

2010 BPA Rate Case

TR-10 Transmission & Ancillary Services

Customer Workshop

October 8, 2008



Agenda

- 9:00 – 9:10 Opening and Key Messages
- 9:10 – 9:20 Protocols for Weekly Technical 2010 BPA Rate Case Conference Calls (previously known as WIT Technical Calls)
- 9:20 – 9:45 Load Forecast
- 9:45 – 10:45 Revenue Comparison of Forecast to Actuals for FY08
- 10:45 – Noon Segmented Revenue Requirement
- Noon – 1:00 Lunch Break
- 1:00 – 1:30 Risk Analysis
- 1:30 – 2:30 Wind Integration: With-in Hour Balancing Service
- 2:30 – 3:00 Next Steps



Key Messages

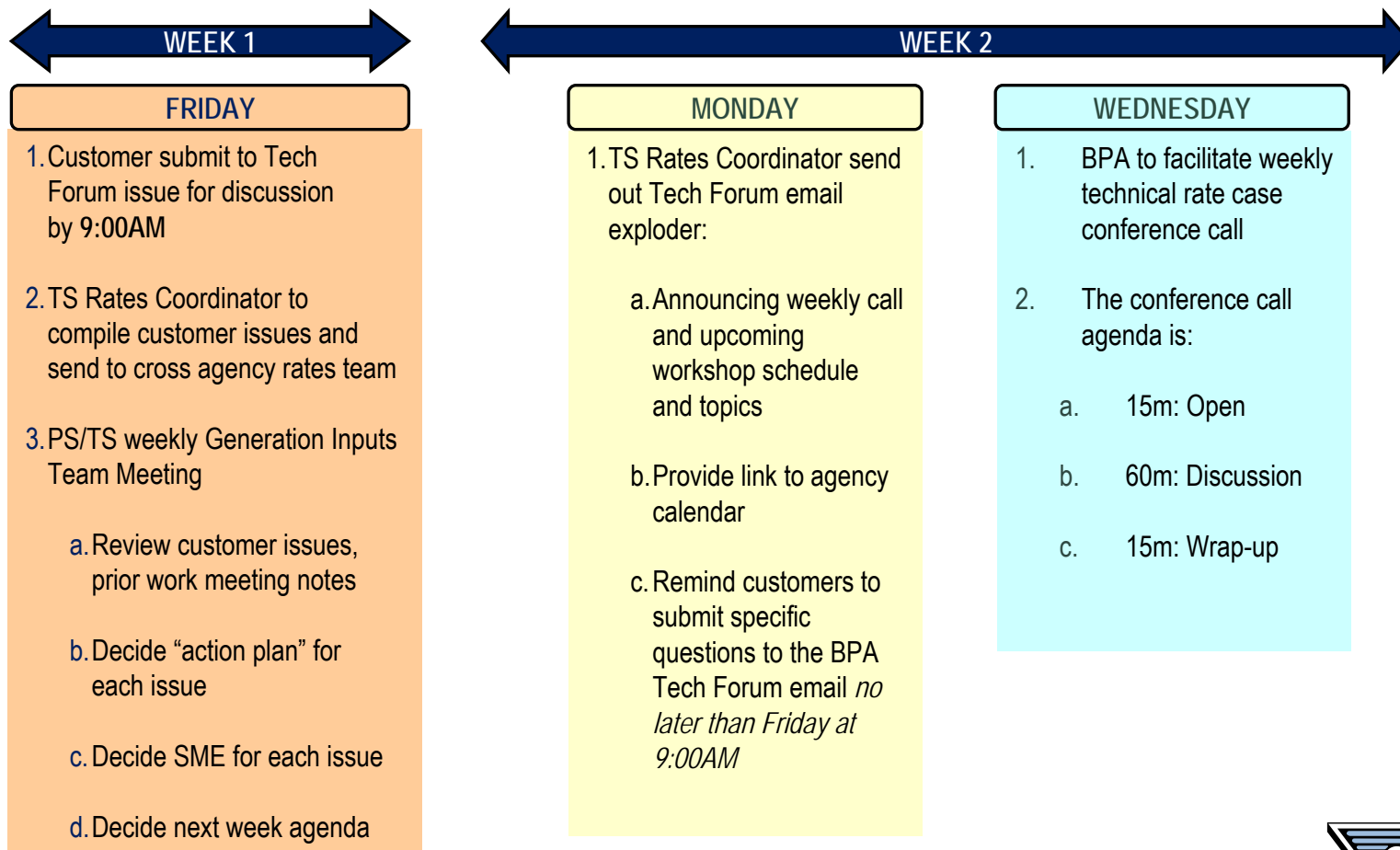
- The material we are sharing today is very much a work in progress and intended to provide a preliminary look at transmission rate levels and key variables and assumptions.
- We are very open to input and willing to make changes based on that input if warranted.
- In the spirit of openness, we are proposing to establish protocols for the weekly technical conference calls surrounding wind integration.



Protocols for Weekly **Wednesday** Rate Case Technical Conference Calls

- Each Friday, customers will send issues to TechForum@bpa.gov. This will provide BPA the time needed to reserve the appropriate subject matter expert to field questions raised.
- Each Monday, Transmission Services will send out a Tech Forum notice exploder announcing weekly conference call and agenda topics for wind integration.
- BPA will populate the weekly agendas with topics, facilitate the meetings, and ensure subject matter experts are available. Keep in mind that, due to limited staff availability, some customer questions may not be addressed right away or may be directed to another forum (e.g., Transmission Service's Customer Forum). Additionally, BPA reserves the right to cancel the weekly technical rate case conference call at any time including situations where staff is unavailable, lack of topics, or workshop dates/times conflict customers will receive advance notice of the meeting cancellation.
- We appreciate your cooperation and involvement with this process and for your consideration of the limited time and staff available to prepare for the initial proposal. To this end, we will need to draw a close to the weekly technical rate case calls in early November. Going forward, continued discussions with the cross-agency Wind Integration Team will need to be coordinated through Eric King, WIT Project Manager, at (503) 230-5236 or evking@bpa.gov.
- We welcome working together to improve coordination and inform a better end-product for the 2010 BPA Rate Case.

Protocols for Weekly **Wednesday** Rate Case Technical Conference Calls con't



Load Forecasting



Load Forecasting Changes and Goals

- Marketing and Sales EPIP established a single organization to forecast loads for the Agency in 2007
 - Customer Services Load Forecasting group established (KSL)
 - Same forecast and assumptions are used Agency wide
 - Drive to establish consistencies for all load planning processes
 - in accuracy levels
 - in methods
 - in assumptions
 - Providing efficiencies to the forecasting and planning process
 - Goal is seamless integration of planning values from next day to the next twenty years forecasted accurately.



Load Forecasting Process

- KSL Forecasting process:
 - Forecasts developed using the Agency Load Forecasting tool (ALF)
 - Bottom up approach where each customer is individually forecasted
 - Statistical based models using 10 or more years of historical data
 - Known changes identified through customer visits
 - Known changes are for specific off trend customer growth, such as
 - New large industrial or commercial loads
 - New large subdivision additions
 - Final forecast reviewed by Customer, AE, and other interested parties
 - Numerous elements (ie. kWh, customer peak, generation system peak, transmission system peak, control area peak) are forecasted from the same assumptions
 - Different elements of the same forecast are shared with Power and Transmission
 - Updates are prepared annually and are refined on a quarterly basis if necessary
 - General economic assumptions obtained from Global Insight.



Load Forecasting Assumptions

- Load Forecasting Assumptions:
 - Normal weather conditions exist (30 year average value)
 - Continuation of historical trends with known changes
 - Known changes identified through customer visits
 - For example known changes are for increases in:
 - Ethanol production
 - Medical facilities
 - Dairy production facilities
 - Average total retail load growth rate (in MWh) is expected to be approximately 2.3% per year compared to an average load growth of 3.1% historically from 2000 to 2007
 - Slowing economy expected but no economic recession included in the assumptions



Revenues



Comparison of FY 2008 to 08 Rate Case

| | | (A) | (B) | (C) | (D) | (E) | (F) | (G) |
|---|---|--|-----------------------------|--|---------------------------------|---|---------------|-----|
| RATE CASE FY10-11 INITIAL REVENUE FORECAST | | | | | | | | |
| PRODUCT GROUP | PRODUCT CATEGORY | FY 2008 RC_FINAL08 | FY 2008 3RD QTR FORECAST | FY 2008 3RD QTR FORECAST (Oct-Aug) | FY 2008 ACTUALS (Oct-Aug) | Variance 3RD QTR FY 2008 Forecast to Actuals (Oct- Aug) | | |
| 1 | Network | Formula Power Transmission | 29,134 | 30,300 | 27,803 | 27,831 | 28 | |
| 2 | | Integration of Resources | 72,385 | 72,626 | 66,595 | 66,563 | (32) | |
| 3 | | Network Integration | 116,856 | 121,606 | 112,845 | 113,030 | 185 | |
| 4 | | Point-to-Point Long Term | 271,733 | 275,220 | 251,701 | 251,526 | (175) | |
| 5 | | Point-to-Point Short Term | 17,424 | 19,254 | 18,877 | 37,538 | 18,661 | |
| 6 | Network Total | | 507,533 | 519,005 | 477,821 | 496,488 | 18,667 | |
| 7 | Intertie | Montana Intertie Long Term | 252 | 252 | 231 | 231 | 0 | |
| 8 | | Southern Intertie Long Term | 83,856 | 84,442 | 77,663 | 78,002 | 339 | |
| 9 | | Southern Intertie Short Term | 4,504 | 3,898 | 3,846 | 5,213 | 1,367 | |
| 10 | Intertie Total | | 88,612 | 88,592 | 81,740 | 83,445 | 1,705 | |
| 11 | Ancillary Services | Energy & Generation Imbalance | 0 | 1,348 | 1,348 | 5,756 | 4,408 | |
| 12 | | Operating Reserves - Spin & Supp | 26,397 | 34,742 | 32,289 | 34,674 | 2,385 | |
| 13 | | Reactive Supply & Voltage from Gen | 0 | 214 | 483 | 362 | (120) | |
| 14 | | Regulation & Frequency Response | 14,582 | 17,425 | 16,143 | 15,977 | (166) | |
| 15 | | Scheduling, System Control & Dispatch | 73,382 | 75,150 | 69,219 | 71,922 | 2,703 | |
| 16 | | Within-Hour Balancing for Resources | 0 | 0 | 0 | 0 | 0 | |
| 17 | Ancillary Services Total | | 114,360 | 128,878 | 119,482 | 128,692 | 9,210 | |
| 18 | Delivery | DSI Delivery | 1,804 | 1,762 | 1,615 | 1,603 | (12) | |
| 19 | | Utility Delivery Charges- Delivery | 1,970 | 2,808 | 2,574 | 2,432 | (142) | |
| 20 | Delivery Total | | 3,773 | 4,570 | 4,189 | 4,035 | (154) | |
| 21 | Fiber & PCS | Fiber- Other Revenue | 8,160 | 7,338 | 6,544 | 6,558 | 14 | |
| 22 | | Fiber-Other Reimbursable Revenue | 1,048 | 1,504 | 1,202 | 672 | (530) | |
| 23 | | Wireless/PCS- Other Revenue | 650 | 4,564 | 4,386 | 4,362 | (23) | |
| 24 | | Wireless/PCS- Reimbursable Revenue | 3,738 | 421 | 421 | 129 | (292) | |
| 25 | Fiber & PCS Total | | 13,596 | 13,826 | 12,553 | 11,721 | (832) | |
| 26 | Other Revenues & Credits | AC-PNW PSW Intertie | 1,400 | 1,514 | 1,377 | 1,297 | (80) | |
| 27 | | COE/BOR Project Revenue | 954 | 954 | 875 | 875 | 0 | |
| 28 | | Gen-Integration-Other Revenue Source | 6,813 | 6,813 | 6,245 | 6,245 | 0 | |
| 29 | | Land Leases and Sales | 0 | 300 | 288 | 329 | 41 | |
| 30 | | NFP-Depr PNW PSW Intertie | 3,065 | 3,065 | 2,810 | 2,810 | (0) | |
| 31 | | Operations & Maintenance | 957 | 980 | 900 | 876 | (24) | |
| 32 | | Other Leases/Misc Revenue Sources | 0 | 150 | 123 | 109 | (14) | |
| 33 | | Other- Other Revenue Sources | 2,000 | 55 | 55 | 55 | 0 | |
| 34 | | Power Factor Penalty | 4,570 | 4,549 | 4,205 | 4,061 | (143) | |
| 35 | | Remedial Action Scheme | 51 | 51 | 47 | 47 | 0 | |
| 36 | | Reservation Fee- Other Revenue Sources | 529 | 1,809 | 1,809 | 2,199 | 389 | |
| 37 | | Srvcs/FPS Loss/Int Exch/Arcrft | 0 | 22 | 22 | 700 | 679 | |
| 38 | | Townsend-Garrison Transmission | 9,796 | 9,796 | 8,980 | 8,980 | 0 | |
| 39 | | Transmissions Share of Irrigation PP | 192 | 382 | 352 | 360 | 8 | |
| 40 | | UNAUTH INCREASE- Other Revenue Sources | 0 | 28 | 28 | (498) | (526) | |
| 41 | | Use of Facilities (UFT) | 7,500 | 5,346 | 4,903 | 4,898 | (4) | |
| 42 | Other Revenues & Credits Total | | 37,828 | 35,817 | 33,018 | 33,344 | 326 | |
| 43 | TOTAL REVENUE BEFORE REIMBURSABLE | | 765,703 | 790,689 | 728,803 | 757,725 | 28,922 | |



Drivers for the Changes of FY 2008 3rd Qtr Forecast to Rate Case

- The total FY08 Rate Case Revenues were \$765.7 million. The total FY08 3rd Qtr Forecast revenues were \$790.6 million. The variance between the two was \$24.9 million.
- The major drivers of the variance between 3rd Qtr Forecast and Rate Case was due to Ancillary Services of \$14.5 million and Network revenues of \$11.4 million.
 - Ancillary Services increased \$14.5 million for 3rd Qtr FY 08 compared to 08 Rate Case for FY08. The major drivers for the increase was the following:
 - Operating Reserves increase was \$8.3 million due to more parties self supplying than forecasted in the rate case.
 - Regulation and Frequency Response increase was \$2.8 million due to higher than forecasted loads in the rate case.



Drivers for the Changes of FY 2008 3rd Qtr Forecast to Rate Case

- Network sales increased \$11.4 million for FY 08 3rd Qtr Forecast compared to FY08 Rate Case. The major drivers for the increase were due to the following:
 - PTP long-term sales increased by \$4.7 million due to higher than expected sales.
 - Network Integration sales increased by \$3.5 million due to higher loads than originally forecasted in the rate case.



Comparison of FY 2008 3rd Qtr Forecast to Actuals

- The total 3rd Quarter Forecast from October to August was \$728.8 million. The total FY08 actuals from October to August was \$757.7 million. The variance between the two is \$28.9 million.
- The major drivers of the variance between FY08 3rd Qtr Forecast and Actuals were due to Network sales of \$18.7 million and Ancillary Services of \$9.2 million.
 - Network sales increased \$18.7million. The major driver for the increase was the increase in PTP short-term sales of \$18.6 million. The increase was driven by the May and June run-off that increased reservation requests for the months of May and June.



Comparison of FY 2008 3rd Qtr Forecast to Actuals

- Ancillary Services increased \$9.2 million. The major drivers for the increase were due to the following:
 - Energy and Generation Imbalance increased \$4.4 million primarily due to wind generation mismatches to schedules. Energy and Generation Imbalance is not forecasted.
 - Scheduling, System Control and Dispatch increased \$2.7 million due to increases in the PTP short-term sales.



Probability Changes to Revenues Assumptions during the Rate Period

- Update the Network Integration sales with the agency load forecast.
- Rollovers for PTP and Intertie
- PTP
 - Deferrals for PTP
 - Transmission service requests that are related to Large Generator Interconnection Agreements (LGIAs)
 - When executed service agreements will take service during the rate period
 - Network Open Season (NOS) requests that will be enabled and take service during the rate period
 - Conversion of IR and FPT contracts during the rate period
 - Conditional Firm that will be enabled during the rate period



Possible Changes to Net Revenues Assumptions during the Rate Period

- Expenses will be updated to match IPR close-out letter
- LGIA credits will updated for the MRNR calculation



Segmented Revenue Requirement



Segmented Revenue Requirement Assumptions

- Program spending levels are consistent with data presented in Integrated Program Review (IPR) workshops.
- Capital investments are consistent with the IPR workshops.
 - BPA proposes to use \$15 million per year of reserves for capital investments. This is consistent with the outcome of the last two rate case settlement agreements.
 - There have been discussions about increasing the amount assumed in the rate case or waiting until the rate period to increase the amount if circumstances allow it. No decision has been made. Customer input would be welcome.
- Most significant updates since the IPR
 - Depreciation has been revised to take into account the updated segmentation study.
 - Net interest has been revised to incorporate an updated interest offset credit calculation based on an updated reserves forecast.
- Changes to be expected in the Initial Proposal
 - Updates for final IPR decisions
 - Updates for actual FY08 results, e.g., actual capital borrowing, actual ending reserves
 - Adjustment to Schulz-Wautoma expense
 - Adjustments to ensure consistency with other forecasts (LGIA revenue credits) and
 - studies (segmentation)



Segmented Revenue Requirement

TRANSMISSION REVENUE REQUIREMENT INCOME STATEMENT (\$thousands)

| | A | B |
|--|----------------|----------------|
| | FY 2010 | FY 2011 |
| 1 OPERATING EXPENSES | | |
| 2 TRANSMISSION OPERATIONS | 120,405 | 122,661 |
| 3 TRANSMISSION MAINTENANCE | 125,716 | 130,687 |
| 4 TRANSMISSION ENGINEERING | 26,500 | 28,011 |
| 5 TRANSMISSION ACQ & ANCILLARY SERVICES | 98,963 | 99,505 |
| 6 BPA INTERNAL SUPPORT | 76,238 | 77,007 |
| 7 NON-FEDERAL PROJECTS DEBT SERVICE | 5,890 | 4,690 |
| 8 DEPRECIATION & AMORTIZATION | 192,993 | 204,535 |
| 9 TOTAL OPERATING EXPENSES | 646,705 | 667,096 |
| 10 INTEREST EXPENSE | | |
| 11 DEBT SERVICE REASSIGNMENT INTEREST | 55,476 | 55,475 |
| 12 INTEREST ON FEDERAL INVESTMENT - | | |
| 13 ON APPROPRIATED FUNDS | 23,198 | 22,051 |
| 14 ON LONG-TERM DEBT | 119,877 | 139,774 |
| 15 INTEREST INCOME | (20,470) | (19,914) |
| 16 AMORTIZATION OF CAPITALIZED BOND PREMIUMS | 758 | 692 |
| 17 CAPITALIZATION ADJUSTMENT | (18,968) | (18,968) |
| 18 AFUDC | (8,983) | (12,605) |
| 19 NET INTEREST EXPENSE | 150,888 | 166,505 |
| 20 TOTAL EXPENSES | 797,593 | 833,601 |
| 21 MINIMUM REQUIRED NET REVENUES 1/ | 57,893 | 57,581 |
| 22 PLANNED NET REVENUES FOR RISK | 0 | 0 |
| 23 TOTAL PLANNED NET REVENUES | 57,893 | 57,581 |
| 24 TOTAL REVENUE REQUIREMENT | 855,486 | 891,182 |

1/ SEE NOTE ON CASH FLOW TABLE.



Segmented Revenue Requirement

**TRANSMISSION REVENUE REQUIREMENT
STATEMENT OF CASH FLOWS
(\$thousands)**

| | A FY 2010 | B FY 2011 |
|---|--------------|--------------|
| 1 CASH FROM CURRENT OPERATIONS: | | |
| 2 MINIMUM REQUIRED NET REVENUES 1/ | 57,893 | 57,581 |
| 3 EXPENSES NOT REQUIRING CASH: | | |
| 4 DEPRECIATION & AMORTIZATION | 192,993 | 204,535 |
| 5 NON-FEDERAL PROJECTS DEBT SERVICE | 5,890 | 4,690 |
| 6 AMORTIZATION OF CAPITALIZED BOND PREMIUMS | 758 | 692 |
| 7 CAPITALIZATION ADJUSTMENT | (18,968) | (18,968) |
| 8 DRAWDOWN OF CASH RESERVES FOR CAPITAL FUNDING | 15,000 | 15,000 |
| 9 ACCRUAL REVENUES (AC INTERTIE/FIBER) | (32,430) | (38,504) |
| 10 CASH PROVIDED BY CURRENT OPERATIONS | 221,136 | 225,026 |
| 11 CASH USED FOR CAPITAL INVESTMENTS: | | |
| 12 INVESTMENT IN: | | |
| 13 UTILITY PLANT | (264,626) | (279,982) |
| 14 CASH USED FOR CAPITAL INVESTMENTS | (264,626) | (279,982) |
| 15 CASH FROM TREASURY BORROWING AND APPROPRIATIONS: | | |
| 16 INCREASE IN LONG-TERM DEBT | 249,626 | 264,982 |
| 17 DEBT SERVICE REASSIGNMENT PRINCIPAL | (12) | (154) |
| 18 REPAYMENT OF LONG-TERM DEBT | (190,251) | (115,000) |
| 19 REPAYMENT OF CAPITAL APPROPRIATIONS | (15,873) | (94,872) |
| 20 CASH FROM TREASURY BORROWING AND APPROPRIATIONS | 43,490 | 54,956 |
| 21 ANNUAL INCREASE (DECREASE) IN CASH | 0 | 0 |
| 22 PLANNED NET REVENUES FOR RISK | 0 | 0 |
| 23 TOTAL ANNUAL INCREASE (DECREASE) IN CASH | 0 | 0 |

1/ Line 21 must be greater than or equal to zero, otherwise net revenues will be added so that there are no negative cash flows for the year.



Segmented Revenue Requirement

SEGMENTED TRANSMISSION REVENUE REQUIREMENTS (\$thousands)

| | A | B | C | D | E | F | G | H |
|---|---------|---------------------------|---------|----------------------|---------------------|---------------------|-----------------|-----------------------|
| | TOTAL | Generation Integration | NETWORK | Southern Intertie | Eastern Intertie | Utility Delivery | DSI Delivery | Ancillary Services |
| FY 2010 | | | | | | | | |
| 1 Operations & Maintenance | 348,859 | 4,155 | 216,832 | 36,549 | 2,070 | 2,164 | 3,295 | 83,794 |
| 2 Transmission Acquisition & Ancillary Services | 98,963 | 231 | 28,496 | 3,345 | 324 | 558 | 241 | 65,768 |
| 3 Non-Federal Debt Service | 5,890 | 0 | 5,890 | 0 | 0 | 0 | 0 | 0 |
| 4 Depreciation | 192,993 | 2,244 | 140,570 | 24,411 | 3,011 | 1,047 | 2,161 | 19,549 |
| 5 Net Interest Expense | 150,888 | 1,730 | 121,146 | 16,531 | 2,908 | 776 | 1,837 | 5,960 |
| 6 Planned Net Revenues | 57,893 | 383 | 51,309 | 3,659 | 644 | 172 | 407 | 1,319 |
| 7 Total Transmission Revenue Requirement | 855,486 | 8,743 | 564,243 | 84,495 | 8,957 | 4,717 | 7,941 | 176,390 |
| FY 2011 | | | | | | | | |
| 8 Operations & Maintenance | 358,366 | 4,264 | 223,115 | 37,518 | 2,126 | 2,223 | 3,383 | 85,737 |
| 9 Transmission Acquisition & Ancillary Services | 99,505 | 221 | 29,141 | 3,324 | 303 | 554 | 229 | 65,733 |
| 10 Non-Federal Debt Service | 4,690 | 0 | 4,690 | 0 | 0 | 0 | 0 | 0 |
| 11 Depreciation | 204,535 | 2,303 | 151,240 | 25,225 | 3,036 | 1,078 | 2,201 | 19,452 |
| 12 Net Interest Expense | 166,505 | 1,747 | 135,792 | 17,439 | 2,898 | 786 | 1,837 | 6,006 |
| 13 Planned Net Revenues | 57,581 | 283 | 52,605 | 2,825 | 470 | 127 | 298 | 973 |
| 14 Total Transmission Revenue Requirement | 891,182 | 8,818 | 596,583 | 86,331 | 8,833 | 4,768 | 7,948 | 177,901 |



Repayment Study

- BPA is updating the repayment study interface.
 - BPA is moving from a Munex-based system to a DBC-based system for its debt management database needs.
 - The repayment study model is being recoded to function with the DBC software.
 - BPA's repayment study methodology will not change.
 - The new model will be modified so that it can incorporate the full range of possible call terms available for BPA's Federal debt.
 - The new model will be subject to intensive tests including comparisons with Munex output, ensuring matching output from the new model.
 - BPA hopes to complete the project so that the new interface can be used in the Initial Proposal. If that is not feasible, we expect to use it for the Final Proposal.
- Replacements
 - Historically, repayment studies have used replacements derived from complex calculations using the Handy-Whitman Index and Iowa curves, without regard for actual planning estimates by the business units.
 - With the advent of the asset management program, business units are now calculating replacements.
 - We anticipate using the business unit-determined data sets in the Initial Proposal.



Risk Analysis



Risk Analysis

- BPA's 95% two-year Treasury Payment Probability (TPP) Standard defines BPA's tolerance for financial risk in rate cases.
- Largest drivers of TPP:
 - Starting 2009 reserves for risk
 - Uncertainty (variability) in revenues & expenses
- Preliminary analyses indicate it is likely that no Planned Net Revenues for Risk (PNRR) will be required to meet the TPP standard.
- Some significant risk-sharing issues remain to be determined, especially regarding uncertainty over resource support services quantities and costs/prices.



Changes in Revenues from TR-08

- PTP is the largest revenue change. Below are some drivers of change that may impact the TR-10 Initial Proposal:
 - Network Open Season (NOS) revenues
 - Deferrals taking service
 - Conditional firm
 - Rollovers
 - Transmission Service Requests (TSRs) associated with Large Generation Interconnection Agreements (LGIA)
- Load Forecasting



Wind Integration Update



Wind Generation Scheduling

- Northwest Wind Integration Action Plan – Action 11:
 - “...the Northwest Wind Integration Forum should evaluate the potential costs and benefits of a regional wind forecasting network, and develop an implementation plan in the event of a positive assessment.”
- BPA will work with the NW Power and Conservation Council to follow up on this action item.
- Regional effort is based on the theory that combining and sharing data from various wind facilities results in increased forecast accuracy and more accurate schedules.
- Exploring other collaborative efforts to improve accuracy.



FCRPS Reserve Capability

- Studies are underway to estimate the capability of the FCRPS, to provide services necessary to integrate wind resources, have started.
- BPA has identified a set of conditions where the system no longer operates in an acceptable manner.
 - These indicate points at which other changes must occur in order to meet the FCRPS multi-purpose objectives.
- Preliminary results on the reserves “threshold question” are expected by the end of November 2008, followed by a period of internal and external technical review.



Next Steps

- Open for customer comment

