2018 Integrated Program Review

Brent Ridge, VP Corporate Services/CFO/CRO
Kent Dittmer, Asset Manager/Controller
Dave Jordan, Cost & Scheduling Manager
Johnathan Hicks, Budget Supervisor
June 19, 2018

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Brent Ridge, VP Corporate Services/CFO/CRO

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Agenda

- Introductions
- Columbia Generating Station - Commitment to the Region
- 2018 Integrated Program Review (IPR)
- Columbia Long-Range Plan
  - O&M Projects
  - Capital Projects
- Cost Effective Operation

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Commitment to the Region - CGS

- Safe and reliable operation
- Cost-effective operation
- Sustaining excellence for the benefit of our public power members and regional customers
- Collaborate with BPA to implement innovative approaches to create value
- Grow Energy Northwest's Energy Services & Development opportunities to help reduce costs at Columbia Generating Station

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Cost-effective Operation

- Delivering the Nuclear Promise
- Lowering Cost of Power
- Allocating Resources & Eliminating Low-Value Work

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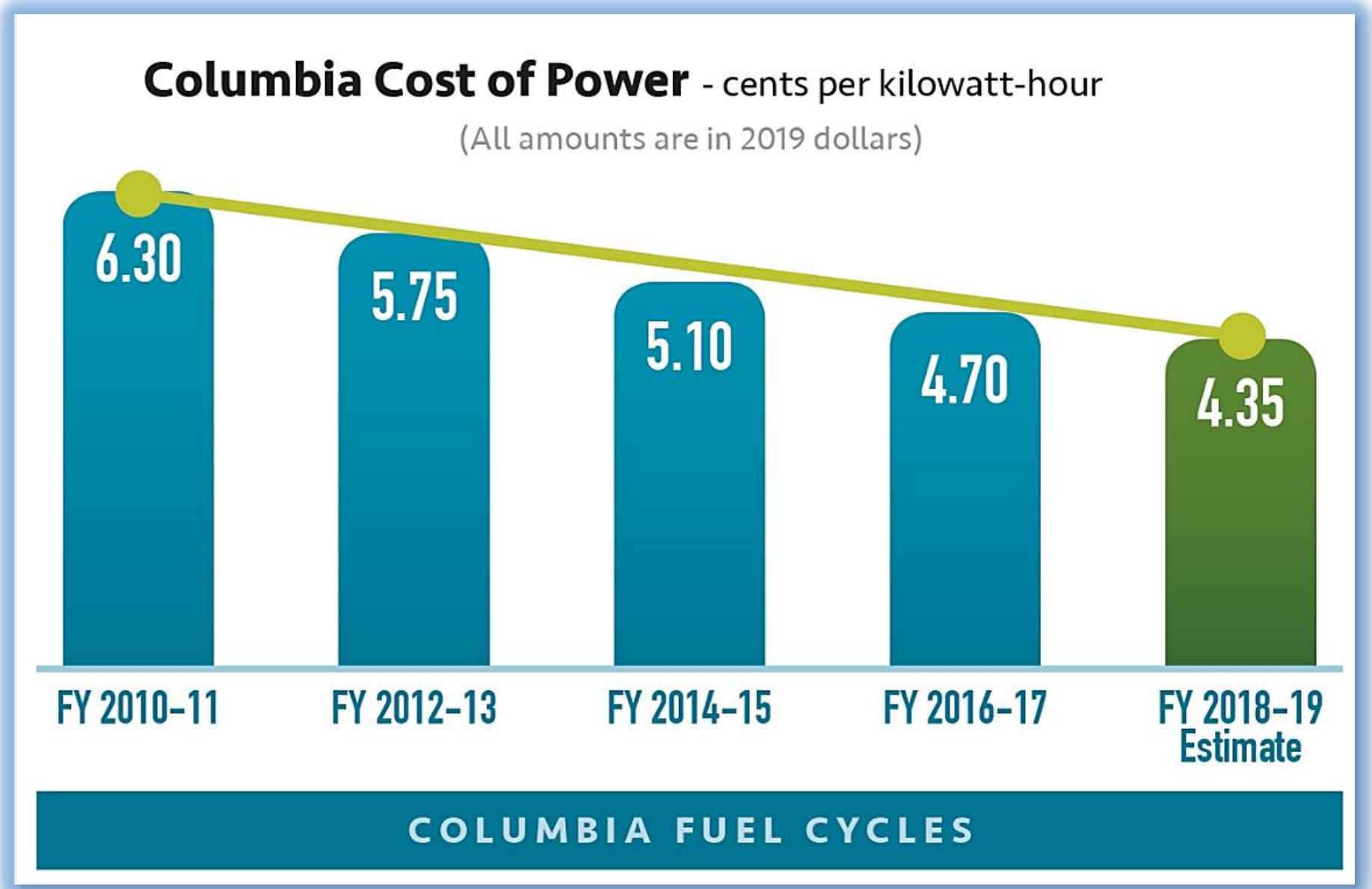

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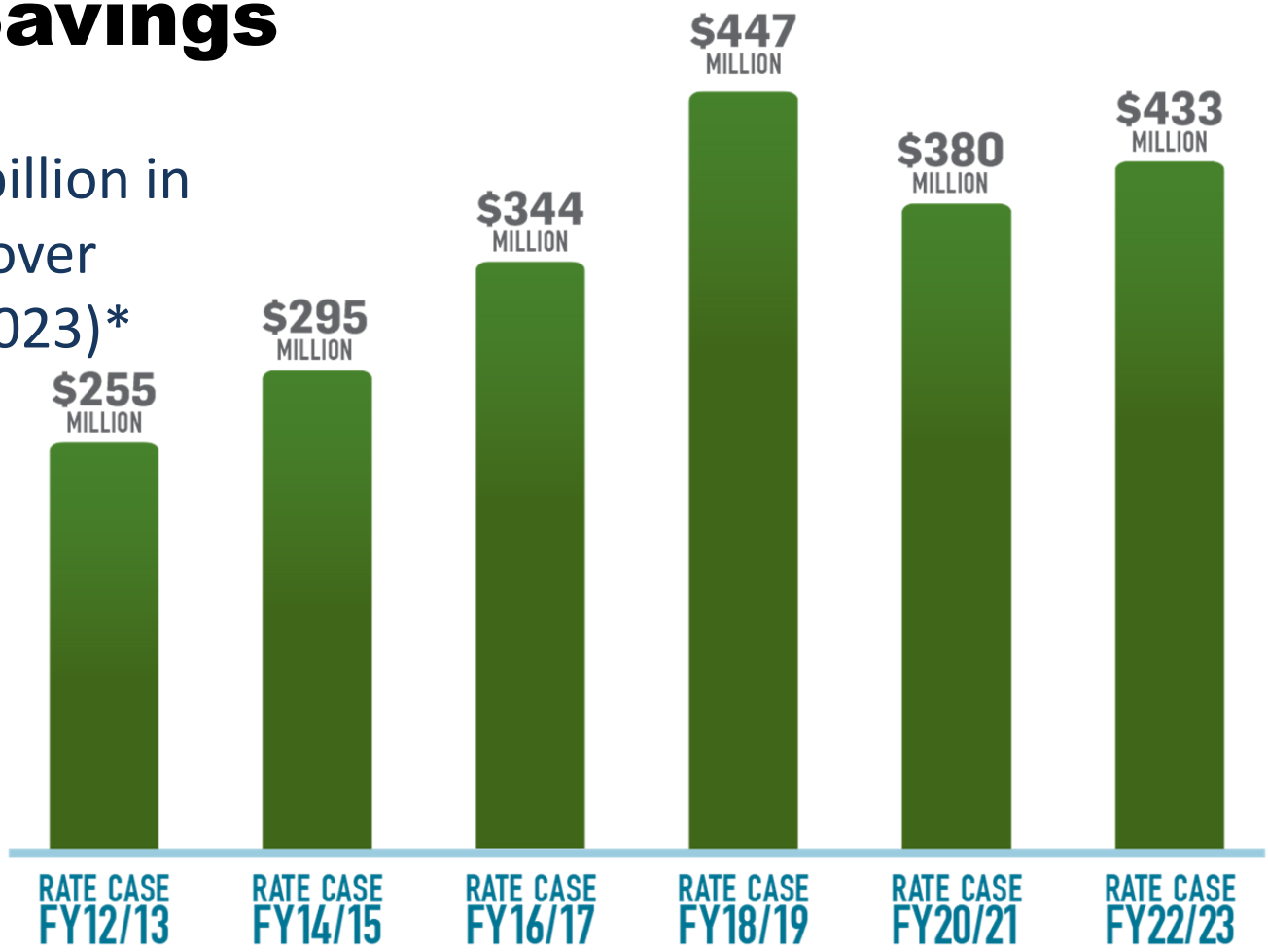
Regional Savings

More than $2.1 billion in regional savings over 12 years (2012-2023)*



* Does not include the $14.4 million undistributed reduction requested as part of 2018 IPR

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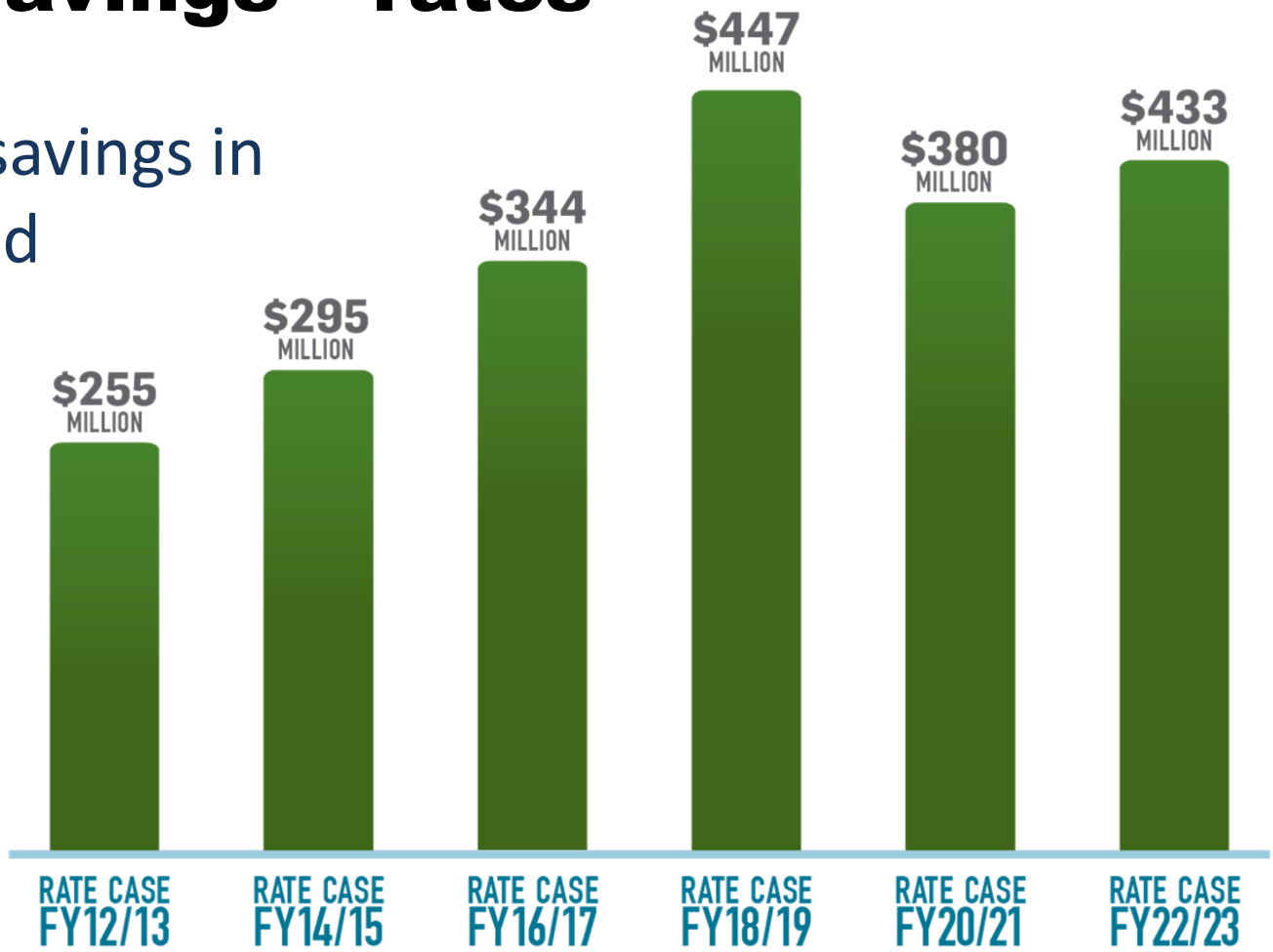
Regional Savings – rates*

6.4% – 11.5% savings in rates per period



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2018 IPR
Johnathan Hicks, Budget Supervisor

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Columbia IPR Controllable Cost Elements

- O&M Costs
- Spares/Inventory Adjustments
- Generation Taxes
- Fuel Procurement
- Independent Spent Fuel Storage (ISFSI) Decommissioning Fund
- ISFSI Settlement Claim Submittal Costs

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Columbia Commitment

- Hold Costs at BP18 Amount of $584.6 Million for 2018 IPR ($292.3 Million 2-Year Average)
  - Cost-effective Operation Initiatives
  - Managed Service Provider (Contractor Services)
  - Zero-Based Outage Budgeting
  - The $14.4 million undistributed reduction requested as part of 2018 IPR will not be approved by Energy Northwest's Executive Board until May 2019

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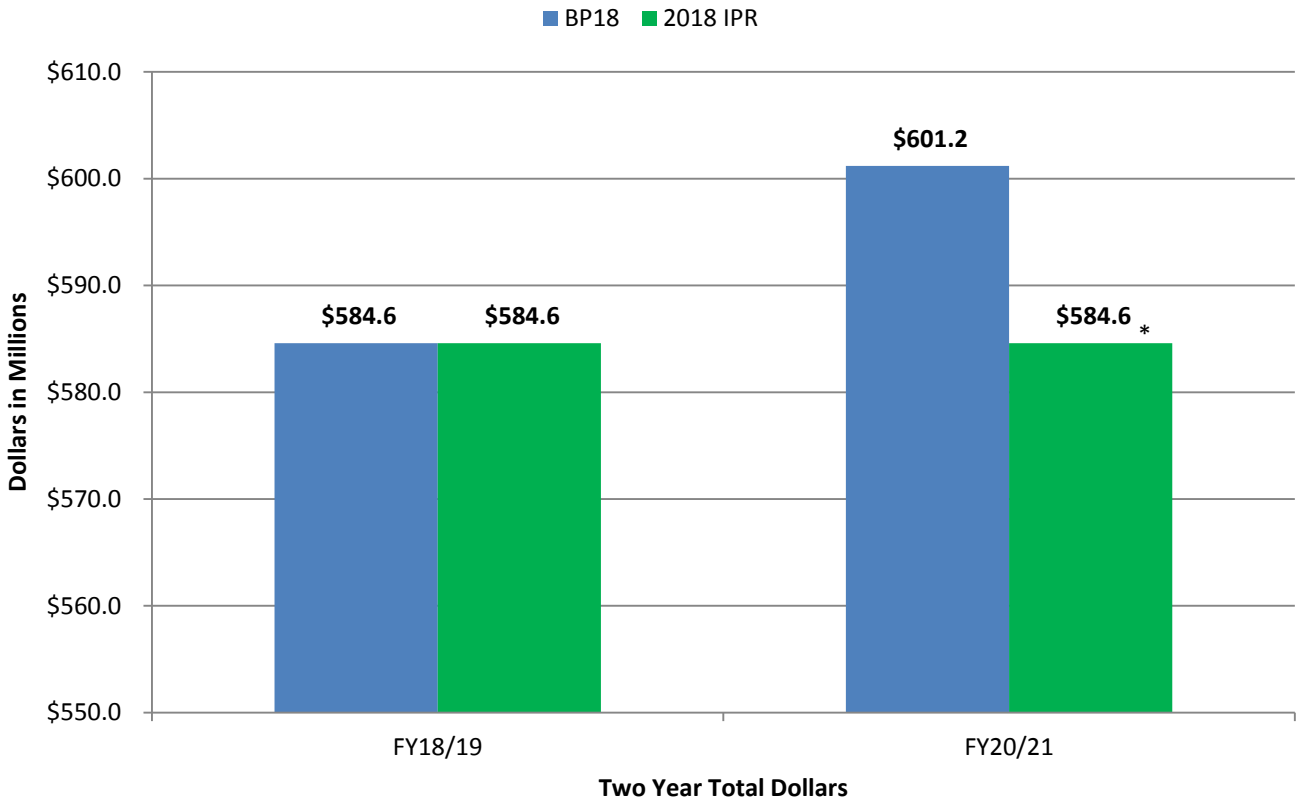
Columbia Changes to IPR



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Fiscal Year 18/19 Comparison to Rate Cases

Dollars in Thousands

BPA FY	BP18	2018 IPR	Total Delta
Columbia O&M	$494,244	$470,446	($23,798)
Spares/Inventory Adj	$12,500	$12,350	($150)
Generation Tax	$12,153	$11,817	($336)
Subtotal O&M	**$518,897**	**$494,613**	**($24,284)**
Fuel	$90,574	$89,161	($1,413)
Fuel Litigation	$1,248	$424	($824)
ISFSI Decomm Fund	$402	$402	$0
Agreed Upon Reduction	($26,521)	$0	$26,521
Total IPR	**$584,600**	**$584,600**	**$0**

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Fiscal Year 20/21 Comparison to Rate Cases

Dollars in Thousands

BPA FY	BP18	2018 IPR	Total Delta
Columbia O&M	$500,987	$501,386	$400
Spares/Inventory Adj	$12,375	$12,225	($150)
Generation Tax	$14,114	$13,228	($886)
Subtotal O&M	**$527,476**	**$526,839**	**($637)**
Fuel	$72,398	$71,326	($1,072)
Fuel Litigation	$824	$384	($440)
ISFSI Decomm Fund	$463	$463	$0
Undistributed Reduction*	$0	($14,412)	($14,412)
Total IPR	**$601,160**	**$584,600**	**($16,561)**

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Columbia Long Range Plan
Dave Jordan, Cost & Scheduling Manager

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LRP - Methodology

- Rolling 10-Year Forecast of O&M and Capital
  - Direct and indirect inputs updated and challenged annually
  - Procedurally driven and aligns with industry standards
- Projects ranked and approved in accordance with risk and budget constraints
- Risk is evaluated for deferred or cancelled activities
- LRP is cross-functionally challenged and approved
- Oversight of key activities to ensure performance (financial and technical) is achieved

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Approved Columbia FY 2019 Long Range Plan

BPA Rate Case		RC		RC		RC		RC		RC	
Columbia Fiscal Year	**FY19 (R24)**	**FY20**	**FY21 (R25)**	**FY22**	**FY23 (R26)**	**FY24**	**FY25 (R27)**	**FY26**	**FY27 (R28)**	**FY28**	**FY29 (R29)**
Operations & Maintenance (O&M) Costs											
Baseline Costs	$ 122,633	$ 121,018	$ 122,762	$ 121,183	$ 117,202	$ 112,732	$ 112,336	$ 107,508	$ 104,179	$ 101,403	$ 98,028
Outage Costs (Incremental)	22,600	-	22,952	-	20,334	-	18,632	-	18,632	-	18,632
Indirect Allocations ▼	$ 76,314	$ 82,612	$ 80,579	$ 82,713	$ 82,410	$ 80,820	$ 80,088	$ 79,400	$ 82,770	$ 84,176	$ 85,728
Plant Projects	$ 40,474	$ 7,239	$ 37,465	$ 12,533	$ 38,533	$ 7,243	$ 40,408	$ 7,343	$ 50,235	$ 9,532	$ 50,235
Facilities Projects	$ 983	$ 999	$ 1,002	$ 1,002	$ 1,002	$ 1,002	$ 1,002	$ 1,002	$ 1,002	$ 1,002	$ 1,002
Risk Reserve	2,938	1,500	2,000	1,500	2,000	1,500	2,000	1,500	2,000	1,500	2,000
Subtotal O&M Costs	$ 265,943	$ 213,369	$ 266,760	$ 218,931	$ 261,481	$ 203,297	$ 254,466	$ 196,752	$ 258,817	$ 197,613	$ 255,624
Escalation (3% Labor / 2% Non-Labor)	-	4,546	12,182	15,502	24,367	24,689	36,492	34,072	50,193	44,614	63,697
Total O&M Costs (escalated)	**$ 265,943**	**$ 217,915**	**$ 278,942**	**$ 234,433**	**$ 285,847**	**$ 227,985**	**$ 290,958**	**$ 230,824**	**$ 309,010**	**$ 242,227**	**$ 319,321**
Plant Projects *	$ 75,299	$ 36,505	$ 59,088	$ 34,947	$ 42,336	$ 46,244	$ 61,097	$ 35,064	$ 48,076	$ 51,051	$ 83,727
Risk Reserve	7,500	5,057	9,004	5,367	6,694	7,345	10,047	8,486	10,529	10,931	17,625
Facilities Projects	716	619	621	621	621	621	621	621	621	621	621
Information Technology Projects	9,448	12,032	10,025	9,415	10,075	10,846	10,336	10,443	9,414	9,414	10,075
Indirect Allocations ▼	16,752	10,747	14,651	9,377	11,352	12,314	14,747	14,836	13,197	11,223	11,435
Subtotal Capital Costs	$ 109,715	$ 64,960	$ 93,388	$ 59,726	$ 71,078	$ 77,370	$ 96,847	$ 69,449	$ 81,837	$ 83,240	$ 123,482
Escalation (3% Labor / 2% Non-Labor)	-	1,253	4,011	3,931	6,264	8,650	13,026	11,139	15,031	17,526	28,844
Total Capital Costs (escalated)	**$ 109,715**	**$ 66,212**	**$ 97,400**	**$ 63,657**	**$ 77,342**	**$ 86,020**	**$ 109,873**	**$ 80,588**	**$ 96,868**	**$ 100,766**	**$ 152,326**
Fuel Costs											
Nuclear Fuel Amortization **	51,537	58,224	52,580	58,942	53,848	58,813	53,949	60,251	55,313	61,390	56,228
Subtotal Fuel Costs	**$ 51,537**	**$ 58,224**	**$ 52,580**	**$ 58,942**	**$ 53,848**	**$ 58,813**	**$ 53,949**	**$ 60,251**	**$ 55,313**	**$ 61,390**	**$ 56,228**
Total Un-escalated Budget	**$ 427,195**	**$ 336,552**	**$ 412,729**	**$ 337,598**	**$ 386,406**	**$ 339,480**	**$ 405,261**	**$ 326,452**	**$ 395,967**	**$ 342,243**	**$ 435,334**
Total Escalation	-	5,798	16,193	19,434	30,631	33,339	49,518	45,210	65,224	62,139	92,541
Total Cost - Industry Basis	**$ 427,195**	**$ 342,350**	**$ 428,922**	**$ 357,032**	**$ 417,037**	**$ 372,819**	**$ 454,779**	**$ 371,663**	**$ 461,191**	**$ 404,382**	**$ 527,875**
Generation/Cost of Power											
Total Net Generation (Gwh)	8,777	9,884	8,777	9,857	8,777	9,884	8,777	9,857	8,777	9,884	8,777
Outage Days	40		40		40		40		40		40
Cost of Power (Cents per kWh)	$ 4.87	$ 3.41	$ 4.70	$ 3.43	$ 4.40	$ 3.43	$ 4.62	$ 3.31	$ 4.51	$ 3.46	$ 4.96
Cost of Power (Cents per kWh, escalated)	$ 4.87	$ 3.46	$ 4.89	$ 3.62	$ 4.75	$ 3.77	$ 5.18	$ 3.77	$ 5.25	$ 4.09	$ 6.01

Key Assumption/Qualifications (Revision - 3/08/18)

Escalation Rate = Labor 3% and Non-labor 2% (FY19-20 non-labor at 1.75% to align with Cost Effective Operations Model)

Net Generation 1160 Mwe; assumes 1% unplanned/ 2% planned loss

▼ Potential Financial Risk; *Includes moveable capital and FY19 Fukushima project funding ** Does not include fuel costs associated with generation increase

Every fourth year, generation increases slightly due to leap year

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Projects

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FY 2020 -2021 O&M Projects Critical to Plant Safety & Reliability

- Vessel Services
- Main Turbine Inspection
- Plant Valve Project
- In-Service Inspections
- Flow Accelerated Corrosion Program
- Outage Temporary Power
- Diesel Generator Preventative Maintenance
- Cooling Tower Circulation Water Preventative Maintenance

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FY 2020-2021 Capital Projects Critical to Plant Safety & Reliability

- Low Pressure Turbine Rotor Replacement
- Reactor Recirculation Pump Replacement
- Reactor Recirculation Pump/Motor Replacement
- Reactor Water Clean-up Heat Exchanger Replacement
- Control Rod Drive Replacement
- Main Turbine Valve Inspection/Refurbishment

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Cost-effective Operation
Kent Dittmer, Asset Manager/Controller

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Cost-effective Operation

- Cost-effective operation is an effort to ensure that resources allocated to the plant are being used in a method that optimizes value.
- Columbia recognizes the need to focus on continued improvement of cost-management

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Cost-effective Project Initiatives

- Staffing and Attrition Management
- Industry Initiatives – Nuclear Promise
- Managed Service Provider (Contractor Services)
- Zero-based Budgeting – Outage
- New Cost Savings Ideas

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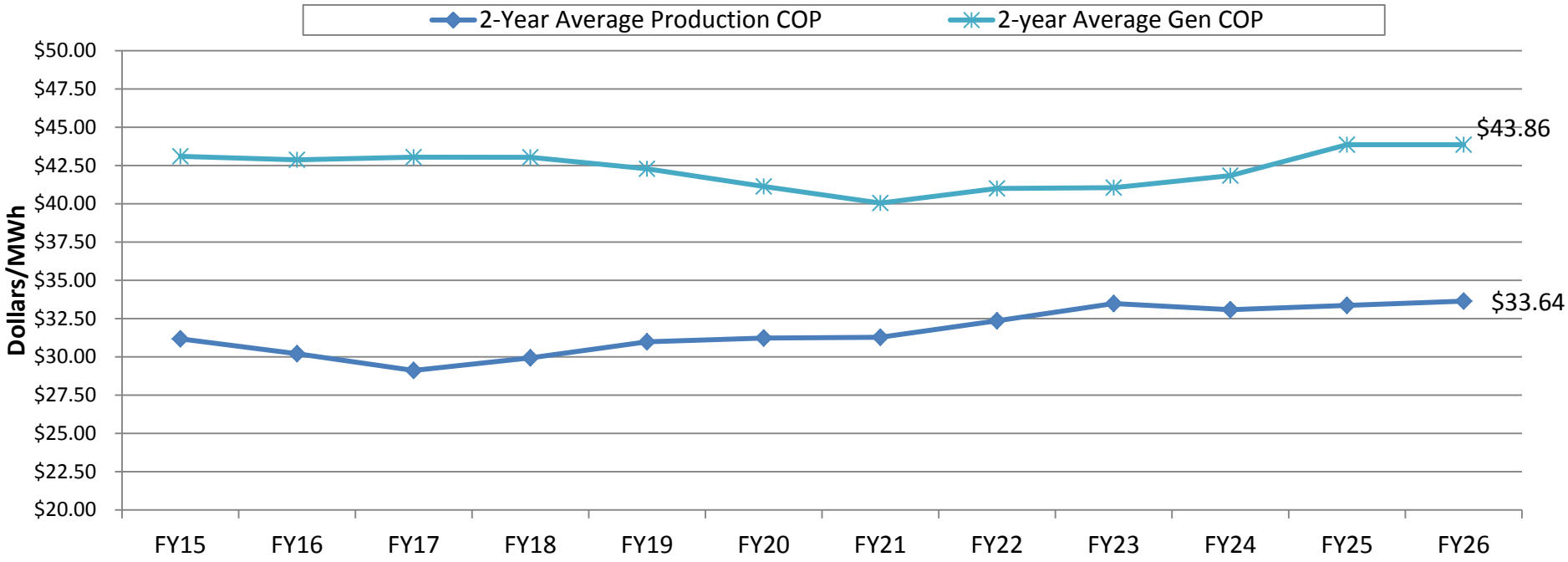
Cost-effective Operation – Columbia's LRP



Trajectory and targets assessed annually

Production COP – O&M+Fuel/Generation
Generating COP – O&M+Capital+Fuel/Generation

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Staffing and Attrition Management

- Targets established by Senior Leadership team
- Staffing targets and O&M Budget reviewed monthly

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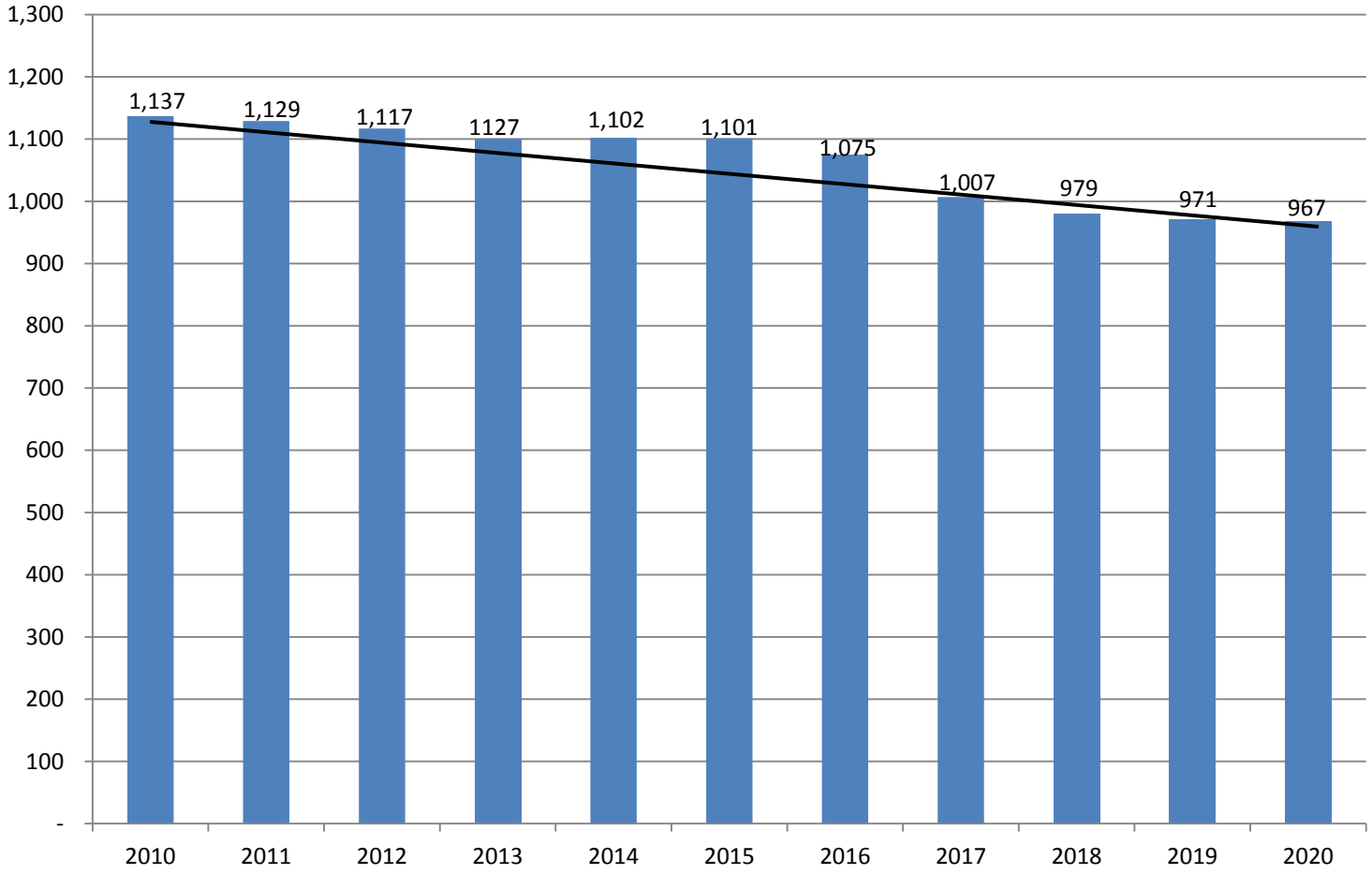
Staffing and Attrition Management



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Delivering the Nuclear Promise (DNP)

- 51 efficiency bulletins completed at Columbia Generating Station
- Staffing reductions and cost reductions at Columbia supported by DNP initiatives
  - ❑ Corrective Action Department
  - ❑ Training
  - ❑ Outage In-processing

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Managed Service Provider

- Energy Northwest Contingent Worker service program
  - In FY18 Transitioned station contractors to Volt Services
  - $1.2M savings in the first year
  - Implementation is expected to continue to reduce cost in the future
  - Benchmarked from Bonneville Power Administration

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Zero-Based Budgeting – Outage Incremental

- Budget Challenges established to meet Outage Milestone PO.9 “Complete Preliminary Outage Cost Estimate”
- Budget managed by Outage Manager with support from Asset Management
- Department incremental budgets reduced to below 90%, with risks identified

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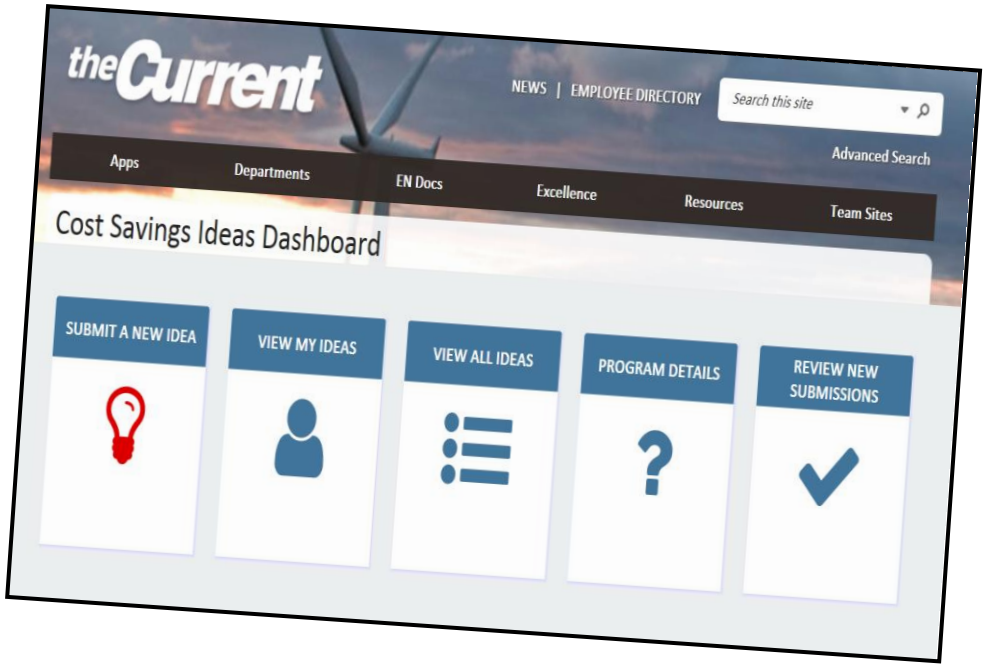
NEW - Cost Savings Ideas (CSI) SharePoint

Your idea could reinvent the way we do our jobs.

- New program to be initiated in June 2018
- Identify opportunities to reduce cost or "stop doing" something that is no longer needed
- Supervisor Led Committee to review submissions
- Drawing for award each month



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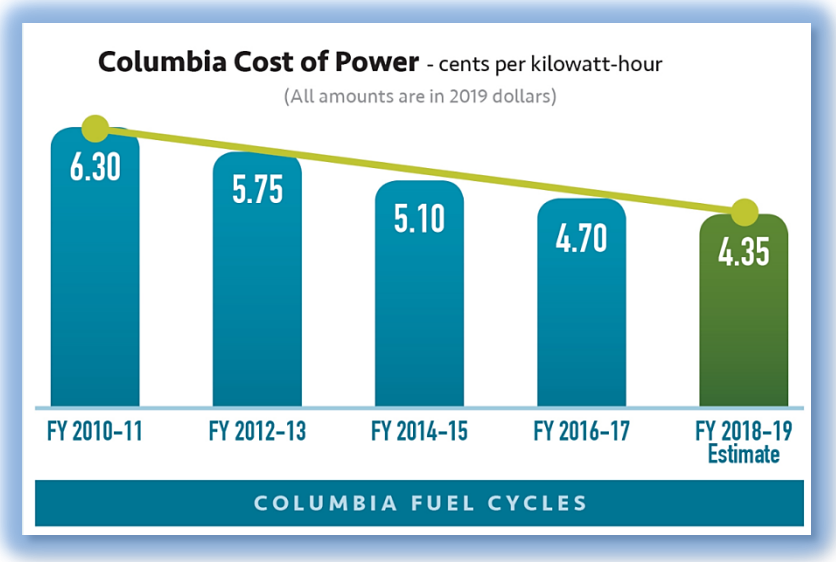
Achieving the Target

- Columbia continues to demonstrate improved behaviors in cost management
- Continued focus needed to continue the trajectory
- New targets continue to be revaluated annually



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Questions

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Financial Disclosure

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