BP-22 Integrated Program Review

Cristina Reyff, VP Corporate Finance/CFO/CRO
Johnathan Hicks, Budget & Project Performance Manager
Corey Olivier, Strategy & Risk Manager/Deputy CRO
David Jordan, Financial Planning & Analysis Manager
June 17, 2020
Cristina Reyff, VP Corporate Finance/CFO/CRO
Agenda

• Introductions
• Columbia Generating Station - Commitment to the Region
• BP-22 Integrated Program Review (IPR)
• Columbia Long-Range Plan
• Cost Effective Operation
Commitment to the Region

• Powering our Clean Energy Future

• Protect & Optimize Columbia Generating Station
  – Safe, reliable, predictable, and competitive generation asset
  – Long-term base load power
  – Excellence based management model
  – Regional value partner providing benefit to public power members and regional customers
Sustainable Cost-Competitiveness

• Financial Strategy
  – Strategic long-term outlook
  – Sustainable cost reduction plan
  – Prioritized capital investment plan
  – 10-Year fuel procurement strategic plan
  – Innovation

• Benchmarking

• Long-Term Forecasting

• Education
Columbia Generating Cost of Power Trend - cents per kilowatt-hour

(All amounts are in 2021 dollars)

FY 2010-11: 6.74
FY 2012-13: 6.19
FY 2014-15: 5.45
FY 2016-17: 5.06
FY 2018-19: 4.52
FY 2020-21 Estimate: 4.15

COLUMBIA FUEL CYCLES

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Regional Savings

More than $2.2 billion in regional savings over 12 years (2012-2023)*

<table>
<thead>
<tr>
<th>Rate Case</th>
<th>Savings (Million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY12/13</td>
<td>$255</td>
</tr>
<tr>
<td>FY14/15</td>
<td>$297</td>
</tr>
<tr>
<td>FY16/17</td>
<td>$351</td>
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<tr>
<td>FY18/19</td>
<td>$460</td>
</tr>
<tr>
<td>FY20/21</td>
<td>$418</td>
</tr>
<tr>
<td>FY22/23</td>
<td>$422</td>
</tr>
</tbody>
</table>
Regional Savings – rates*

*6.4% – 11.5% savings in rates per period – based on estimate that every $40 million in savings equals 1% reduction in wholesale electricity rates

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BP-22 IPR

Johnathan Hicks, Budget & Project Performance Manager

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Columbia IPR Cost Elements

• Operations & Maintenance (O&M) Costs
• Spares/Inventory Adjustments
• Generation Taxes
• Fuel Procurement
• Independent Spent Fuel Storage (ISFSI) Decommissioning Fund
• ISFSI Settlement Claim Submittal Costs
Columbia Commitment

• Hold Costs at BP20 Amount of $577.6 Million for BP-22 IPR ($288.8 Million 2-Year Average)
  – Have absorbed inflation
  – Accelerated staffing reductions through attrition
  – Cost-effective Operation Initiatives
  – Managed Service Provider
  – Zero-Based Spending Level
  – Adjusted Capital Plan by approximately $70 million
    • Pulled forward approximately $58 million in planned capital projects
      – Increase generation by approximately 24 MW
      – Reduce labor and benefits by approximately $1.9 million yearly starting FY23
    • Moves approximately $12 million from O&M to capital as a result of the updated corporate indirect allocation
Columbia Changes to IPR*

*This is a comparison of Columbia’s planned Long Range Plan during BP-20 to Columbia’s commitment for BP-22 IPR.
# Fiscal Year 20/21 Comparison to Rate Cases

Dollars in Thousands

<table>
<thead>
<tr>
<th>BPA FY</th>
<th>BP-20</th>
<th>BP-22 IPR</th>
<th>Total Delta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Columbia O&amp;M</td>
<td>$501,386</td>
<td>$479,972</td>
<td>($21,414)</td>
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<tr>
<td>Spares/Inventory Adj</td>
<td>$12,225</td>
<td>$12,225</td>
<td>$0</td>
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<tr>
<td>Generation Tax</td>
<td>$13,228</td>
<td>$13,228</td>
<td>$0</td>
</tr>
<tr>
<td><strong>Subtotal O&amp;M</strong></td>
<td>$526,839</td>
<td>$505,425</td>
<td>($21,414)</td>
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<tr>
<td>Fuel</td>
<td>$71,326</td>
<td>$71,326</td>
<td>($0)</td>
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<tr>
<td>Fuel Litigation</td>
<td>$384</td>
<td>$370</td>
<td>($14)</td>
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<tr>
<td>ISFSI Decomm Fund</td>
<td>$463</td>
<td>$463</td>
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<tr>
<td>Undistributed Reduction*</td>
<td>($21,428)</td>
<td>$0</td>
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<tr>
<td><strong>Total IPR</strong></td>
<td>$577,584</td>
<td>$577,584</td>
<td>($0)</td>
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</tbody>
</table>
# Fiscal Year 22/23 Comparison to Rate Cases
## Dollars in Thousands

<table>
<thead>
<tr>
<th>BPA FY</th>
<th>BP-20</th>
<th>BP-22 IPR</th>
<th>Total Delta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Columbia O&amp;M</td>
<td>$503,801</td>
<td>$465,978</td>
<td>($37,823)</td>
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<tr>
<td>Spares/Inventory Adj</td>
<td>$11,375</td>
<td>$13,889</td>
<td>$2,514</td>
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<td>Generation Tax</td>
<td>$13,807</td>
<td>$13,216</td>
<td>($591)</td>
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<td><strong>Subtotal O&amp;M</strong></td>
<td><strong>$528,983</strong></td>
<td><strong>$493,083</strong></td>
<td><strong>($35,900)</strong></td>
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<tr>
<td>Fuel</td>
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<td>($350)</td>
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<td>Fuel Litigation</td>
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<td>$370</td>
<td>($8)</td>
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<td>ISFSI Decomm Fund</td>
<td>$523</td>
<td>$523</td>
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<tr>
<td><strong>Total IPR</strong></td>
<td><strong>$613,842</strong></td>
<td><strong>$577,584</strong></td>
<td><strong>($36,258)</strong></td>
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Columbia Long Range Plan
Corey Olivier, Strategy & Risk Manager/Deputy CRO
Long-Range Plan (LRP) – Overview

• Complete 10-year financial forecast for Columbia (CAP/OM)
  – Operating Spending Levels
  – Projects (Plant, Facilities, and Information Technology)
  – Fuel
  – Columbia Owned Buildings

• Key Methodology and Strategy
  – Comprehensive, systematic, multi-phased and risk based
  – Proactive equipment reliability and life cycle management plan
  – Addresses known vulnerabilities and regulation
  – Incorporates necessary risk reserve and escalation
  – Incorporates cost reduction targets and rate case requirements
  – Annual update and challenge
**Approved Columbia FY 2021 Long Range Plan**

<table>
<thead>
<tr>
<th>BPA Rate Case</th>
<th>FY21 (R25)</th>
<th>FY22</th>
<th>FY23 (R26)</th>
<th>FY24</th>
<th>FY25 (R27)</th>
<th>FY26</th>
<th>FY27 (R28)</th>
<th>FY28</th>
<th>FY29 (R29)</th>
<th>FY30</th>
<th>FY31 (R30)</th>
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<tbody>
<tr>
<td><strong>Operations &amp; Maintenance (O&amp;M) Costs:</strong></td>
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<td></td>
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<tr>
<td>Baseline Costs (Incremental)</td>
<td>$22,992</td>
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<td>$21,804</td>
<td>-</td>
<td>$22,240</td>
<td>-</td>
<td>$22,240</td>
<td>-</td>
<td>$22,240</td>
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<td>$22,240</td>
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<tr>
<td>Indirect Allocations ▼</td>
<td>$79,875</td>
<td>$73,379</td>
<td>$74,106</td>
<td>$76,448</td>
<td>$75,927</td>
<td>$74,904</td>
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<td>$78,401</td>
<td>$79,620</td>
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<td>$79,553</td>
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<td>Plant Projects</td>
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<td>Facilities Projects</td>
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<td>$777</td>
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<td>$777</td>
<td>$1,022</td>
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<td>Risk Reserve</td>
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<td>$1,652</td>
<td>$2,000</td>
<td>$1,652</td>
<td>$2,000</td>
<td>$1,654</td>
<td>$2,787</td>
<td>$1,697</td>
<td>$2,300</td>
<td>$1,668</td>
<td>$3,200</td>
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<td>Subtotal O&amp;M Costs</td>
<td>$267,592</td>
<td>$205,730</td>
<td>$248,830</td>
<td>$198,127</td>
<td>$254,504</td>
<td>$197,413</td>
<td>$254,554</td>
<td>$198,056</td>
<td>$254,596</td>
<td>$199,690</td>
<td>$254,455</td>
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<td>Escalation (3% Labor / 1% Non-Labor)</td>
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<td>$3,439</td>
<td>$7,692</td>
<td>$9,992</td>
<td>$23,792</td>
<td>$23,992</td>
<td>$36,403</td>
<td>$34,232</td>
<td>$49,626</td>
<td>$45,411</td>
<td>$63,250</td>
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<td>O&amp;M-2-year average</td>
<td>$247,159</td>
<td>$227,280</td>
<td>$226,316</td>
<td>$225,984</td>
<td>$226,326</td>
<td>$227,073</td>
<td>$245,102</td>
<td>$231,705</td>
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<td><strong>Total O&amp;M Costs (escalated):</strong></td>
<td>$267,592</td>
<td>$209,169</td>
<td>$256,522</td>
<td>$208,119</td>
<td>$278,296</td>
<td>$221,405</td>
<td>$290,956</td>
<td>$232,288</td>
<td>$304,222</td>
<td>$245,102</td>
<td>$317,705</td>
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<td><strong>Capital Costs:</strong></td>
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<td></td>
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<td>Plant Projects *</td>
<td>$78,759</td>
<td>$60,845</td>
<td>$82,751</td>
<td>$50,124</td>
<td>$89,160</td>
<td>$28,717</td>
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<td>$54,445</td>
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<td>Risk Reserve</td>
<td>$8,108</td>
<td>$8,032</td>
<td>$11,199</td>
<td>$8,162</td>
<td>$7,983</td>
<td>$17,637</td>
<td>$12,273</td>
<td>$21,966</td>
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<td>$649</td>
<td>$649</td>
<td>$649</td>
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<td>$649</td>
<td>$649</td>
<td>$649</td>
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<tr>
<td>Information Technology Projects</td>
<td>$4,792</td>
<td>$6,045</td>
<td>$6,495</td>
<td>$8,294</td>
<td>$6,915</td>
<td>$5,706</td>
<td>$7,154</td>
<td>$7,154</td>
<td>$7,656</td>
<td>$8,586</td>
<td>$7,551</td>
</tr>
<tr>
<td>Indirect Allocations ▼</td>
<td>$16,378</td>
<td>$18,763</td>
<td>$17,754</td>
<td>$12,081</td>
<td>$13,586</td>
<td>$13,234</td>
<td>$12,018</td>
<td>$10,165</td>
<td>$10,333</td>
<td>$10,440</td>
<td>$10,844</td>
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<tr>
<td>Subtotal Capital Costs</td>
<td>$109,593</td>
<td>$94,334</td>
<td>$118,849</td>
<td>$79,309</td>
<td>$118,293</td>
<td>$65,943</td>
<td>$76,914</td>
<td>$81,580</td>
<td>$95,049</td>
<td>$84,305</td>
<td>$103,559</td>
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<tr>
<td>Escalation (3% Labor / 1% Non-Labor)</td>
<td>-</td>
<td>$1,334</td>
<td>$3,447</td>
<td>$3,405</td>
<td>$12,052</td>
<td>$8,394</td>
<td>$12,309</td>
<td>$14,720</td>
<td>$20,520</td>
<td>$19,871</td>
<td>$28,355</td>
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<tr>
<td>Capital 2-year average (unescalated)</td>
<td>$78,570</td>
<td>$106,591</td>
<td>$98,801</td>
<td>$71,429</td>
<td>$88,314</td>
<td>$93,932</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>Total Capital Costs (escalated):</strong></td>
<td>$109,593</td>
<td>$95,668</td>
<td>$122,295</td>
<td>$82,714</td>
<td>$130,344</td>
<td>$74,337</td>
<td>$89,223</td>
<td>$96,300</td>
<td>$115,569</td>
<td>$104,177</td>
<td>$131,914</td>
</tr>
</tbody>
</table>

**Fuel Costs:**

| Nuclear Fuel Amortization ** | $50,041 | $58,011 | $52,146 | $56,434 | $50,780 | $58,585 | $52,609 | $59,728 | $53,992 | $59,862 | $57,129 |
| Subtotal Fuel Costs | $50,041 | $58,011 | $52,146 | $56,434 | $50,780 | $58,585 | $52,609 | $59,728 | $53,992 | $59,862 | $57,129 |
| **Total Un-escalated Budget:** | $427,226 | $358,075 | $419,825 | $333,871 | $423,576 | $321,941 | $384,077 | $339,364 | $403,238 | $343,857 | $415,413 |
| **Total Escalation:** | - | $4,773 | $11,138 | $13,397 | $35,844 | $32,386 | $48,711 | $48,952 | $70,146 | $65,283 | $91,605 |
| **Total Cost - Industry Basis:** | $427,226 | $362,848 | $430,963 | $347,267 | $459,420 | $354,327 | $432,788 | $388,316 | $473,383 | $409,140 | $506,748 |

**Generation/Cost of Power:**

| Total Net Generation (Gwh) | 8,731 | 9,806 | 8,731 | 9,935 | 8,822 | 10,099 | 8,912 | 10,036 | 8,912 | 10,099 | 8,912 |
| Cost/MW/h (Production) - escalated | $36.38 | $27.25 | $35.35 | $26.63 | $37.30 | $27.97 | $38.55 | $29.10 | $40.15 | $30.47 | $42.06 |
| Cost/MW/h (Generating) - escalated | $48.93 | $37.00 | $49.36 | $34.96 | $52.08 | $35.40 | $48.56 | $38.69 | $53.12 | $40.88 | $56.86 |

**Key Assumption/Qualifications (Revision - 4/15/20):**

- Escalation Rate = Labor 3% and Non-labor 1% (FY22-FY24) 2% Non-labor (FY25-FY31)
- Net Generation 1160 Mwe; assumes 1% unplanned/ 2.5% planned loss; FY24 12Mwe increase MSR; FY26 12Mwe increase Main Turbine Upgrade; Every fourth year, generation increases slightly due to leap ▼ Potential Financial Risk; * Includes moveable capital ** Does not include fuel incs/allocs w/ generation increases +

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LRP Look Ahead – Major Capital Projects

(Implementation years)

• **Regulatory Projects**
  - Initial Plant License Renewal (FY21/FY23)
    • Total project cost $10 million
  - Independent Spent Fuel Storage Installation Pad Expansion (FY23-25)
    • Total project cost $13.6 million

• **Life Cycle Management Projects**
  - Reactor Water Clean-up Heat Exchanger Replacement (FY21)
    • Total project cost $16.3 million
  - Plant Process Computer Replacement (FY25)*
    • Total project cost $20 million - $5.8 million moved into BP-22 IPR
  - Reactor Recirculation Pump/Motor Replacement (FY21/FY25)
    • Total project cost $31.7 million
  - Low Pressure Turbine Replacements (FY21)
    • Total project cost $13.2 million
  - High Pressure Turbine Replacement (FY25)*
    • Total project cost $25 million - $7.7 million moved into BP-22 IPR
    • Approximately 12 MW gain in generation
  - Moisture Separator Reheater Replacement (FY23)*
    • Total project cost $38 million - $35.3 million moved into BP-22 IPR
    • Approximately 12 MW gain in generation

*capital funding increase in 2022 IPR planning years to support
LRP Look Ahead – Strategic Initiatives

- Capital projects support improved efficiency and/or O&M cost reduction efforts
  - Advanced Remote Monitoring
    - Foundation for condition based preventative maintenance
    - Total project cost $0.7 million
  - Fire Probabilistic Risk Assessment
    - Total project cost $0.4 million
  - 10 CFR 50.69: risk-informed categorization and treatment*
    - Total project cost $1.8 million - $1.2 million moved into BP-22 IPR
  - Security Boundary Wall*
    - Total project cost $7.0 million - $5.3 million moved into BP-22 IPR
    - Reduces O&M labor and benefits by approximately $1.9 million each year starting FY23

- Workday Enterprise Tool
  - Total project cost $5.4 million
  - Reduces future O&M software license fees and costs to maintain current financial enterprise tool

- Facilities Configuration Improvements
  - Total project cost $0.9 million

- Second License Renewal Study

- Extended Power Uprate Study
  - Total project cost for both Second License Renewal Study and Extended Power Uprate Study $2.8 million

*capital funding increase in 2022 IPR planning years to support initiatives
Cost-effective Operation
David Jordan, Financial Planning & Analysis Manager
Cost-effective Operation

Purpose: Purpose is to ensure continued competitiveness in the region while ALSO ENSURING safe, reliable, and predictable operation of Columbia for the extended future.

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

• Staffing and Attrition Management
• Managed Service Provider
• Zero-based Spending Levels – O&M
• Zero-based Spending Levels – Outage
• Cost Savings Idea program
• Inventory Control
Cost-effective Operation – Columbia’s LRP

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

Trajectory and targets assessed annually

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Staffing and Attrition Management

- Oversight by Senior Leadership
- Staffing targets reviewed bi-weekly as part of hiring
- O&M Spending Level reviewed monthly
- Project, temp, and intern utilization
- Capital project – direct
- Staff augmentation utilization & control (ex: managed service provider)
- Optimization – do new things / span of control
Staffing and Attrition Management

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Managed Service Provider

• Energy Northwest Contingent Worker service program
  – In FY18 transitioned station contractors to Volt Services
  – Reduction of staff augmentation costs
  – Implementation is expected to continue to reduce cost in the future
  – Benchmarked from Bonneville Power Administration
Zero-Based Spending Level – O&M

- Corporate Asset Management established spending level targets for Department Managers to adhere to
- Challenge Meetings set-up with each Department Managers
- Achieved $1.5M reduction in FY21, currently reflected in Columbia’s Long Range Plan
Zero-Based Spending Level – Outage Incremental

• Spending Level Challenges established to meet Outage Milestone PO.8 “Complete Preliminary Outage Cost Estimate”
• Spending Level managed by Outage Manager with support from Corporate Asset Management
• Spending Level challenges up to, and during, the Refueling Outage
Cost Savings Ideas (CSI) SharePoint

Your idea could reinvent the way we do our jobs.

- Program initiated in June 2018
- Identify opportunities to reduce cost or “stop doing” something that is no longer needed
- Supervisor Led Committee to review submissions

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Inventory Control

• Program initiated in June 2019
• Objective = reduce inventory without impacting plant operations
• Collaboration with Supply Chain
• Communication plan to the site
Achieving the Target

- Columbia continues to demonstrate a strong cost-improvement culture
- New targets are evaluated annually
Questions