE FORECAST: Bullish Analyst Example: Guggenheim, Short-Term

- Guggenheim: Brent 2018/2019 \$72/\$80
- Demand
 - China and India will add 5.4 mmbd demand over next 5 years
 - Electric vehicles usage offset by demand growth in non-auto consumption
 - Cold weather has returned
- Supply
 - OPEC has limited spare capacity
 - U.S. Shale production will not grow as expected due to new exploration and production discipline
 - Potential disruptions to Iran and Venezuela's exports

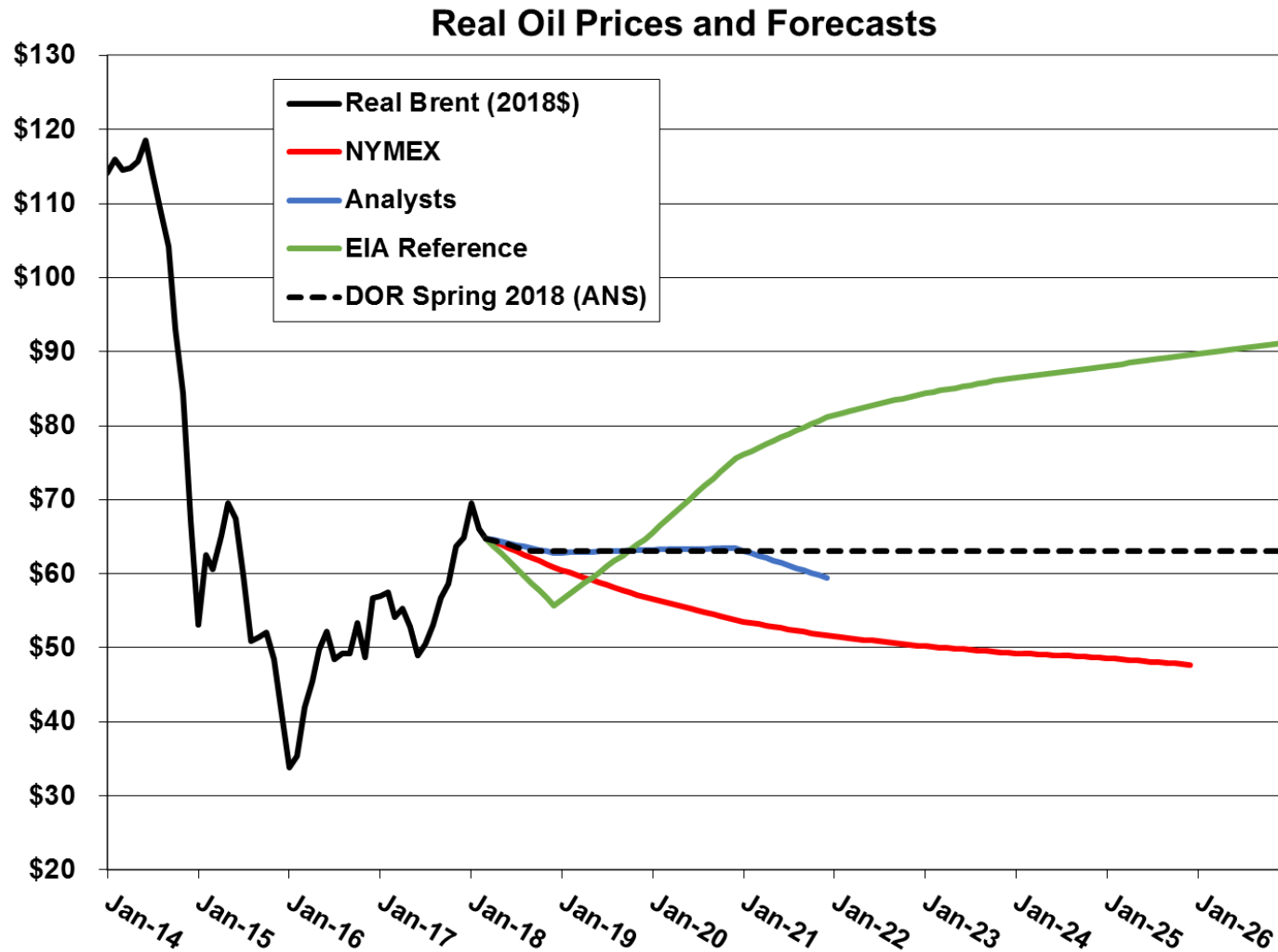
PRICE FORECAST: Bearish Analyst Example: Citi, Short-Term

- Citi: Brent 2018/2019 \$57/\$49
- Sees supply “blowout” in 2019
- Demand
 - Globally, oil demand flat in 2018-2019
 - Increased demand in non-OECD countries
- Supply
 - Growing US exports in tandem with rising US production
 - Higher prices have driven US shale into overdrive
 - Permian and Canadian pipelines running at full capacity
 - OPEC producers experiencing cost dramatic cost deflation

PRICE FORECAST: Median Analyst Example: Deutsche Bank, Short-Term

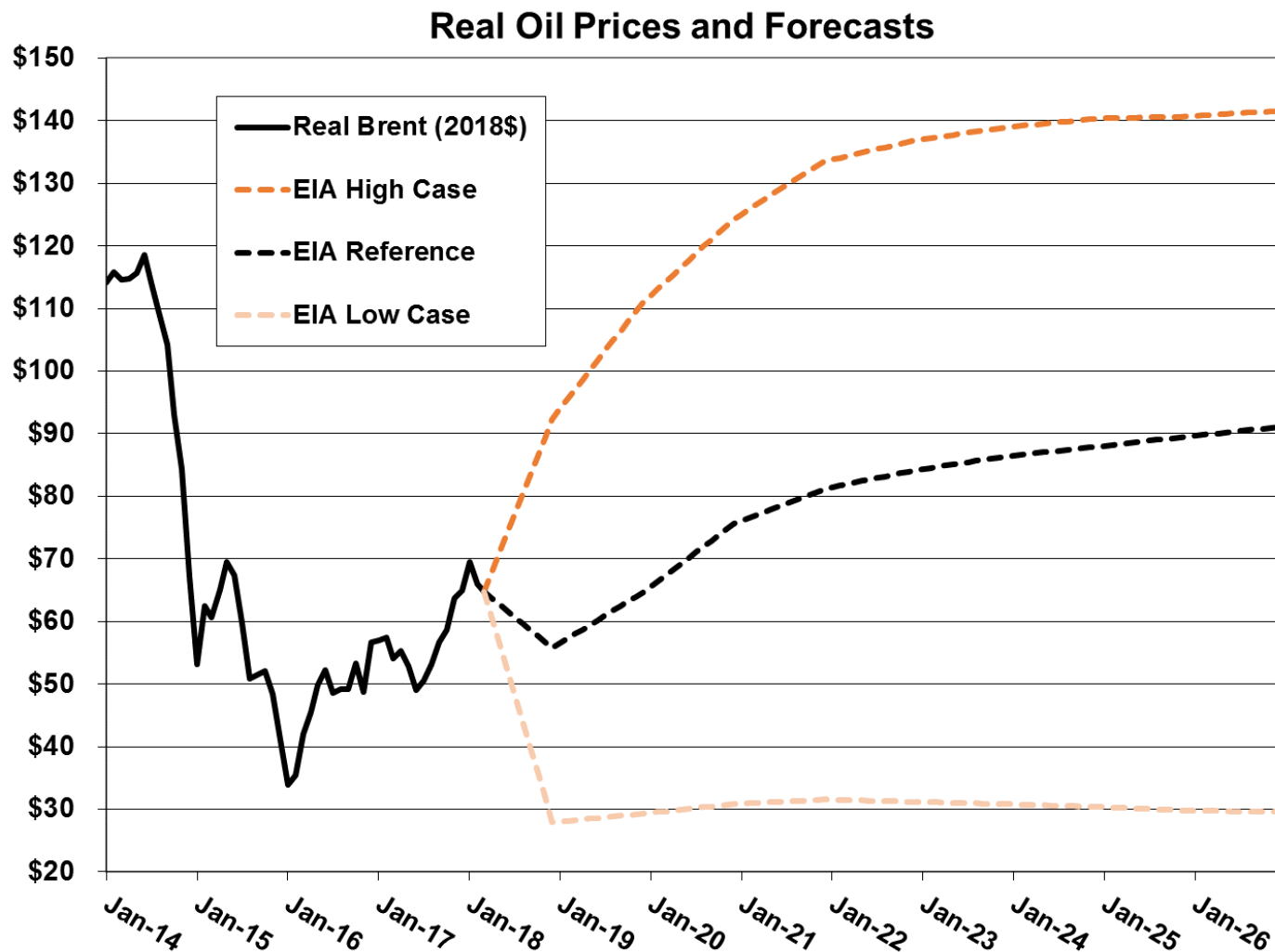
- Deutsche Bank: Brent 2018/2019 \$62/\$62
- Supply and demand in near equilibrium
- Demand
 - Modest demand growth will be balanced by supply considerations
 - Has resulted in increased prices to date
- Supply
 - Current OPEC agreement will not be extended past Dec 2018
 - Well productivity growth in US has yet to level off
 - Stronger US tight oil growth in 2019-2020
 - Higher prices will stimulate smaller scale production, increasing supply in 2020

PRICE FORECAST: Brent Forecasts Comparison to DOR ANS Forecast: Long-Term



Sources: Analyst forecast is an average of 7-31 firms from a Bloomberg survey as of Mar. 9, 2018. Futures prices are from the New York Mercantile Exchange (NYMEX) as of Mar. 9, 2018. The U.S. Energy Information Administration (EIA) Reference Case is from the EIA's 2018 Annual Energy Outlook publication. Forecasts are adjusted using Alaska Department of Revenue's 2.25% inflation assumption.

PRICE FORECAST: EIA Brent Cases from 2018 Annual Energy Outlook: Long-Term

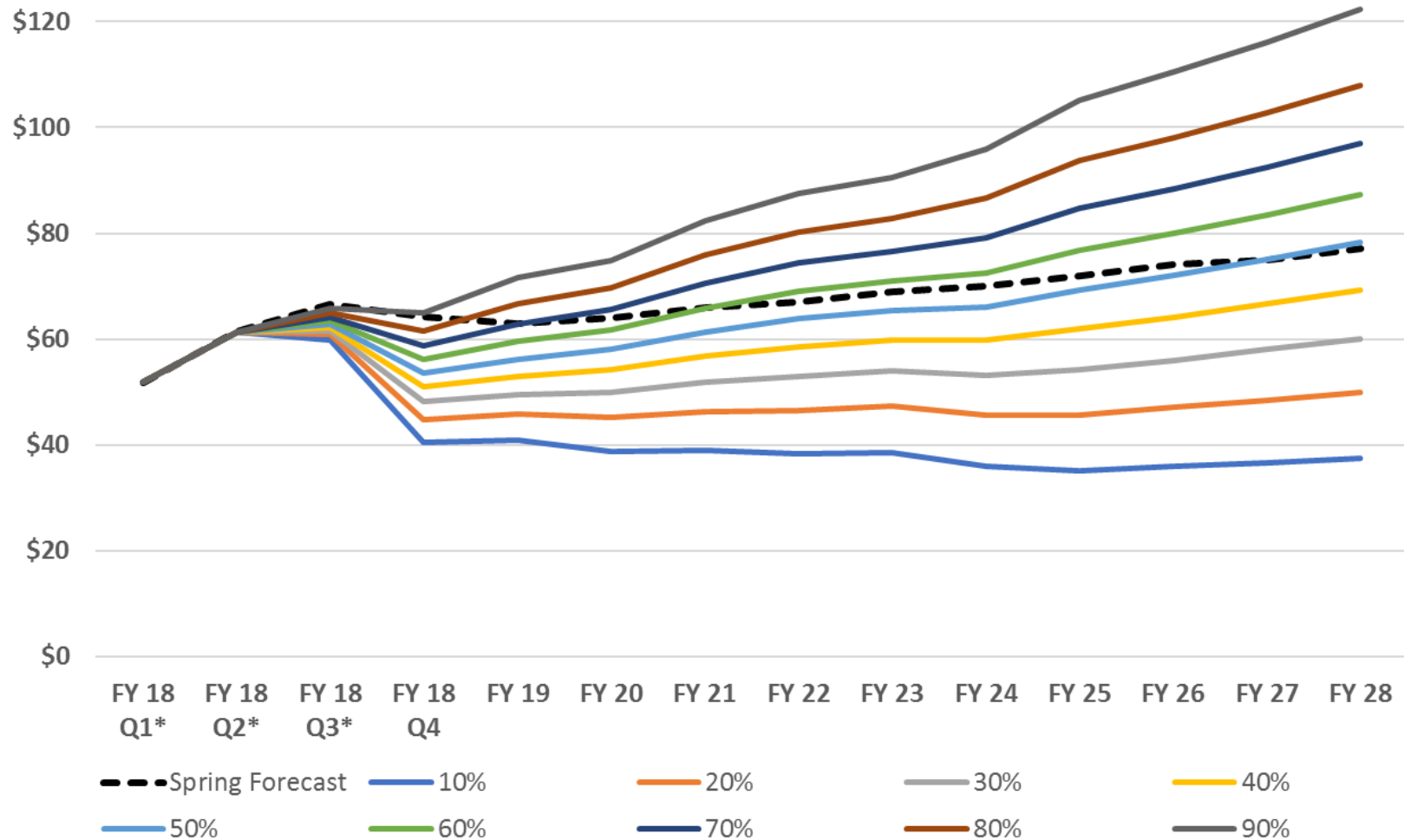


Sources: U.S. Energy Information Administration 2018 Annual Energy Outlook and March 2018 Short-Term Energy Outlook. Forecasts are adjusted using Alaska Department of Revenue's 2.25% inflation assumption.

PRICE FORECAST: Differences in EIA Projection Cases

	Demand	Supply
<i>EIA Low Price Case</i>	Slowing global demand growth	Higher OPEC investment and production Lower non-OPEC exploration and development costs Lower price adequate to bring on sufficient supply
<i>EIA Reference Case</i>	Moderate demand growth led by non-OECD countries	OPEC production flat U.S. is largest contributor to new non-OPEC production; Somewhat higher price needed to bring on sufficient supply
<i>EIA High Price Case</i>	Strong demand growth	Falling OPEC production Higher non-OPEC exploration and development costs Much higher price needed to bring on sufficient supply

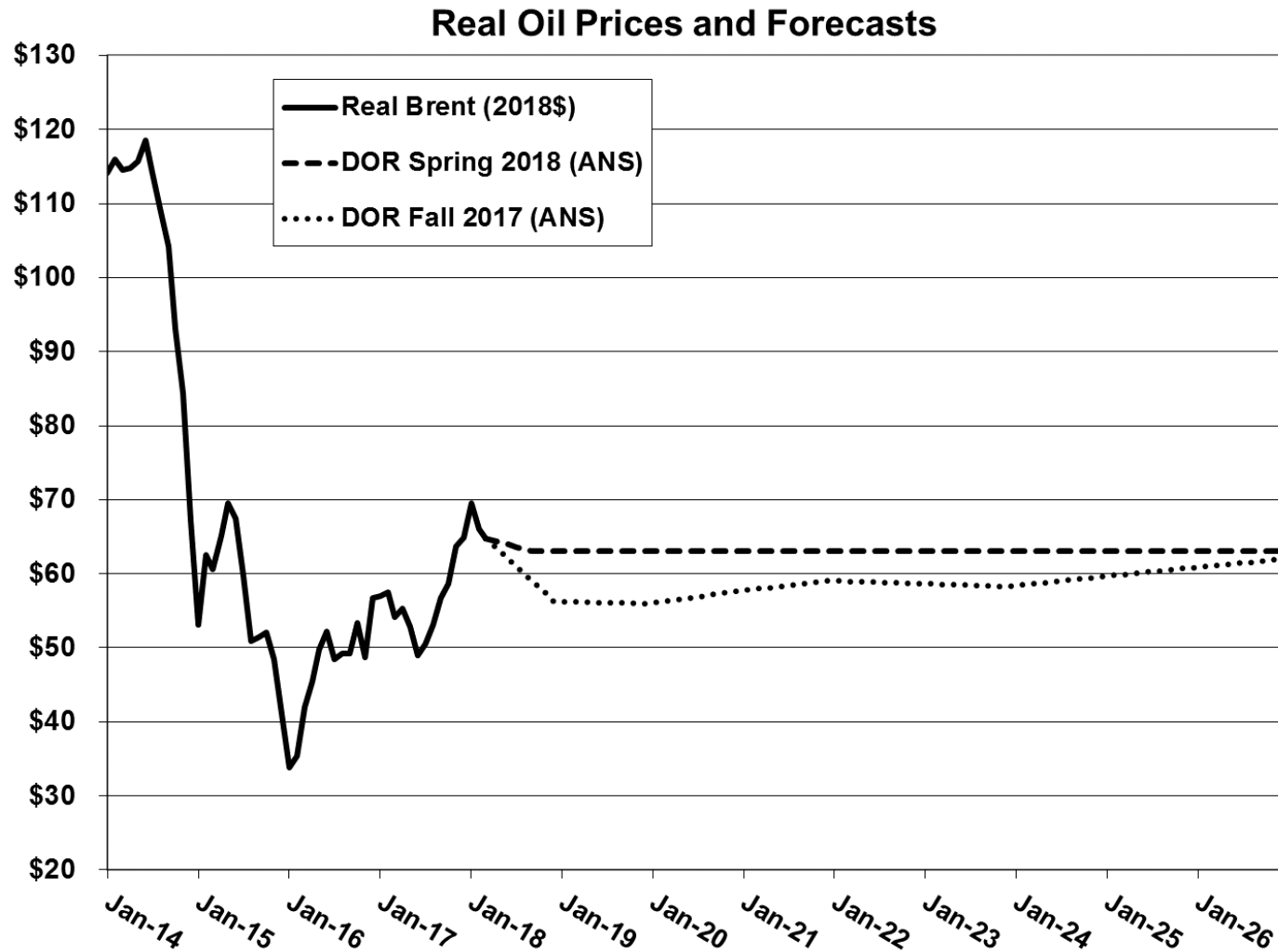
PRICE FORECAST: Nominal ANS Price Distribution



Source: Department of Revenue – Economic Research

* Includes actual prices through February 2017.

PRICE FORECAST: Spring 2018 Forecast compared to Prior Forecast



Source: Department of Revenue – Economic Research

PRICE FORECAST: UGF Revenue Under Selected Price Paths¹

	Price Per Barrel in \$; Unrestricted General Fund Revenue in \$ millions									
Fiscal Year	2019	2020	2021	2022	2023	2024	2025	2026	2027	
DOR Spring Official²										
Price Per Barrel	\$63	\$64	\$66	\$67	\$69	\$70	\$72	\$74	\$75	
Unrestricted General Fund Revenue	\$2,260	\$2,280	\$2,340	\$2,340	\$2,400	\$2,470	\$2,620	\$2,780	\$2,830	
NYMEX Extended³										
Price Per Barrel	\$62	\$59	\$57	\$56	\$56	\$56	\$56	\$56		-
Unrestricted General Fund Revenue	\$2,220	\$2,130	\$2,080	\$2,020	\$2,030	\$2,050	\$2,060	\$2,080		-
EIA STEO⁴										
Price Per Barrel	\$60	-	-	-	-	-	-	-	-	-
Unrestricted General Fund Revenue	\$2,160	-	-	-	-	-	-	-	-	-
EIA AEO Base/Reference⁵										
Price Per Barrel	- \$67	\$80	\$88	\$93	\$98	\$102	\$106	\$110		
Unrestricted General Fund Revenue	- \$2,430	\$3,250	\$3,740	\$4,160	\$4,490	\$4,900	\$5,180	\$5,400		
Analysts: Average⁶										
Price Per Barrel	\$64	\$66	\$67	\$64	-	-	-	-	-	-
Unrestricted General Fund Revenue	\$2,330	\$2,360	\$2,380	\$2,230	-	-	-	-	-	-

¹ All price forecasts rounded to the nearest dollar. Dashes indicate that a forecast for this FY is either not available or inapplicable.

² DOR Spring Official forecast: Released 3/16/2018; Crude Forecast ANS West Coast; Original forecast in FY.

³ NYMEX Futures: Retrieved: 3/9/2018; Crude Traded Brent; FY calculated based on monthly prices.

⁴ EIA STEO (Short-Term Energy Outlook): Released 3/6/2018; Crude Forecast Brent; FY calculated based on monthly prices.

⁵ EIA AEO (Annual Energy Outlook) forecasts: Released 2/6/2018; Crude Forecast Brent; Converted to FY by assuming 6 months of each calendar year's forecast.

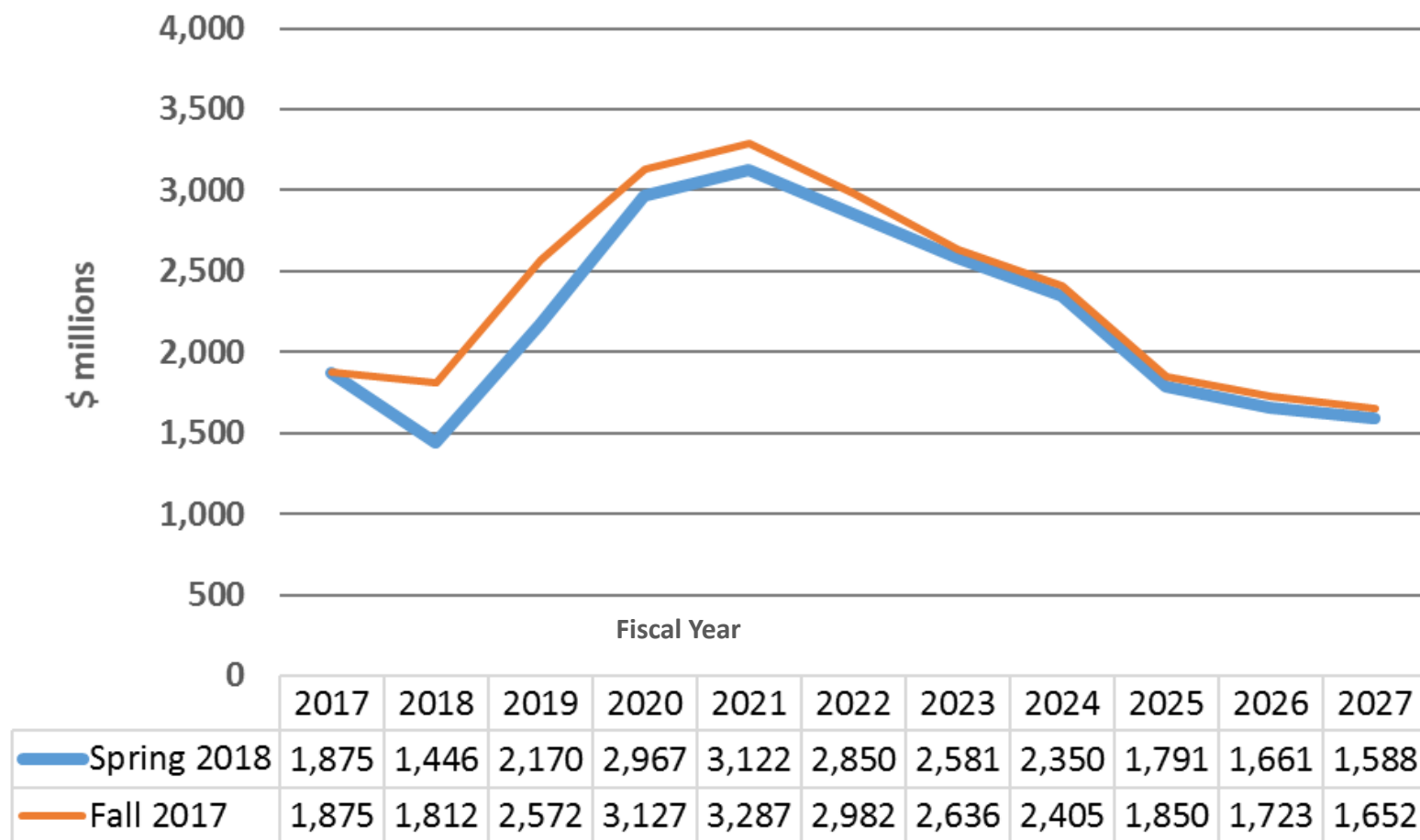
⁶ Analysts Forecasts: Retrieved 3/9/2018; Individual forecasts released between 01/22/2018 and 03/02/2018; Crude Forecast Brent.

Source: Department of Revenue – Economic Research

Spring 2018 Cost Forecast



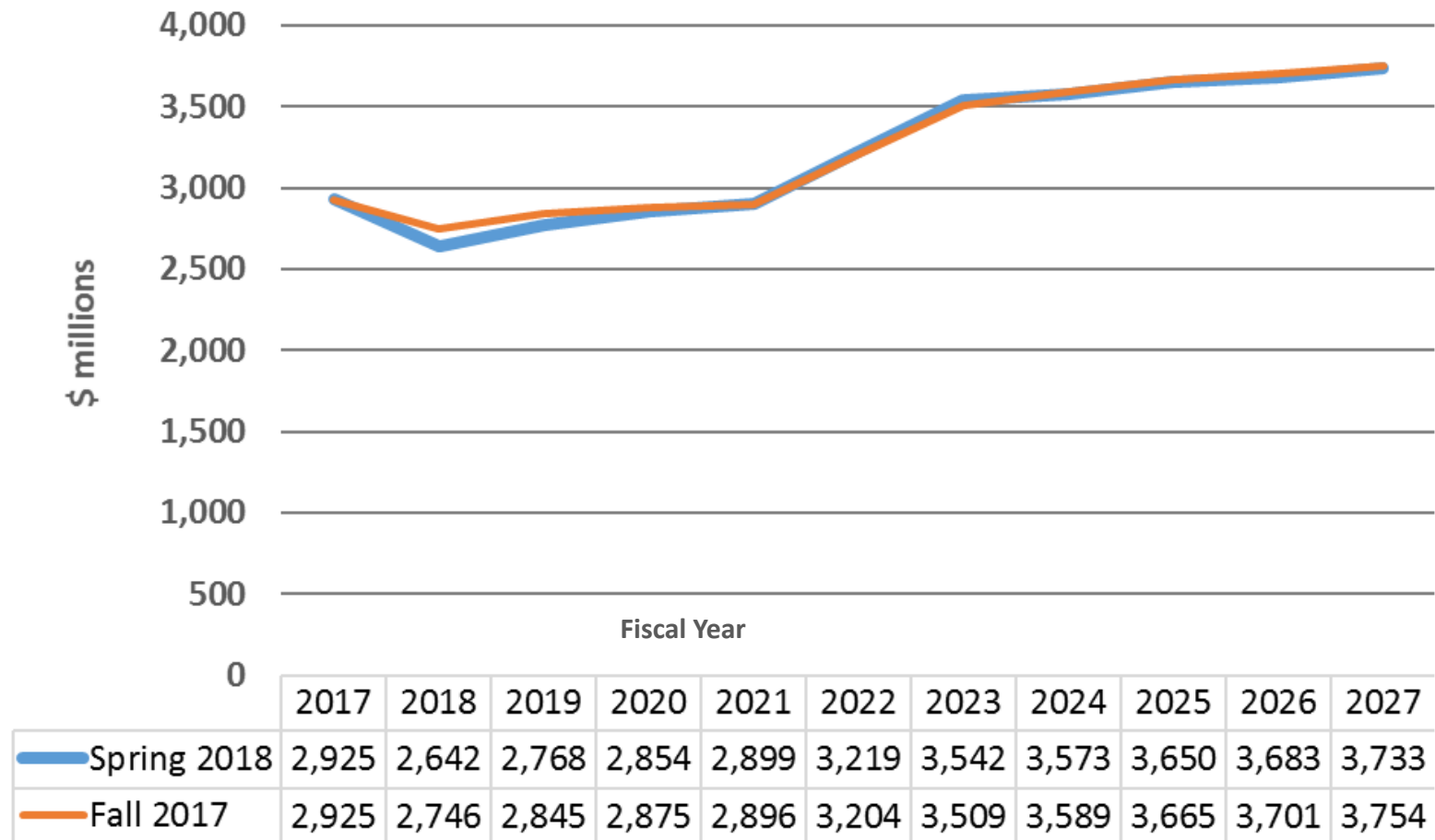
COST FORECAST: North Slope Capital Lease Expenditures



Source: Department of Revenue – Economic Research

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

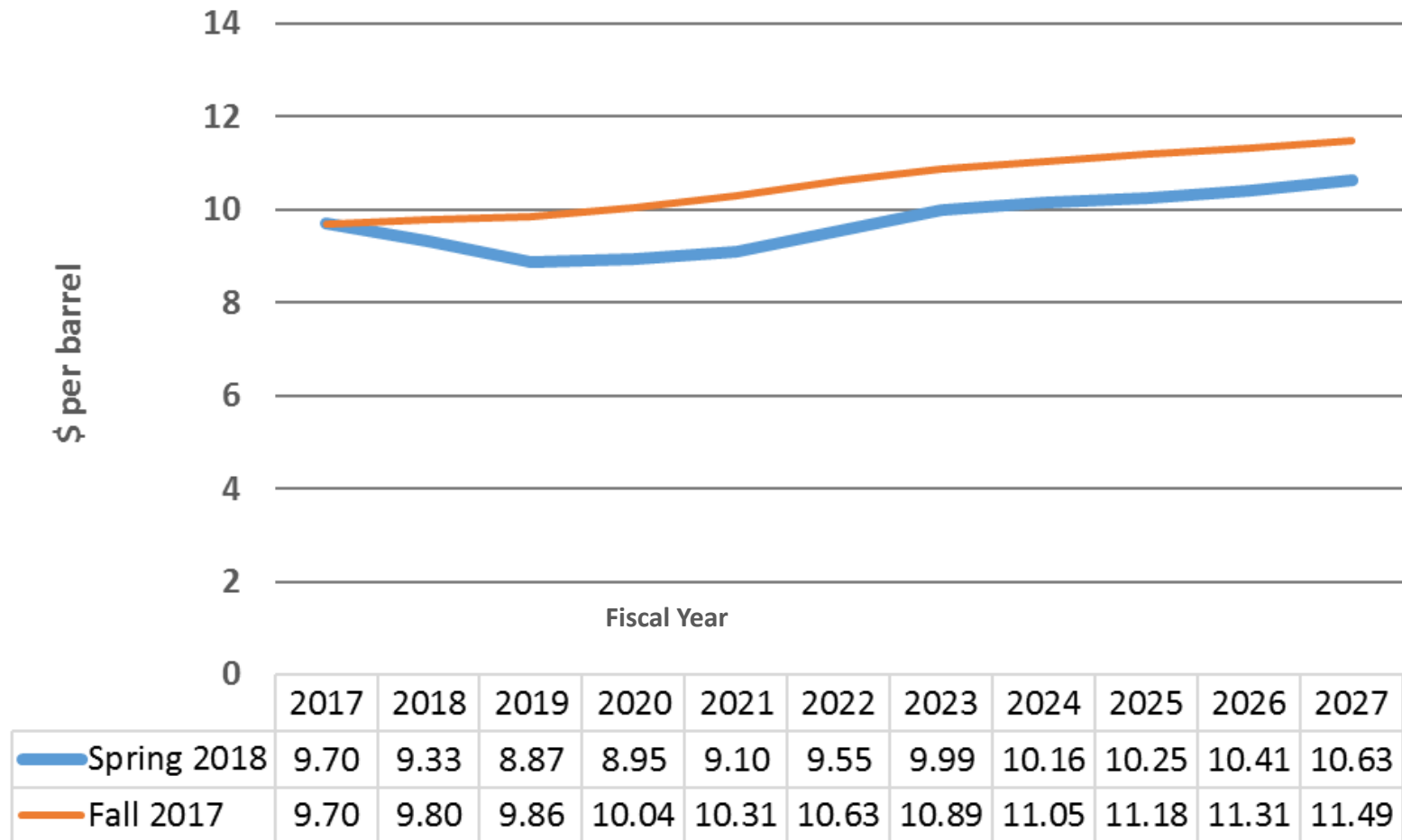
COST FORECAST: North Slope Operating Lease Expenditures



Source: Department of Revenue – Economic Research

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

COST FORECAST: North Slope Transportation Costs



Spring 2018 Credits Forecast



Explanation of Statutory Appropriation

- Statutory guidance in AS 43.55.028
 - Appropriation is 10 or 15 percent of “taxes levied by AS 43.55.011”
- Department calculates statutory appropriation based on production tax before application of any credits
- Credits are not set out in AS 43.55.011, therefore department adopted an interpretation based on tax before credits
 - Calculated and provided to Legislature in 2015-2018 sessions
 - Published in RSB beginning fall 2016
 - Incorporated into Governor’s budget beginning 2017
- Legislative Legal opinion: “ambiguous” as to whether to calculate on tax before or after credits
 - Court precedent to interpret ambiguous tax statute in favor of taxpayer
 - Department was aware that credits had been used to secure loans and finance projects; awareness influenced interpretation favoring taxpayer
 - Interpretation consistent with spirit of the program and intent of legislature to market Alaska resource development with commitment to pay credits within a short-term timeline

Illustration of Tax and Credit Calculations

FY 2019 production tax illustration – Spring 2018

~170 million taxable barrels

	Per taxable Barrel	Total(\$MM)
Market Price	\$63.00	\$10,700
Transportation Cost	(\$8.87)	(\$1,500)
Gross Value	\$54.13	\$9,200
Lease Expenditures	(\$26.41)	(\$4,550)
Production Tax Value	\$27.72	\$4,700
Tax @ 35%	\$9.70	\$1,650
Per-Barrel Credit	\$8.00	(\$1,350)
Net Payment	\$1.70	\$300
Gross Minimum Tax @ 4%	\$2.17	\$368
Higher Of (Actual Tax)	\$2.17	\$368

**10% x \$1,650 =
\$165 Million***



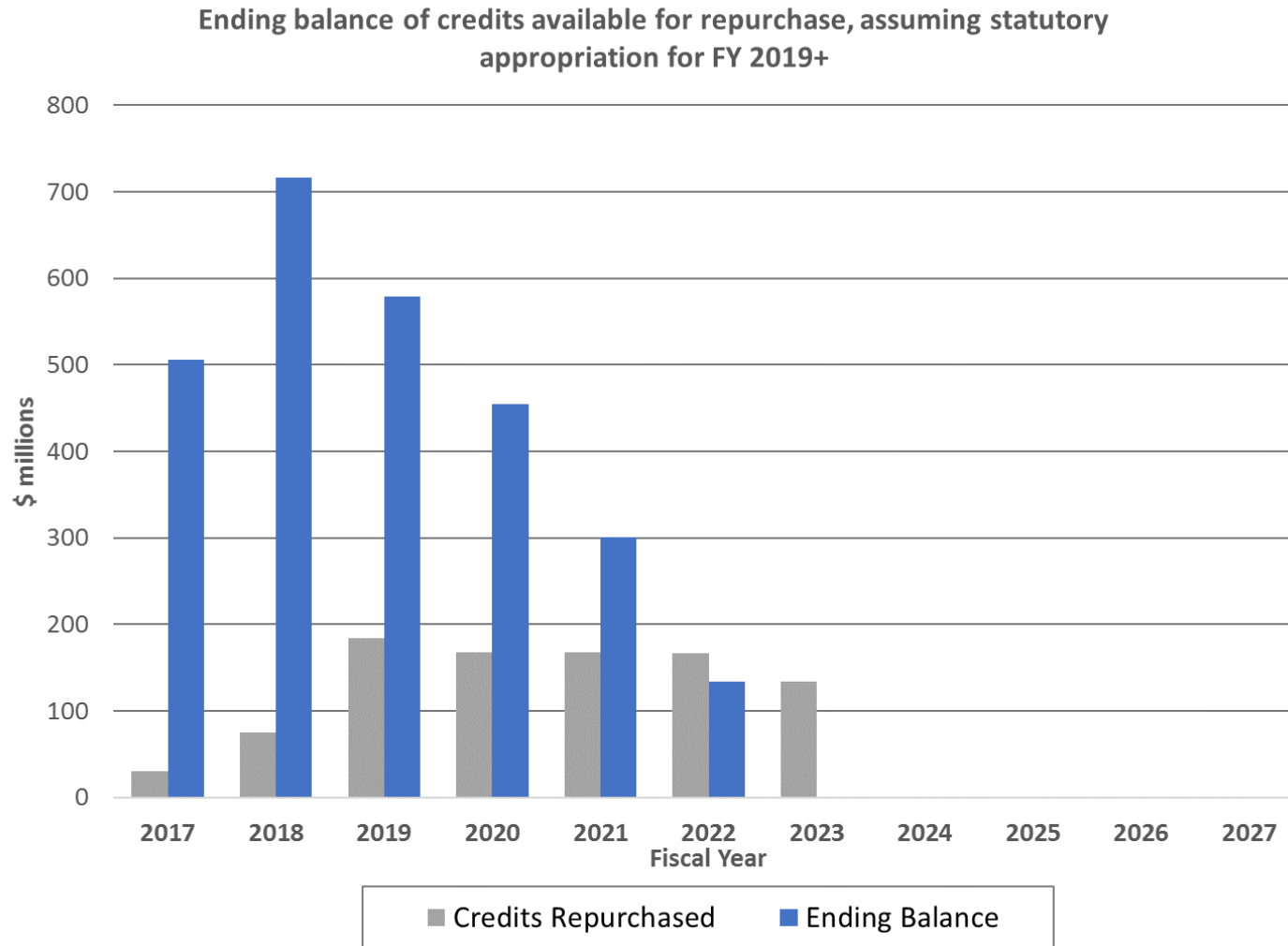
* Note: Tax calculation simplified for illustration purposes. Actual statutory appropriation calculation for FY 2019 is \$184 million and includes Cook Inlet and private landowner royalty taxes

FY 2019 Statutory Credit Appropriation

Key Changes from Fall 2017 to Spring 2018:

- Gross value increased
 - \$7 higher wellhead value → \$1.2 billion higher gross value
- Tax before credits increased
 - \$1.2 billion more profit x 35% = \$400 million
- Different Statutory Appropriation Multiplier
 - Appropriation is 15% of tax before credits when price forecast <\$60, 10% when price forecast is \$60+
- Estimated Statutory Appropriation is \$184 million
 - Down from \$206 million in Fall 2017
 - Based on tax before credits for North Slope plus Cook Inlet and private landowner royalty

CREDITS FORECAST: Outstanding Tax Credit Obligations



Source: Department of Revenue – Economic Research

Per AS 43.55.028, minimum appropriation is 10% of production tax levied, before credits, when ANS price forecast is \$60 or higher. Minimum appropriation is 15% of production tax levied, before credits, when ANS price forecast is below \$60. Does not include changes in company behavior or credit transfers beyond FY 2019 as a result of only making minimum appropriation.

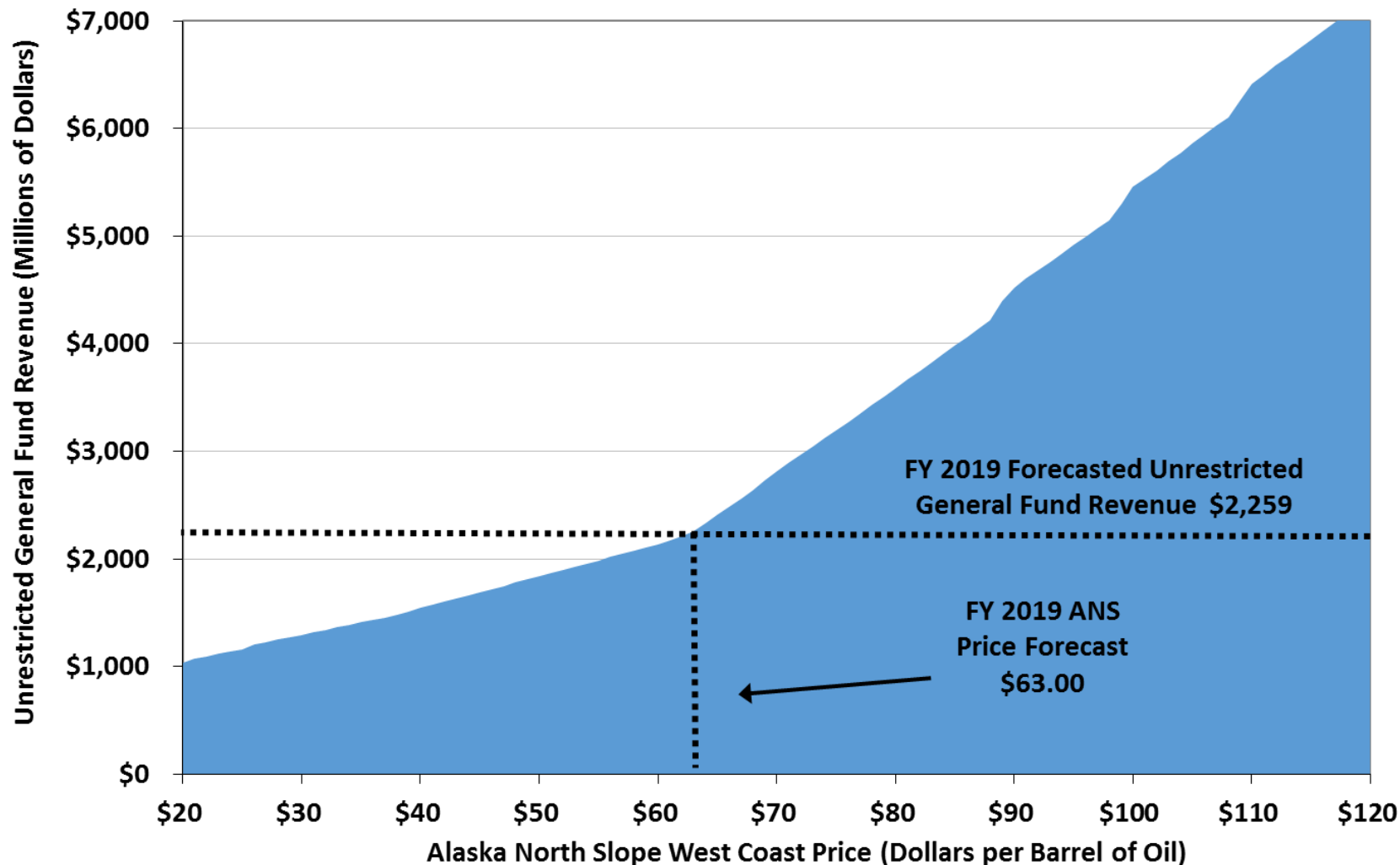
Changes from Fall 2017 Revenue Forecast



FORECAST CHANGE: Comparison of Spring 2018 and Fall 2017 Forecasts

	Fiscal Year 2018				Fiscal Year 2019			
	Spring 2018 Fcst	Final Fall 2017 Fcst	Change	% Change	Spring 2018 Fcst	Final Fall 2017 Fcst	Change	% Change
Oil Price (ANS West Coast per barrel)	\$61.00	\$56.00	\$5.00	9%	\$63.00	\$57.00	\$6.00	11%
ANS Oil Production (THS bbls/day)	521.8	533.4	(11.6)	-2%	526.6	525.7	0.9	0%
ANS Deductible Lease Expenditures (\$ millions)	\$3,978	\$4,236	(\$258)	-6%	\$4,487	\$4,529	(\$41)	-1%
Transportation Costs (\$/barrel)	\$9.33	\$9.80	(\$0.47)	-5%	\$8.87	\$9.86	(\$0.99)	-10%
Unrestricted GF Petroleum Revenue (\$ millions)	\$1,801	\$1,561	\$240	15%	\$1,639	\$1,437	\$202	14%

UGF Relative to Price per Barrel, FY 2019



Source: Department of Revenue – Economic Research

Note: At or above \$63/barrel, a \$1 increase in ANS price leads to approximately \$75 million in additional UGF revenue.

Below \$63/barrel, a \$1 increase in ANS price leads to approximately \$30 million in additional UGF revenue.

Spring 2018 Total Revenue Forecast



REVENUE FORECAST: 2017 to 2019 Totals

\$ millions	History	Forecast	
Revenue Type	FY 2017	FY 2018	FY 2019
Unrestricted General Fund			
Oil Revenue	876.4	1,800.9	1,639.2
Non-Oil Revenue ⁽¹⁾	460.4	495.5	542.3
Investment Revenue	17.3	40.9	77.6
Total Unrestricted Revenue	1,354.1	2,337.3	2,259.1
Designated General Fund			
Non-Oil Revenue ⁽¹⁾	395.0	410.3	369.9
Investment Revenue	59.4	73.5	46.5
Subtotal	454.4	483.8	416.5
Other Restricted Revenue			
Oil Revenue	822.4	413.1	566.9
Non-Oil Revenue ⁽¹⁾	301.1	255.4	255.9
Investment Revenue ⁽²⁾	6,773.4	3,390.9	3,995.6
Subtotal	7,896.8	4,059.4	4,818.3
Federal Revenue			
Oil Revenue	1.4	13.7	3.6
Federal Receipts ⁽³⁾	3,198.2	3,963.9	3,674.8
Subtotal	3,199.6	3,977.5	3,678.4
Total State Revenue	12,904.9	10,858.0	11,172.3

Source: Department of Revenue – Economic Research

(1) Except Federal and Investment

(2) Investment revenue is primarily Alaska Permanent Fund, based on 6.5% median expected return

(3) Federal Receipt forecasts are based on total authorization, actual revenue typically comes in below forecast

WRAP-UP: Changes to 10-Year Unrestricted Revenue Outlook

ANS Production Changes from Prior Year

	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>
Spring 2018	-3,600	3,800	9,500	-10,800	-16,600	-11,800	-3,100	1,400	600	-2,800
Fall 2017	6,900	-7,800	1,100	-8,500	-15,800	-9,900	-1,500	2,300	1,400	-2,000

ANS Oil Price (Nominal \$ per barrel) – Spring 2018 vs Fall 2017

	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>
Spring 2018	\$61.00	\$63.00	\$64.00	\$66.00	\$67.00	\$69.00	\$70.00	\$72.00	\$74.00	\$75.00
Fall 2017	\$56.00	\$57.00	\$58.00	\$61.00	\$64.00	\$65.00	\$66.00	\$69.00	\$72.00	\$75.00
change	\$5.00	\$6.00	\$6.00	\$5.00	\$3.00	\$4.00	\$4.00	\$3.00	\$2.00	\$0.00

Unrestricted GF Revenue (\$ millions) – Spring 2018 vs Fall 2017

	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>
Spring 2018	2,337	2,259	2,276	2,336	2,343	2,401	2,468	2,625	2,783	2,831
Fall 2017	2,082	2,047	2,063	2,156	2,219	2,275	2,297	2,427	2,641	2,839
change	256	212	213	181	124	126	171	198	142	-8

Source: Department of Revenue – Economic Research

GF = General Fund

THANK YOU

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APPENDIX: 2017 to 2019 Unrestricted Petroleum Revenue Forecast

\$ millions	History	Forecast	
Unrestricted General Fund Revenue	FY 2017	FY 2018	FY 2019
Taxes			
Petroleum Property Tax	120.4	116.7	110.0
Petroleum Corporate Income Tax	-59.4	115.0	190.0
Production Tax	134.4	654.6	418.9
Subtotal Taxes	195.4	886.2	718.9
Royalties			
Mineral Bonuses and Rents	15.5	29.3	19.5
Oil and Gas Royalties	676.2	878.9	896.5
Interest	<u>-10.7</u>	<u>6.5</u>	<u>4.4</u>
Subtotal Royalties	680.9	914.7	920.3
Total Petroleum Revenue	876.4	1,800.9	1,639.2

Source: Department of Revenue – Economic Research

APPENDIX: 2017 to 2019 Unrestricted Non-Petroleum Revenue Forecast

\$ millions	History	Forecast	
Unrestricted General Fund Revenue	FY 2017	FY 2018	FY 2019
Taxes			
Non-Petroleum Corporate Income	86.5	145.0	145.0
Mining License Tax	41.4	43.0	46.4
Marijuana	0.9	4.6	9.0
Tobacco	43.4	40.1	40.0
Motor Fuel (Non Aviation) ⁽¹⁾	34.7	0.0	0.0
Motor Fuel (Conservation Surcharge)	6.6	6.3	6.3
Insurance Premium Tax ⁽²⁾	0.0	0.0	56.7
Other Taxes	<u>52.7</u>	<u>56.3</u>	<u>55.9</u>
Subtotal Taxes	266.2	295.3	359.3
Investments	17.3	40.9	77.6
Other	194.2	200.1	182.9
Total Non-Petroleum Revenue	477.7	536.4	619.9

Source: Department of Revenue – Economic Research

(1) Beginning in FY 2018, Motor Fuel (Non Aviation) is classified as DGF revenue. Prior to FY 2018, it is classified as UGF revenue.

(2) Beginning in FY 2019, Insurance Premium tax is classified as UGF revenue. Prior to FY 2019, it is classified as DGF revenue.