Revenue Requirements Follow-up Discussion

Oct. 3, 2018

BPA Rates Hearing Room

Agenda

Time	Topic and Presenters
9:00 a.m.	Introductions
9:15 a.m.	New depreciation study
9:50 a.m.	I-5 Reinforcement Project (South of Allston) regulatory asset decision
10:25 a.m.	Transmission financial reserves
11:00 a.m.	Conclude

New Depreciation Study

Veronica Wittig and Lornida Limpf

What is a depreciation study?

A comparison of book reserve with calculated accrued depreciation

Why do a study?

- Depreciation expense is an estimate used in accounting to reflect the decrease in value of the corresponding assets. BPA's revenue requirement is designed to recover depreciation expense from customers.
- Depreciation rates are influenced by factors such as technological changes and maintenance policies.
- The last BPA depreciation study was performed in FY 2011-2012 using data through Sept. 30, 2010.

Depreciation results

COMPARISON OF DEPRECIATION EXPENSE AND ANNUAL ACCRUAL RATES
AS OF SEPTEMBER 30, 2016

		2010 STUDY		2016 STUDY		
ACCOUNT	ORIGINAL COST	PROFORMA EXPENSE	ANNUAL ACCRUAL RATE PERCENT	ANNUAL ACCRUAL AMOUNT	ANNUAL ACCRUAL RATE PERCENT	INCREASE/ (DECREASE)
(1)	(2)	(3)=(2)*(4)	(4)	(5)	(6)	(7)=(5)-(3)
MISCELLANEOUS INTANGIBLE PLANT	9,558,538.92	353,092	3.69	430,946	4.51	77,854
TRANSMISSION PLANT						
LAND AND LAND RIGHTS - SUBSTATIONS	29,318,577.64	980,285	3.34	983,363	3.35	3,078
LAND AND LAND RIGHTS - LINES	18,844,720.14	373,346	1.98	359,029	1.91	(14,317)
STRUCTURES AND IMPROVEMENTS	420,258,937.48	7,405,631	1.76	7,887,792	1.88	482,161
STATION EQUIPMENT	3,775,286,767.21	82,155,541	2.18	86,492,271	2.29	4,336,730
TOWERS AND FIXTURES	1,291,720,149.39	21,493,648	1.66	25,554,113	1.98	4,060,465
POLES AND FIXTURES	417,841,304.67	13,537,677	3.24	15,879,599	3.80	2,341,922
OVERHEAD CONDUCTOR AND CLEARING ROW	1,392,956,735.90	36,273,066	2.60	50,377,755	3.62	14,104,689
UNDERGROUND CONDUCTOR AND DEVICES	21,910,574.89	414,231	1.89	310,328	1.42	(103,903)
ROADS AND TRAILS	273,431,764.57	3,820,427	1.40	4,125,493	1.51	305,066
TOTAL TRANSMISSION PLANT	**7,641,569,531.89**	**166,453,851**	**2.18**	**191,969,743**	**2.51**	**25,515,892**
GENERAL PLANT						
LAND AND LAND RIGHTS	667,021.69	42,792	6.42	45,606	6.84	2,814
STRUCTURES AND IMPROVEMENTS	257,771,239.88	4,579,466	1.78	5,016,445	1.95	436,979
OFFICE FURNITURE AND EQUIPMENT						
OFFICE FURNITURE	1,730,700.15	91,277	5.27	87,117	5.03	(4,160)
DATA PROCESSING	124,823,122.57	16,569,851	13.27	21,903,764	17.55	5,333,913
SOFTWARE	157,630,344.92	26,952,066	17.10	23,671,087	15.02	(3,280,979)
TOTAL ACCOUNT 391	284,184,167.64	43,613,194		45,661,968		2,048,774
TRANSPORTATION EQUIPMENT						
ROLLING STOCK	56,037,627.02	1,868,848	3.33	2,055,548	3.67	186,700
HELICOPTERS	9,234,320.42	306,805	3.32	284,828	3.08	(21,977)
AIRPLANES	8,656,305.86	545,432	6.30	651,880	7.53	106,448
TOTAL ACCOUNT 392	73,928,253.30	2,721,085		2,992,256		271,171
STORES EQUIPMENT	3,728,800.02	145,707	3.91	127,894	3.43	(17,813)
TOOLS, SHOP AND GARAGE EQUIPMENT	11,429,856.87	468,103	4.10	469,856	4.11	1,753
LABORATORY EQUIPMENT	27,776,612.48	1,911,304	6.88	2,190,713	7.89	279,409
POWER OPERATED EQUIPMENT	28,927,622.54	1,560,828	5.40	698,072	2.41	(862,756)
COMMUNICATION EQUIPMENT	374,281,362.94	25,443,498	6.80	30,938,682	8.27	5,495,184
COMMUNICATION EQUIPMENT - TOWERS AND BUILDINGS	46,620,842.77	2,187,802	4.69	1,895,560	4.07	(292,242)
COMMUNICATION EQUIPMENT - FIBER OPTICS	241,797,318.13	9,745,279	4.03	11,077,136	4.58	1,331,857
MISCELLANEOUS EQUIPMENT	78,818,795.68	5,278,728	6.70	5,254,364	6.67	(24,364)
TOTAL GENERAL PLANT	**1,429,931,893.94**	**97,697,787**	**6.83**	**106,368,552**	**7.44**	**8,670,765**
TOTAL DEPRECIABLE PLANT	**9,081,059,964.75**	**264,504,731**	**2.91**	**298,769,241**	**3.29**	**34,264,510**

Major drivers for the increase

- Inflation and increasing cost of removal for long-lived assets.
- Capital investment growth.

Comparison of Net Salvage
As of September 30, 2016

ACCOUNT	FY2010 SURVIVOR CURVE	FY2010 NET SALVAGE PERCENT	FY2016 SURVIVOR CURVE	FY2016 NET SALVAGE PERCENT
MISCELLANEOUS INTANGIBLE PLANT	40-SQ	0	40-SQ	0
TRANSMISSION PLANT				
LAND AND LAND RIGHTS - SUBSTATIONS	30-SQ	0	30-SQ	0
LAND AND LAND RIGHTS - LINES	50-SQ	0	50-SQ	0
STRUCTURES AND IMPROVEMENTS	65-R2.5	(10)	70-R2.5	(25)
STATION EQUIPMENT	43-S0.5	(10)	45-S0	(10)
TOWERS AND FIXTURES	70-R3	(25)	75-R4	(30)
POLES AND FIXTURES	55-R2.5	(75)	57-R2	(100)
OVERHEAD CONDUCTORS AND CLEARING ROW	55-R4	(40)	60-R4	(60)
UNDERGROUND CONDUCTORS AND DEVICES	40-S3	(5)	50-S3	(5)
ROADS AND TRAILS	75-R3	(5)	75-R4	(10)
GENERAL PLANT				
LAND AND LAND RIGHTS	15-SQ	0	15-SQ	0
STRUCTURES AND IMPROVEMENTS	60-R3	(5)	65-R3	(20)
OFFICE FURNITURE AND EQUIPMENT				
OFFICE FURNITURE	20-SQ	0	20-SQ	0
DATA PROCESSING	5-SQ	0	5-SQ	0
SOFTWARE	5-SQ	0	5-SQ	0
TRANSPORTATION EQUIPMENT				
ROLLING STOCK	19-S2.5	5	21-S2	10
HELICOPTERS	14-R4	40	15-R4	40
AIRPLANES	11-S2.5	25	11-S3	20
STORES EQUIPMENT	30-SQ	0	30-SQ	0
TOOLS, SHOP AND GARAGE EQUIPMENT	25-SQ	0	25-SQ	0
LABORATORY EQUIPMENT	15-SQ	0	15-SQ	0
POWER OPERATED EQUIPMENT	21-R1.5	0	21-R1.5	15
COMMUNICATION EQUIPMENT	15-SQ	0	15-SQ	0
COMMUNICATION EQUIPMENT - TOWERS AND BUILDI	25-S2	0	25-S0.5	(5)
COMMUNICATION EQUIPMENT - FIBER OPTICS	25-S2.5	0	25-S1.5	(15)
MISCELLANEOUS EQUIPMENT	15-SQ	0	15-SQ	0

I-5 Reinforcement Project (South of Allston) Regulatory Asset Decision

Mark Korsness and Alex Lennox

I-5 Corridor Reinforcement Project Overview

- New 80 Mile 500kV transmission line and 2 new substations
- Castle Rock, WA to Troutdale, OR

I-5 Corridor Reinforcement Timeline

- 1970's
  - The need to build the line was first identified

I-5 Corridor Reinforcement Timeline

- 2008
  - Transmission planning studies reconfirmed the need in 10-year planning horizon.

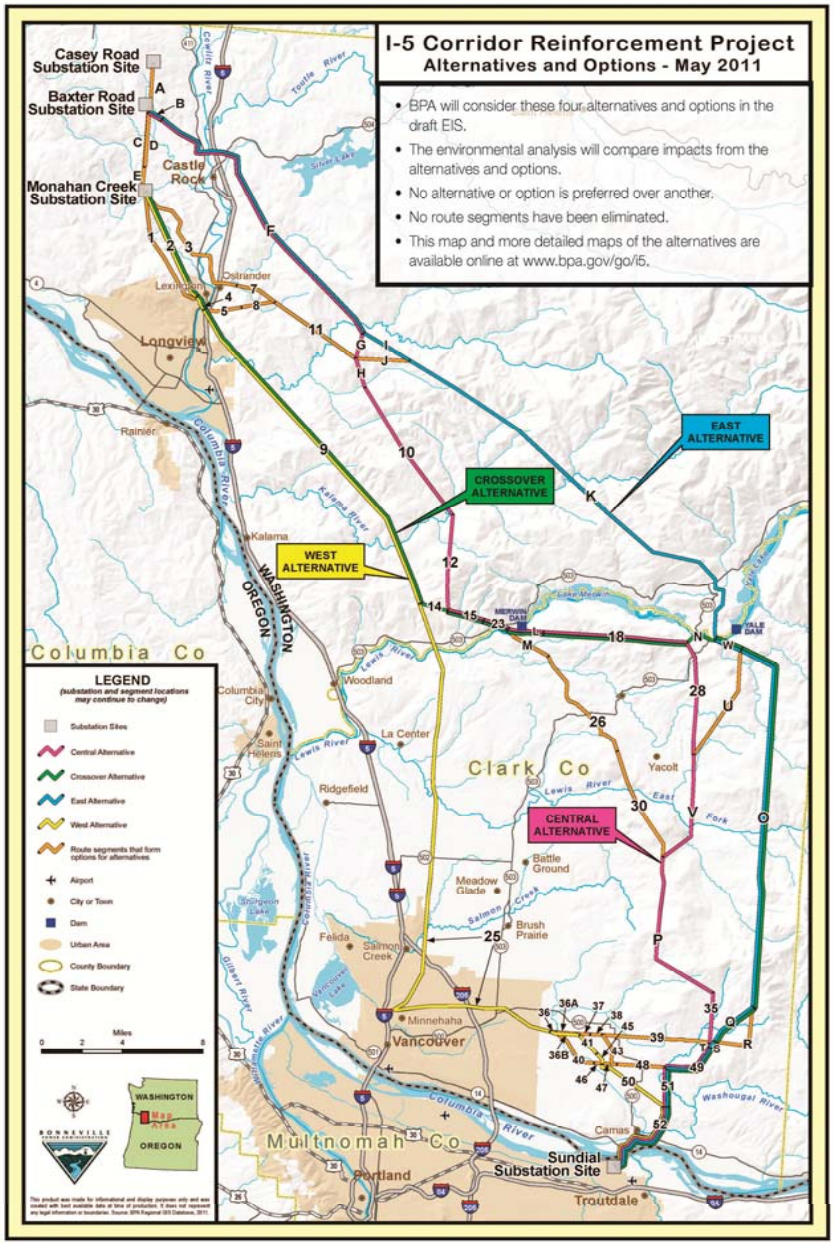
I-5 Corridor Reinforcement Timeline

- 2009
  - Launched Project
  - Assembled Project Team
  - Developed initial routes, survey, field studies
  - Announced and involved the public, 10,000 addresses
  - NEPA

STOP BPA
Line 31!
BPA
MORE
MORE
-Find a
er Way!

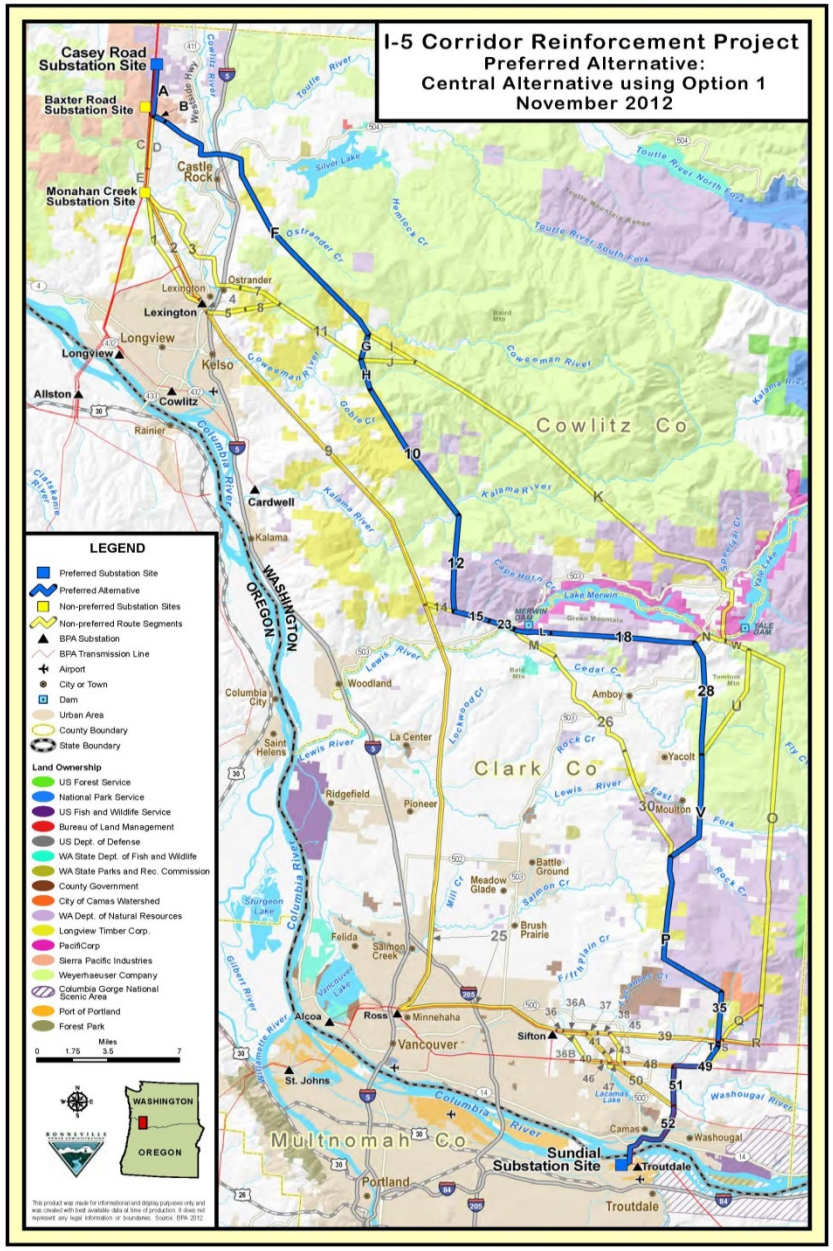
EXIT
EXIT
Project Need
Project Description
Maryam

STOP
BPA
NO 15 STORY TOWERS
IN POPULATED AREAS!
STOPTOWERSNOW.COM
097334
NOWAYBPA.COM
AUTOMOTISERVICE CENTE


I-5 Corridor Reinforcement Project
Alternatives and Options - May 2011
• BPA will consider these four alternatives and options in the draft EIS.
• The environmental analysis will compare impacts from the alternatives and options.
• No alternative or option is preferred over another.
• No route segments have been eliminated.
• This map and more detailed maps of the alternatives are available online at www.bpa.gov/go/i5.
Casey Road Substation Site
Baxter Road Substation Site
Monahan Creek Substation Site
Castle Rock
Longview
Rainier
Kalama
Woodland
Columbia City
Saint Helens
La Center
Ridgefield
Felida
Salmon Creek
Minnehaha
Vancouver
Portland
Meadow Glade
Battle Ground
Brush Prairie
Yacolt
Camas
Troutdale
Sundial Substation Site
Columbia Co
Clark Co
Multnomah Co
WASHINGTON
OREGON
EAST ALTERNATIVE
CROSSOVER ALTERNATIVE
WEST ALTERNATIVE
CENTRAL ALTERNATIVE
LEGEND
(substation and segment locations may continue to change)
Substation Sites
Central Alternative
Crossover Alternative
East Alternative
West Alternative
Route segments that form options for alternatives
Airport
City or Town
Dam
Urban Area
County Boundary
State Boundary
Miles
0 2 4 8
WASHINGTON
Map Area
OREGON

I-5 Corridor Reinforcement Timeline

- 2012
  - November 2012, BPA released a draft EIS for public review and comment
  - 16 line route possibilities
  - Identified preferred alternative
    - Central Alternative using Central Option 1
  - Public, elected officials, local and federal agencies


I-5 Corridor Reinforcement Project
Preferred Alternative:
Central Alternative using Option 1
November 2012
Casey Road Substation Site
Baxter Road Substation Site
Monahan Creek Substation Site
Sundial Substation Site
Castle Rock
Lexington
Longview
Kelso
Allston
Cowlitz
Rainier
Cardwell
Kalama
Woodland
Columbia City
Saint Helens
La Center
Ridgeford
Pioneer
Amboy
Yacolt
Moulton
Battle Ground
Meadow Glade
Brush Prairie
Felida
Salmon Creek
Alcoa
Ross
Minnehaha
Vancouver
Sifton
St. Johns
Camas
Washougal
Troutdale
Portland
Cowlitz Co
Clark Co
Multnomah Co
WASHINGTON
OREGON
LEGEND
Preferred Substation Site
Preferred Alternative
Non-preferred Substation Sites
Non-preferred Route Segments
BPA Substation
BPA Transmission Line
Airport
City or Town
Dam
Urban Area
County Boundary
State Boundary
Land Ownership
US Forest Service
National Park Service
US Fish and Wildlife Service
Bureau of Land Management
US Dept. of Defense
WA State Dept. of Fish and Wildlife
WA State Parks and Rec. Commission
County Government
City of Camas Watershed
WA Dept. of Natural Resources
Longview Timber Corp.
PacifiCorp
Sierra Pacific Industries
Weyerhaeuser Company
Columbia Gorge National Scenic Area
Port of Portland
Forest Park
Miles
0 1.75 3.5 7

I-5 Corridor Reinforcement Timeline

- 2013
  - Extended comment period for the Draft EIS
  - 3,000 comments on the Draft EIS
  - 7,000 comments during the scoping
  - Worked with land owners to improve design to reduce project impacts

NOV/ 7/2012

PRIVATE
PROPERTY

Merwin Park
RIGHT 1/4 MILE

GREGORY
DRILLING

4X4
F150
Ford
Oregon
961 FXB

I-5 Corridor Reinforcement Timeline

- 2016
  - In February of 2016, BPA released the final EIS.
    - 6,500 Pages

BPA Core Values

I-5 Corridor Reinforcement Timeline

- 2017
  - In May 2017 completed an extensive review, update, and analysis of the need for the Project.
  - Decided not to build.

Regulatory Asset Decision

- BPA spent $130.013 million on the I-5 Corridor Reinforcement Project.
- The Administrator chose to recover the cost over time starting with the BP-20 rate case, amortizing the spending over a 5 year period. This results in an annual expense of $26 million.
- The 5 year amortization period is consistent with the expected life of the studies and planning activities on which the funds were spent. These activities have a relatively short useful life.
- The 5 year amortization period also directly supports BPA's strategic and financial plans as well as the leverage policy.
  - Every dollar of amortization is used to pay down debt which incrementally improves the Transmission debt-to-asset ratio.
  - Lengthening the amortization period would increase the ratio and likely would result in a corresponding increase in revenue financing. As a result, the revenue requirement in total would not change.

Transmission Financial Reserves

Cheryl Hargin and Melike Kayim

FY 2017 actuals to BP-16 crosswalk

TRANSMISSION	FY2017 RC	FY2017 EOY	Delta EOY - RC
SOY RESERVES for RISK (in $millions)	**$450**	**$444**	**($6)**
Net Revenues	$83	$91	$7
Non-Cash Expenses			
Reserve Financing	($15)		$15
Depreciation and Amortization	$254	$261	$7
Transmission Credit Projects Net Interest	$5	$4	($1)
Amortization of Capitalized Bond Premiuim	$1	$1	
Capitalization Adjustment	($19)	($19)	
Total	$226	$247	$21
Non-Cash Revenues / Accruals			
LGIA	($26)	($31)	($5)
AC Intertie CO/Fiber	($7)	($7)	
Cash Flow (Reserve)/Application	$7		($7)
Debt Repayment			
Repayment of Treasury Principal (Bonds + Appropriations)	($96)	($112)	($16)
Repayment of Capital Leases	($1)	($2)	
Debt Service Reassignment Principal	($200)	($200)	
Total	($324)	($352)	($28)
Other			
Accrual for Current Year's Payments (AP Adjustment)		$32	$32
Capital to Expense Adjustment for Mobile REDI (FY12-14)		($2)	($2)
Other		$3	$3
Total	$0	$33	$33
NET CHANGE	**($15)**	**$19**	**$34**
EOY RESERVES for RISK (in $millions)	**$435**	**$463**	**$28**

Main Drivers

- In FY 2017, net increase in reserves relative to BP-16 was $28 million.
- Net revenues were $7 million higher than BP-16.
- Depreciation and amortization came out $7 million higher than expected.
- Reserves financing funds of $15 million was used to pay off high-interest appropriations for interest savings.
- LGIA credits were $5 million higher than BP-16 projections.
- As of the end-of-year, cash balance was $32 million higher due to bills that were due in FY 2018. Now BPA is modeling accounts receivable/payable balances into reserve forecast for more accurate calculation of financial reserves for risk and to eliminate end-of-year forecast volatility.

FY 2018 forecast to BP-18 crosswalk

TRANSMISSION	FY2018 RC	FY2018 Q3 Forecast	Delta Q3 - RC
SOY RESERVES for RISK (in $millions)	**$402**	**$463**	**$61**
Net Revenues	$13	$28	$15
Non-Cash Expenses			
Reserve Financing	($15)	($15)	
Depreciation and Amortization	$273	$292	$19
Transmission Credit Projects Net Interest	$4	$4	
Amortization of Capitalized Bond Premiuim	$1	$1	
Capitalization Adjustment	($19)	($19)	
Total	$244	$263	$19
Non-Cash Revenues / Accruals			
LGIA	($17)	($17)	
AC Intertie CO/Fiber	($9)	($9)	
Debt Repayment			
Repayment of Treasury Principal (Bonds + Appropriations)	($48)	($48)	
Repayment of Capital Leases	($2)	($2)	
Debt Service Reassignment Principal	($192)	($192)	
Total	($268)	($268)	($0)
Other			
Calpine Settlement		$5	$5
Caithness Settlement			
Cash Payment for Previous Year's Transformer Purchase		($20)	($20)
Annual Cash Surplus	$2		($2)
Cash Flow Adjustment	($4)		$4
Total	($2)	($15)	($13)
NET CHANGE	**($12)**	**$9**	**$21**
EOY RESERVES for RISK (in $millions)	**$390**	**$472**	**$82**

Main Drivers

- In FY 2018, net expected increase in reserves relative to BP-18 is $82 million.
- Net revenues are $15 million higher than BP-18.
- Depreciation and amortization is $19 million higher than expected due to the new depreciation study.
- Reserves financing funds of $15 million was used to pay off high-interest appropriations for interest savings .
- BPA received $5 million from the Calpine settlement.
- A $20 million payment was made for a transformer that was purchased last year.

Report ID: 0023FY18
Requesting BL: TRANSMISSION BUSINESS UNIT
Unit of Measure: $ Thousands

QBR Forecast Analysis: Transmission Services

Through the Month Ended June 30, 2018
Preliminary/ Unaudited

Run Date/Time: July 17, 2018/ 03:41
Data Source: PFMS
% of Year Elapsed = 75%

		A	B	C
		FY 2018		FY 2018
		Rate Case	Current EOY Forecast	Current EOY Forecast - Rate Case
	Operating Revenues			
1	Sales	$ 893,151	$ 911,011	$ 17,859
2	Miscellaneous Revenues	41,183	40,734	(449)
3	Inter-Business Unit Revenues	117,982	126,333	8,350
4	**Total Operating Revenues**	**1,052,316**	**1,078,077**	**25,761**
	Operating Expenses			
5	Transmission Operations	167,050	156,942	(10,108)
6	Transmission Maintenance	176,580	172,767	(3,813)
7	Transmission Engineering	56,351	51,973	(4,377)
8	Trans Services Transmission Acquisition and Ancillary Services	119,461	131,743	12,282
9	Transmission Reimbursables	9,929	11,623	1,693
	BPA Internal Support		-	
10	Additional Post-Retirement Contribution	14,946	15,729	783
11	Agency Services G&A	78,994	74,705	(4,289)
12	Other Income, Expenses & Adjustments	(7,548)	()	7,548
13	Depreciation & Amortization	278,958	292,442	13,484
14	**Total Operating Expenses**	**894,721**	**907,924**	**13,203**
15	**Net Operating Revenues (Expenses)**	**157,596**	**170,154**	**12,558**
	Interest Expense and (Income)			
16	Interest Expense	176,449	162,816	(13,633)
17	AFUDC	(24,733)	(16,500)	8,233
18	Interest Income	(3,497)	(4,573)	(1,076)
19	**Net Interest Expense (Income)**	**148,219**	**141,743**	**(6,476)**
20	**Net Revenues (Expenses)**	**$ 9,377**	**$ 28,410**	**$ 19,034**

Transmission Services QBR Forecast Analysis: Explanation of Changes

Row 4 – Total Operating Revenues: Increased $26 million due to higher Ancillary services, and increased revenues for NT load and oversupply revenues.

Row 5 – 7 - Transmission Operations, Maintenance, and Engineering: Decreased $18 million reflecting reductions taken in Q2 to help meet BPA's cost management objective. The reductions are consistent with historical budget execution and spending trends. Transmission's Q3 forecast remains unchanged from the Q2 forecast.

Row 8 – Transmission Acquisition and Ancillary Services: Increased $12 million reflecting adding oversupply expense incurred to date and Energy/Generation Imbalance which was not included in Rate Case but is added in the current year to reflect the latest forecast of generator departures from the BPA's Balancing Authority, and the inclusion of contingent energy deliveries.

Row 11 – Agency Services G&A: Decreased $4 million due to the Corporate reductions taken in Q2 which are allocated to Transmission. These reductions were offset slightly by higher post retirement benefits.

Row 12 - Other Income, Expenses and Adjustments: Increased $7 million due to assigning the undistributed reduction to rows 5, 6 and 7 at the start of the year.

Row 13 – Depreciation Expense: Depreciation increased $13 million to reflect the updated depreciation study with adjustments for year-to-date performance.

Row 19 - Net interest Expense: Decreased $6 million due to lower lease financing interest.

Report ID: 0023FY17
Requesting BL: TRANSMISSION BUSINESS UNIT
Unit of Measure: $ Thousands

QBR Forecast Analysis: Transmission Services

Through the Month Ended September 30, 2017
Preliminary/ Unaudited

Run Date/Time: October 30, 2017/ 05:51
Data Source: EPM Data Warehouse
% of Year Elapsed = 100%

		A	B	C
		FY 2017		FY 2017
		Rate Case	Actuals: FYTD	EOY Actuals - Rate Case
	Operating Revenues			
1	Sales	$ 943,997	$ 922,108	$ (21,889)
2	Miscellaneous Revenues	39,154	41,491	2,337
3	Inter-Business Unit Revenues	117,591	128,126	10,535
4	**Total Operating Revenues**	**1,100,742**	**1,091,725**	**(9,017)**
	Operating Expenses			
5	Transmission Operations	160,800	144,518	(16,282)
6	Transmission Maintenance	164,272	166,929	2,657
7	Transmission Engineering	54,915	53,240	(1,675)
8	Trans Services Transmission Acquisition and Ancillary Services	140,782	140,914	131
9	Transmission Reimbursables	9,735	15,646	5,912
	BPA Internal Support			
10	Additional Post-Retirement Contribution	19,748	13,920	(5,828)
11	Agency Services G&A	64,775	66,724	1,949
12	Other Income, Expenses & Adjustments	(2,100)	(1,045)	1,055
13	Depreciation & Amortization	259,548	260,927	1,379
14	**Total Operating Expenses**	**872,475**	**861,773**	**(10,702)**
15	**Net Operating Revenues (Expenses)**	**228,267**	**229,952**	**1,685**
	Interest Expense and (Income)			
16	Interest Expense	205,969	164,121	(41,848)
17	AFUDC	(41,346)	(21,577)	19,769
18	Interest Income	(16,310)	(3,045)	13,265
19	**Net Interest Expense (Income)**	**148,313**	**139,499**	**(8,814)**
20	**Net Revenues (Expenses)**	**$ 79,954**	**$ 90,453**	**$ 10,499**

Transmission Services QBR Forecast Analysis: FY 17 Explanation of Changes

Row 4 – Total Operating Revenues: $9 million below what was assumed in rate case due to 600 MW of Point-to-point Long term conditional firm service that did not materialize in FY17.

Row 5 - Transmission Operations: $16 million below what was assumed in rate case which included Puget Sound Area Northern Intertie work, but the bulk of this work did not occur in FY17. BPA only incurs cost for this work once we are billed. Cost management actions, reductions taken in travel and training, and lower personnel costs due to hiring constraints was also a driver for the under spend.

Row 10 – Additional Post Retirement Contribution: $6 million below what was assumed in rate case due to implementing OPM's methodology for calculating the employer contribution rates in FY17.

Row 19 - Net interest Expense: $9 million below what was assumed in the rate case due to issuing less Treasury Borrowing debt.

THANK YOU

Didn’t get your question answered? Please email Communications@bpa.gov. Answers will be posted to www.bpa.gov/goto/financialoverview.

FINANCIAL DISCLOSURE

This information was publicly available on Oct. 1, 2018, and contains information sourced and not sourced directly from BPA financial statements.