

# Integrated Program Review

## *Transmission*

June 19, 2014  
1:30-3:30 pm

## Transmission Overview

Transmission Services' 2014 IPR revenue requirement seeks to implement a strategic framework, built upon a foundation of technological innovation and regulatory compliance, that delivers market-based products and solutions for Northwest customers balancing the following strategic challenges:

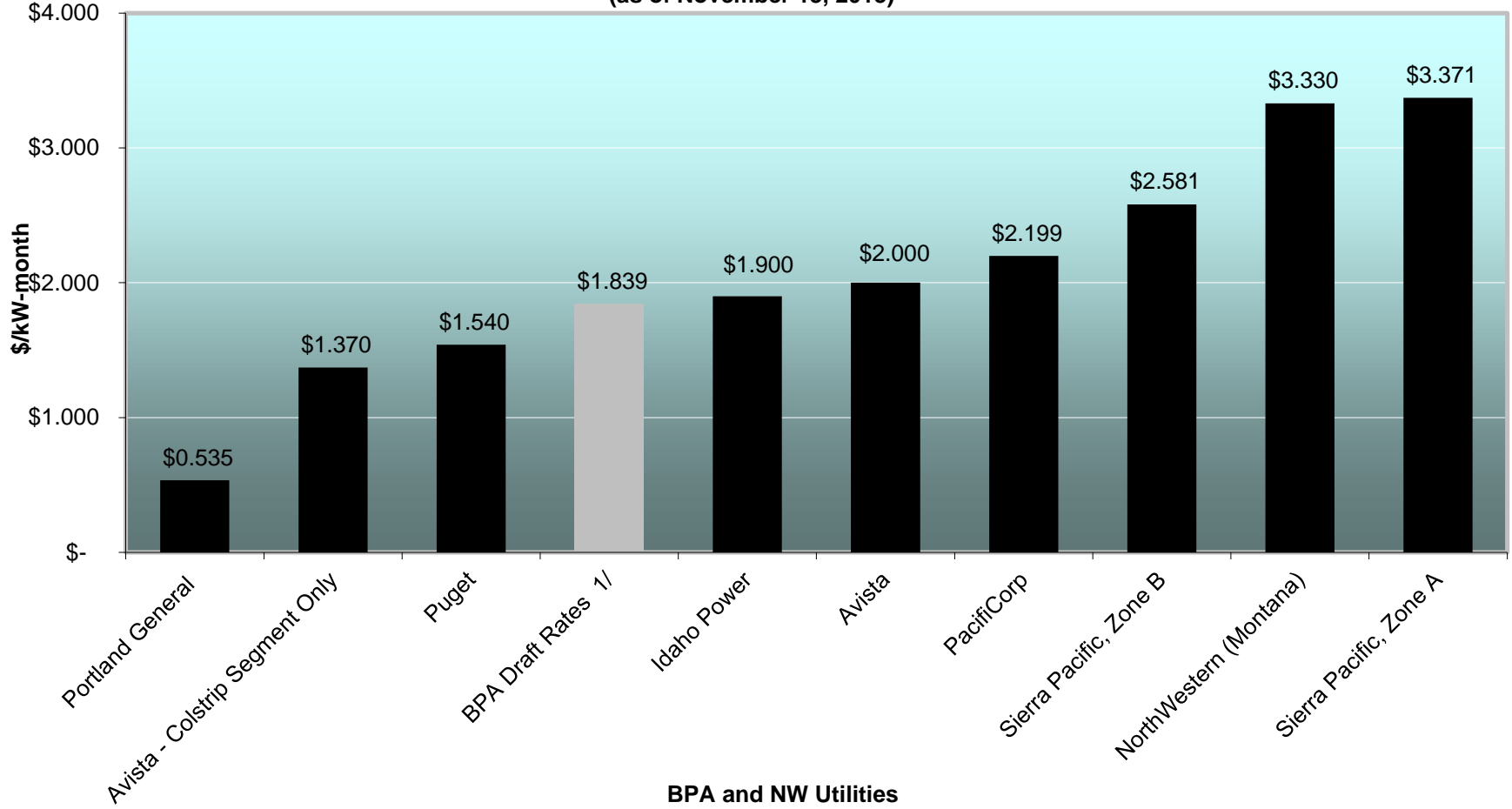
- Maintaining and improving the reliability and capacity of an FCRTS with an average component age approaching 50 years;
- Needing resources to keep pace with evolving mandatory compliance reliability standards and market transformation;
- Acquiring new (non-federal) sources of balancing energy required to integrate variable generation resources;
- Responding to customer and marketplace needs by exploring new ways to provide Transmission service, including new market constructs such as Energy Imbalance Market (EIM), intra-hour scheduling, and demand response; and
- Keeping rates at their lowest fiscally-responsible level while maintaining forward momentum on BPA and regional strategic priorities.

## Transmission's IPR Budget Development Process

- Transmission heard customer concerns about the impacts of a potential FY16-17 rate increase on the region
- To an unprecedented degree, the proposed FY16-17 budget incorporates risk to reduce the size of the proposed rate increase:
  - Undistributed reduction (projected under-spending of approved budget based on historical analysis): \$2.1 million impact
  - More aggressive Transmission revenue assumptions (based on historical under-forecasting): \$13 million impact
  - Eliminated budget for contingencies, including reserves for storms, transformer moves, and settlements: \$8 million impact
  - Use of Transmission reserves to offset proposed increase: \$20 million impact
- As a result of these and other measures, the proposed overall Transmission rate increase is 6.1%

## Transmission's Point-to-Point Long-Term and Ancillary Service Scheduling Control and Dispatch (SCD) Rate Regional Comparison

(as of November 13, 2013)



1/ BPA Draft Rates as of June 3, 2014

# Preliminary Transmission Rate Effect for FY 2016-17

| Expenses  | A   |                   | B   |                   | C   |                   | D   |                   | E  |  | F  |              |
|---|---|-------------------|---|-------------------|---|-------------------|---|-------------------|--|--|--|--------------|
|   | Change from BP-14 to Jan Initial IPR (FY 16/17) |                   | Change from BP-14 to Jan Initial IPR (FY 16/17) |                   | Change from BP-14 to 2014 Proposed IPR (FY 16/17) |                   | Change from BP-14 to 2014 Proposed IPR (FY 16/17) |                   | Change from Jan Initial IPR to 2014 Proposed IPR |  | Change from Jan Initial IPR to 2014 Proposed IPR |              |
|   | \$(Million)                                     | % Change in Rates | \$(Million)                                     | % Change in Rates | \$(Million)                                       | % Change in Rates | \$(Million)                                       | % Change in Rates | \$(Million)                                      |  |  |              |
| 1 Operations  | 1   | 0.1%              |   |                   | 11  | 1.0%              |   |                   | 10   |  |  |              |
| 2 Maintenance   | 6   | 0.5%              |   |                   | 7   | 0.6%              |   |                   | 1  |  |  |              |
| 3 Engineering   | 1   | 0.1%              |   |                   | 7   | 0.6%              |   |                   | 7  |  |  |              |
| 4 Internal Support & Undistributed Reduction              | 4   | 0.3%              |   |                   | 4   | 0.4%              |   |                   | 1  |  |  |              |
| <b>5 IPR Sub-total</b>                                    | <b>12</b>                                       | <b>1.0%</b>       |   |                   | <b>30</b>   | <b>2.6%</b>       |   |                   | <b>18</b>  |  |  |              |
| 6 Ancillary Services <sup>1/</sup>                        | 7   | 0.7%              |   |                   | 13  | 1.1%              |   |                   | 6  |  |  |              |
| 7 Use of Reserves for Rate Relief <sup>2/</sup>           | 20  | 1.8%              |   |                   | 20  | 1.7%              |   |                   | 0  |  |  |              |
| <b>8 Non-IPR Sub-total</b>                                | <b>27</b>                                       | <b>2.4%</b>       |   |                   | <b>33</b>   | <b>2.9%</b>       |   |                   | <b>6</b>   |  |  |              |
| <b>9 Capital Related Costs <sup>3/</sup></b>              | <b>82</b>                                       | <b>7.2%</b>       |   |                   | <b>24</b>   | <b>2.1%</b>       |   |                   | <b>-58</b>                                       |  |  |              |
| <b>10 IPR &amp; Non-IPR Change (Row 5+8+9)</b>            | <b>121</b>                                      | <b>10.6%</b>      |   |                   | <b>87</b>   | <b>7.6%</b>       |   |                   | <b>-34</b>                                       |  |  | <b>-3.0%</b> |
| <b>11 Revenues</b>  |   | <b>-0.3%</b>      |   |                   |   | <b>-1.5%</b>      |   |                   |  |  |  | <b>-1.2%</b> |
| <b>12 Total Change in Rates (Row 10+11) <sup>4/</sup></b> |   | <b>10.3%</b>      |   |                   |   | <b>6.1%</b>       |   |                   |  |  |  | <b>-4.2%</b> |

1/ The Ancillary Services forecast has been modified to reflect levels filed in the Errata to BP-14 Final Proposal.

2/ Use of reserves in BP-14 included \$20 million/yr for rate mitigation.

3/ Includes Net Interest Expense, Depreciation/Amortization and Minimum Required Net Revenues.

4/ Change in rates reflects average across all segments.

## Non-IPR Related Costs

- **Non-IPR Related Costs:** 12% of potential Transmission Revenue Requirement
- **Ancillary Services:**
  - Between Business Line Ancillary Services difference is approximately \$13M.
    - \$7M is due to forecast that was modified to reflect levels filed in the errata to BP-14 Final Proposal.
    - \$6M is due to the Avista Parallel Capacity Agreement and Non Federal Acquisitions.
- **Reserves:**
  - Use of reserves in BP-14 included \$20M per year.

# Transmission Capital Related Costs

**PRELIMINARY TRANSMISSION CAPITAL RELATED COSTS - 2014 PROPOSED IPR AND 2014 CIR and Callable Lease Financing Scenario**

| (\$ thousands)                                       | 2016-17 Average |                   | Change from BP-14 | Change from 2014 GM Mtg |
|--|-----------------|-------------------|-------------------|-------------------------|
|  | General Mng Mtg | 2014 Proposed IPR |                   |                         |
| <b>1 DEPRECIATION &amp; AMORTIZATION</b>             | <b>232,775</b>  | <b>241,984</b>    | <b>44,681</b>     | <b>9,210</b>            |
|  | -               | -                 |                   |                         |
| <b>INTEREST EXPENSE</b>                              |                 |                   |                   |                         |
| 2 FEDERAL APPROPRIATIONS                             | 4,891           | 12,084            | (2,314)           | 7,193                   |
| 3 CAPITALIZATION ADJUSTMENT                          | (18,968)        | (18,968)          | 0                 | -                       |
| 4 ON LONG-TERM DEBT                                  | 140,336         | 135,818           | 13,372            | (4,518)                 |
| 5 AMORTIZATION OF CAPITALIZED BOND PREMIUMS          | 561             | 561               | 0                 | -                       |
| 6 DEBT SERVICE REASSIGNMENT INTEREST                 | 27,251          | 27,251            | (13,308)          | -                       |
| 7 NON-FEDERAL INTEREST (INCLUDES COI & LGIA)         | 106,036         | 49,597            | 7,210             | (56,438)                |
| 8 PREMIUMS/(DISCOUNTS)                               | -               | (1)               | (1)               | (1)                     |
| 9 AFUDC  | (31,185)        | (19,467)          | 18,389            | 11,717                  |
| 10 INTEREST INCOME                                   | (12,531)        | (14,332)          | (2,671)           | (1,801)                 |
| <b>11 NET INTEREST EXPENSE (SUM LINES 2-10)</b>      | <b>216,392</b>  | <b>172,544</b>    | <b>20,676</b>     | <b>(43,849)</b>         |
|  | -               | -                 |                   |                         |
| <b>12 MINIMUM REQUIRED NET REVENUE</b>               | <b>121,513</b>  | <b>97,529</b>     | <b>(41,268)</b>   | <b>(23,985)</b>         |
|  | -               | -                 |                   |                         |
| <b>13 TOTAL CAPITAL RELATED COST (LINES 1+11+12)</b> | <b>570,680</b>  | <b>512,056</b>    | <b>24,090</b>     | <b>(58,624)</b>         |

- Transmission capital related costs were addressed at the June 17<sup>th</sup> Debt Management workshop.
- Line 7 reflects a decrease in Non-Federal interest. As a result, Line 4 increases by a similar amount offset by savings from debt management action.

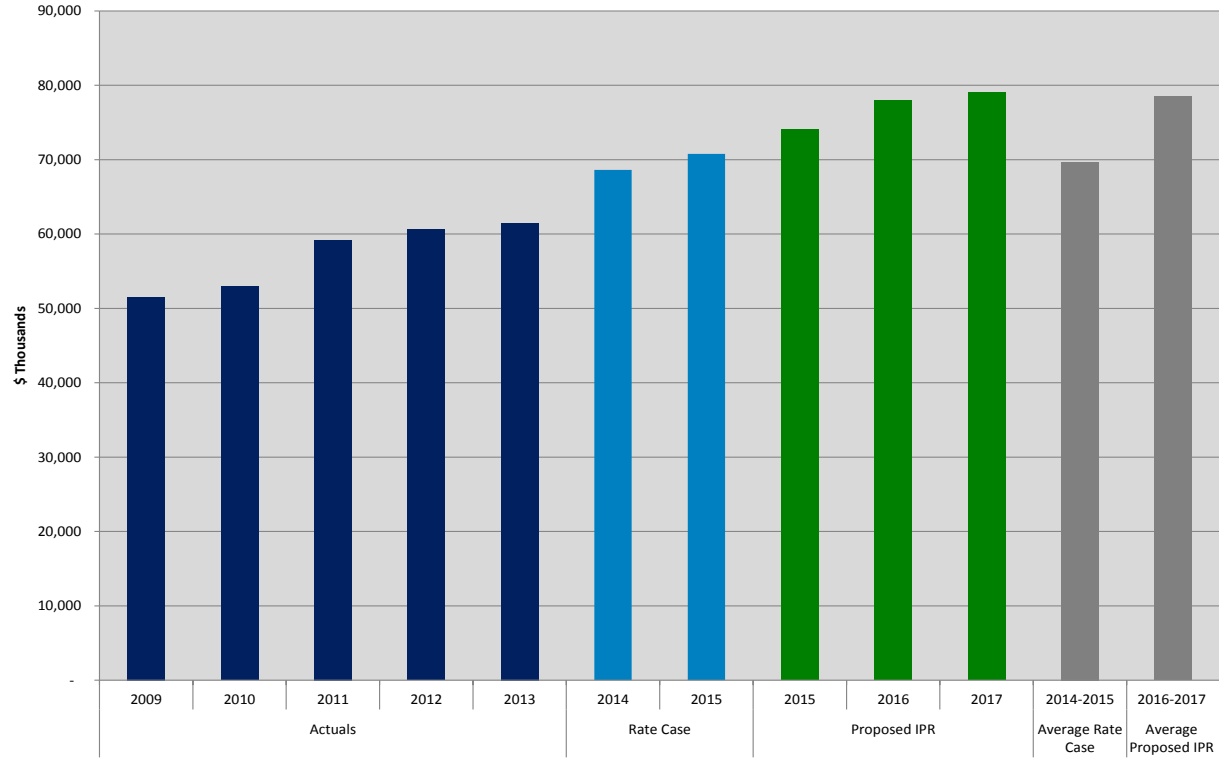
## Changes to Revenue Forecast from GM Meeting

- Since 2010, there has been an average of 577MW under forecast compared to Rate Case, mainly in the Point-To-Point (PTP) sales.
  - Transmission Services has increased the forecast by approximately 600 MW more than originally forecasted, reflecting historical variances.
- There is volatility in the short-term sales which make up approximately 3% of Transmission revenues. Volatility can swing by 50%.
- Average water and historical prices were used for the rate case.
- Forecast has not accounted for impending market changes.



# Operations: System Operations

FY2016-17 Average: Proposed IPR



| (\$ Thousands)                     | Proposed IPR  |               | Average: Rate Case | Average: Proposed IPR | Delta: Avg. Rate Case vs. Avg. Proposed IPR |
|------------------------------------|---------------|---------------|--------------------|-----------------------|---|
|                                    | 2016          | 2017          | 2014-2015          | 2016-2017             |   |
| Information Technology             | 10,377        | 10,558        | 7,492              | 10,468                | 2,976                                       |
| Power System Dispatching           | 13,536        | 13,671        | 13,856             | 13,603                | (252)                                       |
| Control Center Support             | 18,572        | 18,757        | 18,930             | 18,665                | (265)                                       |
| Technical Operations               | 14,094        | 14,195        | 6,860              | 14,145                | 7,285                                       |
| Substation Operations              | 21,399        | 21,817        | 22,561             | 21,608                | (953)                                       |
| <b>System Operations Sub-Total</b> | <b>77,977</b> | <b>78,999</b> | <b>69,698</b>      | <b>78,488</b>         | <b>8,790</b>                                |

## System Operations

### *Significant Cost Increases/Decreases*

**Program Budget: FY16/17 Average: \$78.5M**

- 13% or \$9M increase from FY14/15 Rate Case
- **Information Technology \$3M**
  - Dedicated Transmission IT and non-grid operations projects.
- **Technical Operations \$7M**
  - Corporate Strategic Integration allocation includes the new EIM-related costs of Transmission's share of Northwest Power Pool (NWPP).
- **Substation Operations -\$1M**
  - -\$1.5M Reduction in storm contingency

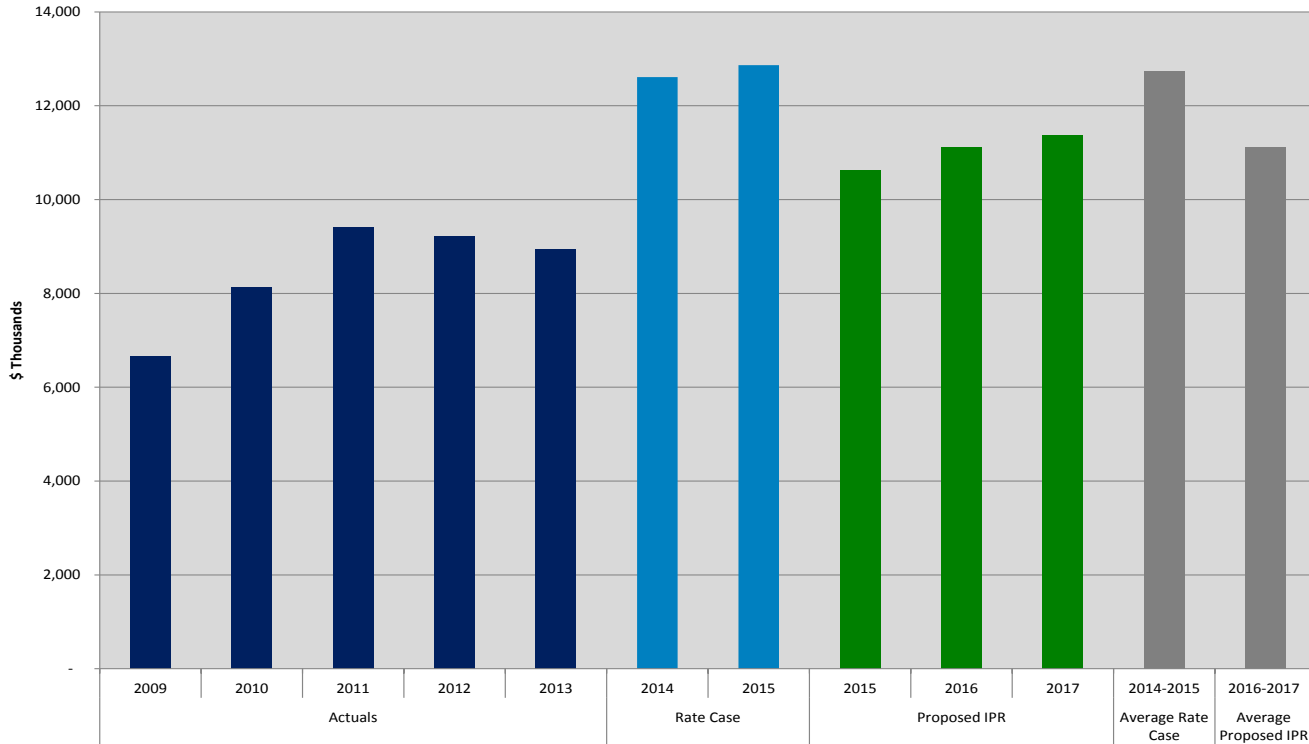
# System Operations

## *Changes since BP-14*

- Changes to processes, systems and tools used to support reliability
  - Implementation of actions in response to September 8<sup>th</sup> Black-out recommendations
  - Management of Grid Operations communication infrastructure - Network Operations Center (NOC), the Security Operations Center (SOC), and Optical Multi-Gigabit Ethernet Transport (OMET)
- Support for regional and agency initiatives
- Evolving and enhanced visualization, situational awareness, and congestion management tools
- Increasing costs for software licenses to support control center automation

# Operations: Scheduling

FY 2016-17 Average: Proposed IPR



| (\$ Thousands)              | Proposed IPR  |               | Average: Rate Case | Average: Proposed IPR | Delta: Avg. Rate Case vs. Avg. Proposed IPR |
|-----------------------------|---------------|---------------|--------------------|-----------------------|---|
|                             | 2016          | 2017          | 2014-2015          | 2016-2017             |   |
| Reservations                | 1,362         | 1,383         | 5,756              | 1,373                 | (4,384)                                     |
| Pre-Scheduling              | 268           | 276           | 249                | 272                   | 23  |
| Real-Time Scheduling        | 5,038         | 5,169         | 5,486              | 5,104                 | (383)                                       |
| Technical Support           | 4,161         | 4,259         | 1,019              | 4,210                 | 3,191                                       |
| After-the-Fact Scheduling   | 281           | 289           | 227                | 285                   | 58  |
| <b>Scheduling Sub-Total</b> | <b>11,110</b> | <b>11,376</b> | <b>12,738</b>      | <b>11,243</b>         | <b>(1,495)</b>                              |

## Scheduling

### *Significant Cost Increases/Decreases*

**Program Budget: FY16/17 Average: \$11M**

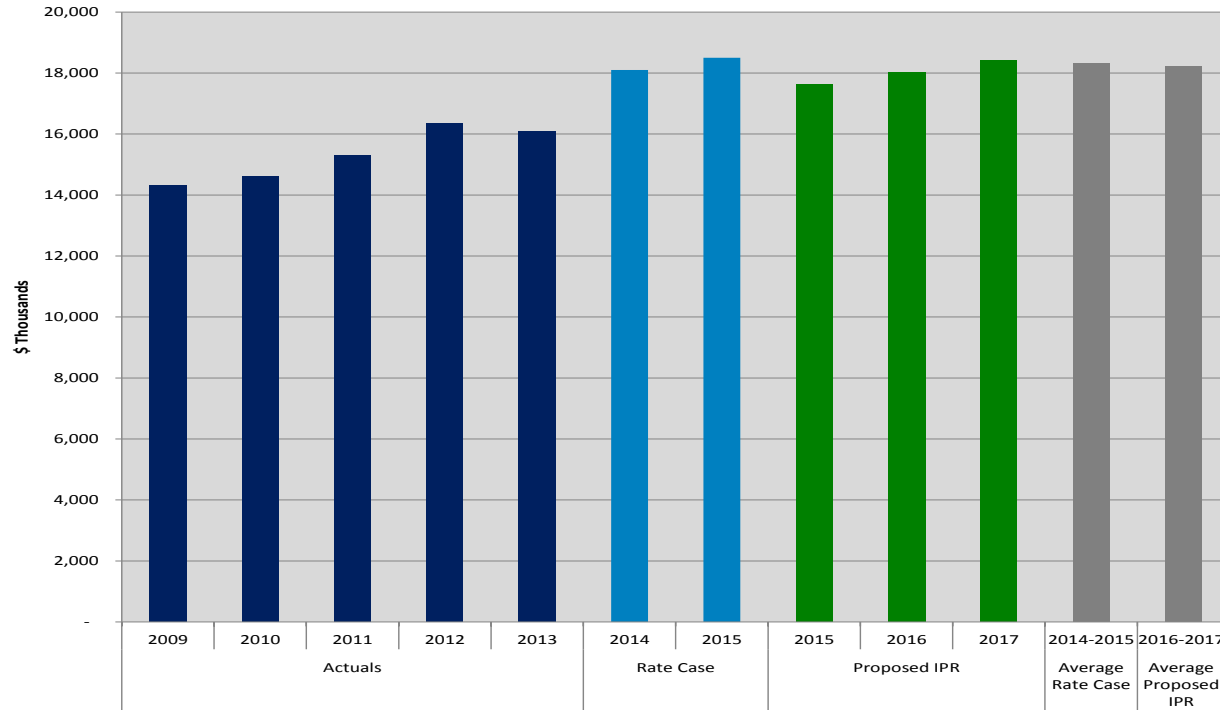
- \$1.5M decrease from FY14/15 Rate Case
- **Technical Support: \$3.2M, Reservations: -\$4.4M**
  - Increase in Scheduling Technical Support program, offset by a decrease in the Scheduling Reservation program.

### **Changes from BP-14**

- Implement Network Integration Transmission Service (NITS)- North American Energy Standards Board (NAESB) that meets the Tariff and NT customer needs
- Run the cyclical Network Open Season (NOS) and Generation Integration (GI) models and work to integrate with other regional planning processes
- Multiple FERC, NERC, WECC initiatives that impact the way BPA currently does business

# Operations: Marketing

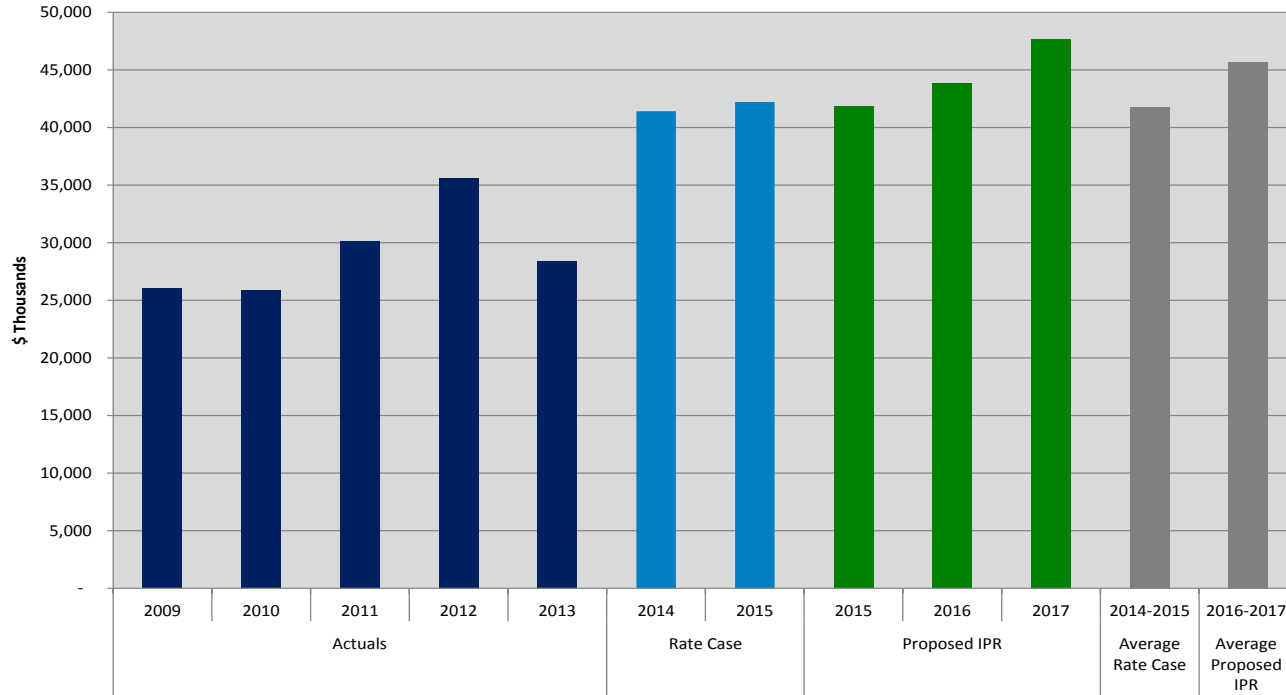
FY 2016-17 Average: Proposed IPR



| (\$ Thousands)                   | Proposed IPR  |               | Average: Rate Case | Average: Proposed IPR | Delta: Avg. Rate Case vs. Avg. Proposed IPR |
|----------------------------------|---------------|---------------|--------------------|-----------------------|---|
|                                  | 2016          | 2017          | 2014-2015          | 2016-2017             |   |
| Transmission Sales               | 2,700         | 2,775         | 3,028              | 2,737                 | (291)                                       |
| Contract Management              | 4,862         | 4,984         | 5,348              | 4,923                 | (425)                                       |
| Transmission Billing             | 3,301         | 3,377         | 2,894              | 3,339                 | 445   |
| Business Strategy and Assessment | 7,171         | 7,291         | 7,029              | 7,231                 | 201   |
| <b>Marketing Sub-Total</b>       | <b>18,033</b> | <b>18,426</b> | <b>18,300</b>      | <b>18,229</b>         | <b>(70)</b>                                 |

# Operations: Business Support

FY 2016-17 Average: Proposed IPR



| (\$ Thousands)                        | Proposed IPR  |               | Average: Rate Case | Average: Proposed IPR | Delta: Avg. Rate Case vs. Avg. Proposed IPR |
|---------------------------------------|---------------|---------------|--------------------|-----------------------|---|
|                                       | 2016          | 2017          | 2014-2015          | 2016-2017             |   |
| Executive and Administrative Services | 20,235        | 23,540        | 13,940             | 21,888                | 7,948                                       |
| Legal Support                         | 3,331         | 3,548         | 3,914              | 3,440                 | (474)                                       |
| General Administrative                | 12,961        | 13,135        | 15,884             | 13,048                | (2,836)                                     |
| Aircraft Services                     | 2,205         | 2,230         | 2,162              | 2,217                 | 55  |
| Logistics Services                    | 4,325         | 4,488         | 4,980              | 4,407                 | (574)                                       |
| Security Enhancements                 | 754           | 716           | 922                | 735                   | (187)                                       |
| <b>Business Support Sub-Total</b>     | <b>43,811</b> | <b>47,657</b> | <b>41,802</b>      | <b>45,734</b>         | <b>3,933</b>                                |

# Operations: Business Support

## *Significant Cost Increases/Decreases*

**Program Budget: FY16/17 Average: \$45.7M**

- **9% or \$3.9M** increase from FY14/15 Rate Case
  
- **Executive & Admin Services: \$8M**
  - BPA's cost for shared projects: \$6M
    - Puget Sound Area and Northern Intertie (PSANI)
    - North Mid-Columbia (Mid-C)
  - Demand Response Project: \$2M
  
- **General Administrative: -\$4M**
  - Decrease in program offset with increases in other Transmission programs to align with priority work.

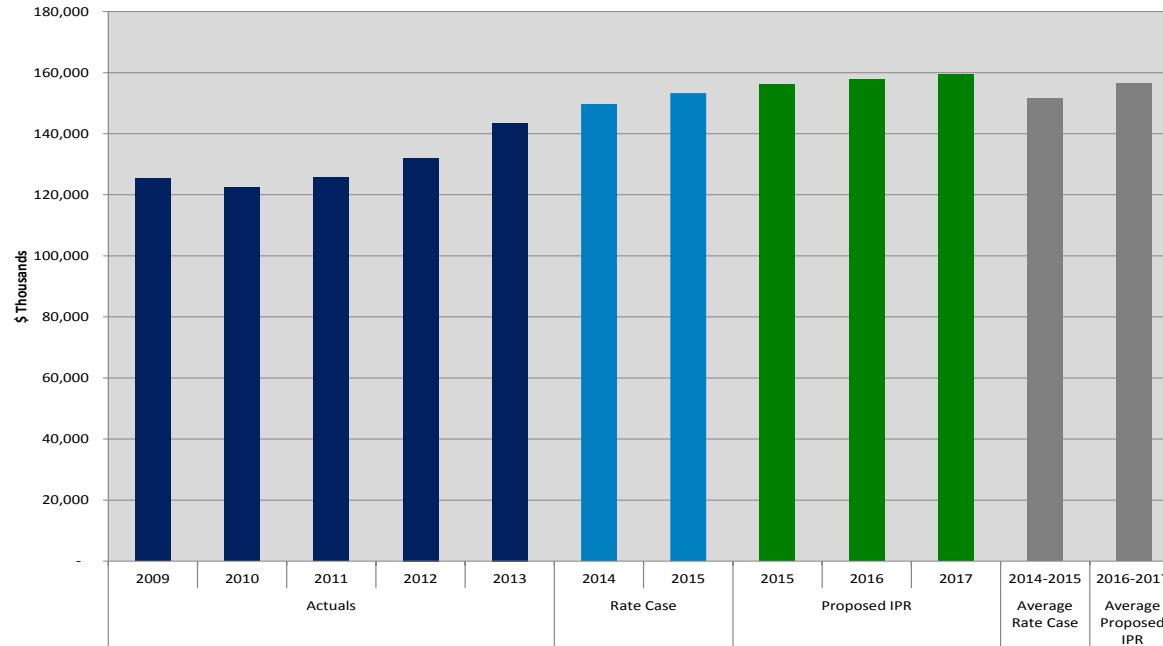
### **Unfunded:**

- \$600k – Student Program Tuition/books/travel
- \$600k – Transmission Strategy Support



# Maintenance

FY 2016-17 Average: Proposed IPR



| (\$ Thousands)                      | Proposed IPR   |                | Average: Rate Case<br>2014-2015 | Average:<br>Proposed IPR<br>2016-2017 | Delta: Avg. Rate<br>Case vs. Avg.<br>Proposed IPR |
|-------------------------------------|----------------|----------------|---------------------------------|---------------------------------------|---|
|                                     | 2016           | 2017           |                                 |                                       |   |
| Non-Electric Maintenance            | 30,750         | 31,424         | 27,578                          | 31,087                                | 3,509   |
| Substation Maintenance              | 28,566         | 29,043         | 31,449                          | 28,804                                | (2,645)   |
| Transmission Line Maintenance       | 27,054         | 27,482         | 26,480                          | 27,268                                | 789   |
| System Protection Controls          | 13,541         | 13,741         | 13,238                          | 13,641                                | 403   |
| Power System Maintenance            | 18,239         | 18,507         | 17,243                          | 18,373                                | 1,130   |
| Joint Cost Maintenance              | 111            | 113            | 1                               | 112                                   | 111   |
| System Maintenance Management       | 9,954          | 9,556          | 6,504                           | 9,755                                 | 3,251   |
| ROW Maintenance                     | 10,098         | 10,162         | 8,513                           | 10,130                                | 1,617   |
| Heavy Mobile Equipment Maintenance  | (0)            | (0)            | 0                               | (0)                                   | (0)   |
| Technical Training                  | 2,368          | 2,418          | 3,235                           | 2,393                                 | (842)   |
| Vegetation Management               | 17,181         | 17,039         | 17,303                          | 17,110                                | (193)   |
| <b>System Maintenance Sub-Total</b> | <b>157,862</b> | <b>159,485</b> | <b>151,543</b>                  | <b>158,673</b>                        | <b>7,130</b>                                      |

# Maintenance

## *Significant Cost Increases/Decreases*

**Program Budget:** FY16/17 Average: **\$159M** (excluding Pollution Prevention & Abatement)

- 5% or \$7M increase from FY14/15 Rate Case
- **Non-Electric Maintenance: \$4M**
  - Reprioritization to cover expense work, such as Munro Control Center and stormwater fees.
- **Line Maintenance Program: \$1M**
  - Developing and implementing a sustainable replacement strategy
- **Power System Maintenance: \$1M**
  - Includes \$300k/yr additional funding for 5 BFTE engineers
  - \$800k/yr additional funding for Power System Controls (PSC) initiatives to alleviate backlog and other priority work

## Maintenance

### *Significant Cost Increases/Decreases (cont.)*

#### Increases (Cont.)

- **System Maintenance Management: \$3M**
  - \$1M for Asset Data Management (ADM)
  - \$2M for Asset Register
- **ROW Maintenance: \$2M**
  - Additional funding for access roads

#### Decreases

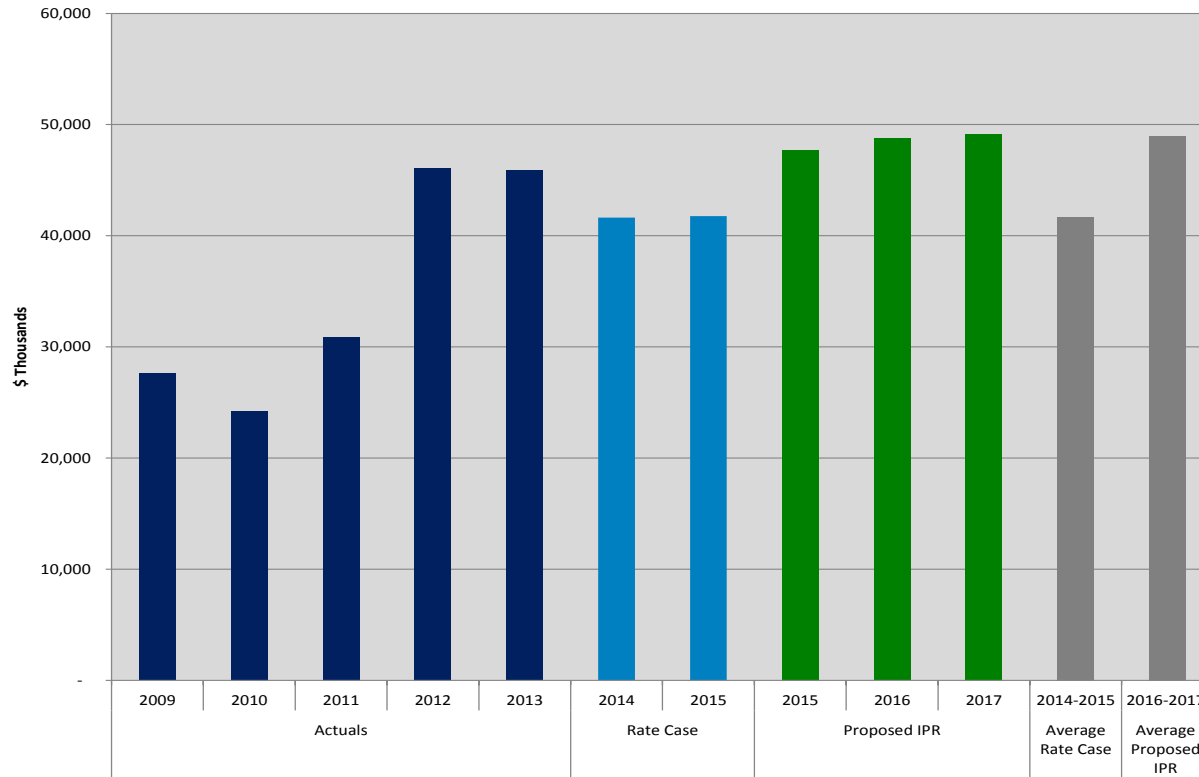
- \$5M reduction in storms contingency and transformer moves

#### Unfunded

- \$2M – \$1M of the \$3M initial request for additional funds for access roads was funded.
- \$1.7M – expense Sustain Program initiatives.

# Engineering

FY 2016-17 Average: Proposed IPR



| (\$ Thousands)                      | Proposed IPR  |               | Average: Rate Case | Average: Proposed IPR | Delta: Avg. Rate Case vs. Avg. Proposed IPR |
|-------------------------------------|---------------|---------------|--------------------|-----------------------|---|
|                                     | 2016          | 2017          | 2014-2015          | 2016-2017             |   |
| Research and Development            | 9,522         | 9,555         | 7,861              | 9,538                 | 1,677                                       |
| TSD Planning and Analysis           | 16,486        | 16,738        | 13,651             | 16,612                | 2,961                                       |
| Capital to Expense Transfers        | 4,307         | 4,351         | 4,163              | 4,329                 | 166   |
| NERC/WECC Compliance                | 14,636        | 14,654        | 12,288             | 14,645                | 2,357                                       |
| Environmental Planning and Analysis | 1,599         | 1,642         | 1,178              | 1,621                 | 443   |
| Engineering Line Rating             | 2,195         | 2,207         | 2,564              | 2,201                 | -363  |
| <b>Grand Total</b>                  | <b>48,746</b> | <b>49,147</b> | <b>41,704</b>      | <b>48,946</b>         | <b>7,243</b>                                |

## Engineering

### *Significant Cost Increases/Decreases*

**Program Budget: FY16/17 Average: \$49M**

- 17% or \$7M increase from FY14/15 Rate Case
- **Research & Development: \$2M**
  - Budget established at 0.5% of gross forecasted revenues
- **Transmission System Development (TSD) Planning and Analysis: \$3M**
  - Move funds to accurately reflect on-going work.
  - Increased resource costs to manage the expense component of capital-related projects, offset by decreasing other Transmission programs.
- **NERC/WECC Program: \$2M**
  - Increased resource costs in Transmission organizations for compliance related activities.

### **Unfunded**

- \$2M/yr WECC/Peak costs

## IPR Questions Submitted

- Q: How much money is included in the Transmission Services IPR budget proposal for work related to the CAISO-PAC Energy Imbalance Market (CAISO-PAC EIM) ?
- Q: How much of the increase in IPR costs is compliance-related?
- Q: What are the reasons for the increase in the proposed spending in 2015, compared to the 2015 Rate Case, for the Maintenance, Engineering and Business Support programs?

# Financial Disclosure

## *Financial Disclosure*

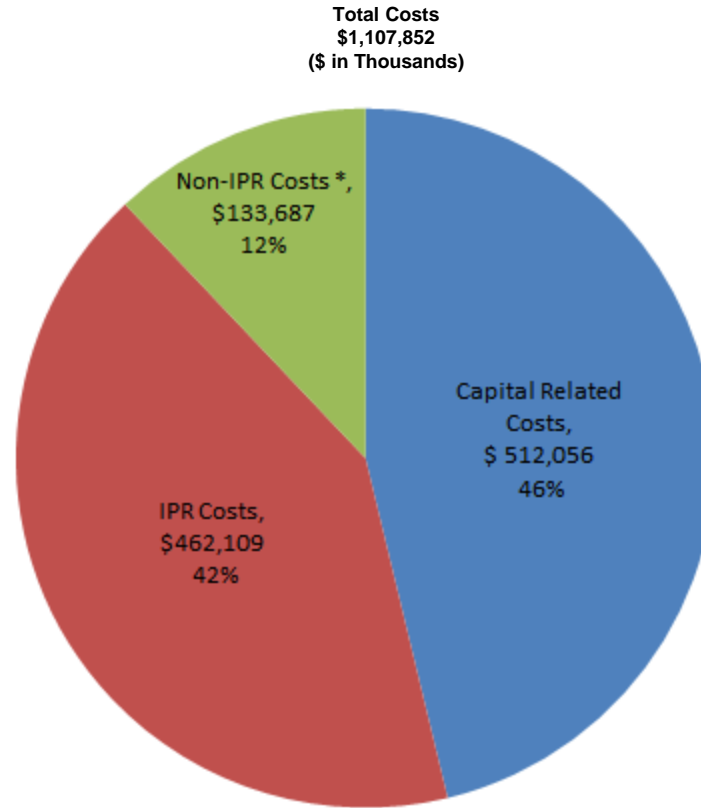
This information has been made publicly available by BPA on June 13, 2014 and contains information not reported in agency financial statements.

# Appendix



# Transmission

## Potential Transmission Revenue Requirement



\*Non-IPR Cost include Between Business Line Acquisition and Ancillary Services Costs