

BPA Financial Reserves Workshop #2

May 10, 2016

1pm-4pm

BPA Rates Hearing Room, 1201 Lloyd Blvd, Suite 200, Portland, OR

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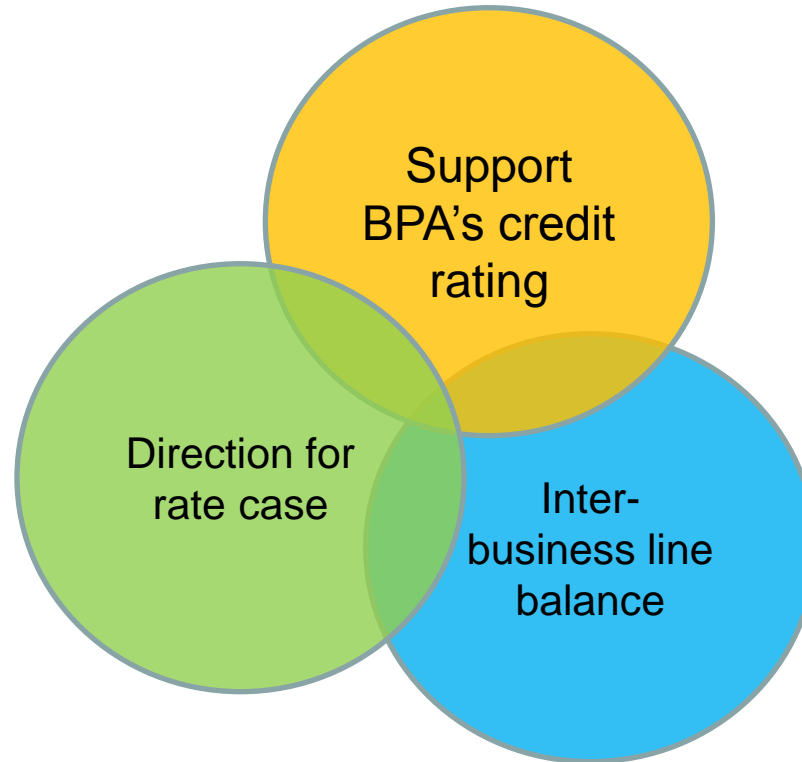
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Workshop #2 Agenda

1. Review of motivation and objectives for the policy
2. Outline of the approach under consideration
3. Discuss methods for determining reserves targets
 - a. Status quo
 - b. Days cash on hand
 - c. TPP with reserves only
 - d. Other??
4. Discuss policy choices in the “below” reserves target situation
 - a. Purpose of action
 - b. What action to take
 - c. How big should the action be
5. Discuss policy choices in the “above” reserves target situation
 - a. Purpose of action
 - b. What action to take
6. Implementation timing

Policy Motivation



A policy would have many benefits that include:

- Provide support for BPA's credit rating
- Provide direction for implementation of the policy in the rate case
- Provide guidance for balancing different financial characteristics of the business lines

Policy Objectives

- General Framework: A policy needs to be formed from an Agency perspective but also accommodate business line specifics
 - Credit Rating Agencies rate BPA as a whole, not by business line
 - The business lines have different financial characteristics warranting different targets and thresholds
- Policy Objectives:
 - Assure adequate liquidity
 - Support BPA's current credit rating
 - Take an Agency view, while remaining sensitive to business line-specific issues
 - Be compatible with the Treasury Payment Probability standard

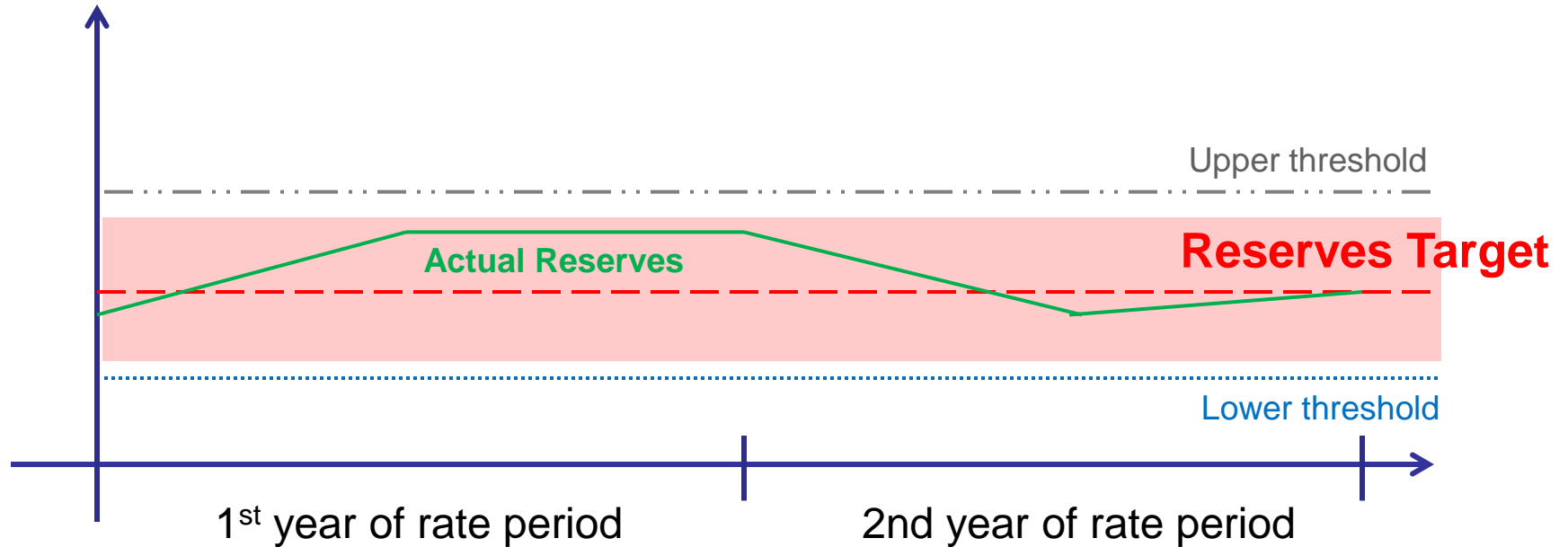
Proposed Approach

- Establish targets for financial reserves available for risk ...
 - for the Agency and for each business line
- Determine WHEN to take action if reserves are not at the target,
- Determine WHAT to do when reserves are not at the target.

Action Thresholds

- If BPA sets reserves targets and develops plans to do something when reserves are immediately above or below the targets, actions would probably be triggered every time reserves are assessed (e.g., every year, or every rate period).
- This would involve a lot of BPA and customer time and a lot of potential controversy for limited value.
- A buffer range above and below the reserves targets would allow reserves to fluctuate around the reserves target and not require actions each time reserves are assessed (e.g. every year, or every rate period).
- If reserves are outside the defined range, that is, rise above a defined 'upper threshold', or fall below a defined 'lower threshold', BPA would take action.
- This presentation assumes this structure, so you will hear about 'upper thresholds' and 'lower thresholds'.

How to Set Reserves Targets?



What is the methodology, the actual process, to determine reserves targets for each business line and the Agency?

Reserves Target Methodologies Alternatives

- Status Quo
- Adopt a metric from the financial industry.
 - “Days Cash on Hand” is a common industry metric that measures the amount of cash (financial reserves) compared to the amount of annual operating expenses.
 - The credit rating agencies routinely examine this metric.
 - This would track with the financial size of a business line.
- Create a metric tailored to BPA’s situation.
 - We could perform a TPP calculation without incorporating the Treasury Facility. This would measure the amount of reserves required for each business line to meet the TPP standard with reserves alone.
 - This would track the riskiness of the cash flow of a business line.
- Other alternatives for calculating the reserves target for each business line and the Agency?

Target Methodology—Status Quo

- BPA's current practice supports the minimum amount of reserves that Power or Transmission need to meet the 95% TPP standard, with another criterion for Power rates.
- Transmission rates
 - The only adjustment that has been contemplated is the addition of PNRR (Planned Net Revenues for Risk) to the revenue requirement if the rate case TPP is below 95% without this addition. (PNRR has never been added to Transmission rates; therefore, Transmission rates have never been increased in order to increase reserves.)
- Power rates
 - PNRR has been added to meet the 95% TPP standard.
 - Power rates have also included a CRAC (Cost Recovery Adjustment Clause), which, if triggered, would increase Power rates at the beginning of a fiscal year.
 - The CRAC threshold is set to be the higher of two levels:
 - The level required to meet the 95% TPP standard as calculated during a rate case; or
 - \$0 in financial reserves for risk attributed to Power.

Target Methodology–Days Cash on Hand

- Days cash on hand calculation
 - Days cash on hand captures the relationship between the amount of cash and the amount of average daily expenses required to operate the business.
 - Days cash on hand is a measure of the number of days a business could continue to operate using its own cash on hand if revenue stopped.
 - A method based on Days cash on hand would define reserves targets as a function of each business line's operating expenses.
 - Some adjustments are made to total expenses so they reflect the true operating expenses that would be required to operate the business.

- A Days Cash on Hand target would naturally grow over time as expenses grow.

- Days Cash on Hand = Reserves for risk ÷ Operating expenses[†] / 365
 - † Excluding:
 - Depreciation
 - Amortization
 - Debt service
 - Power purchases

 - Examples in Appendix

Target Methodology–TPP with reserves only

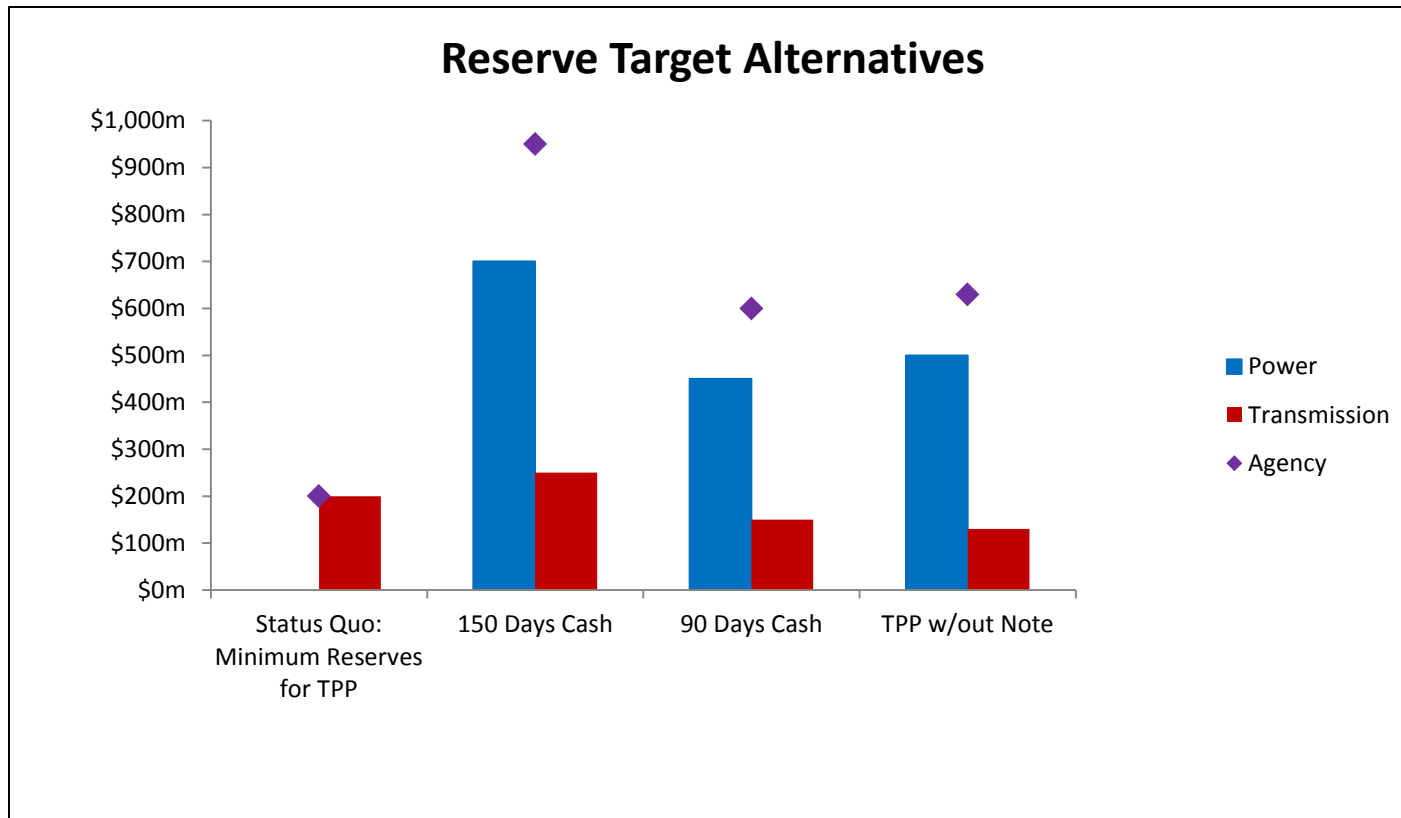
- BPA’s risk models could be used to calculate a reserves target for both Power and Transmission. The targets calculated for each business line could be summed, resulting in the Agency target.
- The target would be calculated on a forecast basis, for example, over an upcoming rate period.
- Reliance on the Treasury Facility would be removed from the calculation.
- Starting reserves could be adjusted to a point where TPP is exactly 95%.
- Using the BP-16 Toolkit model for Power and BP-16 TRAM model for Transmission resulted in reserves targets of:
 - Power
 - \$500 million
 - Transmission
 - \$130 million
- This methodology would define reserves targets as a function of each business line’s financial uncertainty. As uncertainty increases or decreases, the reserves targets would increase or decrease accordingly.

Reserves Target Alternatives Examples

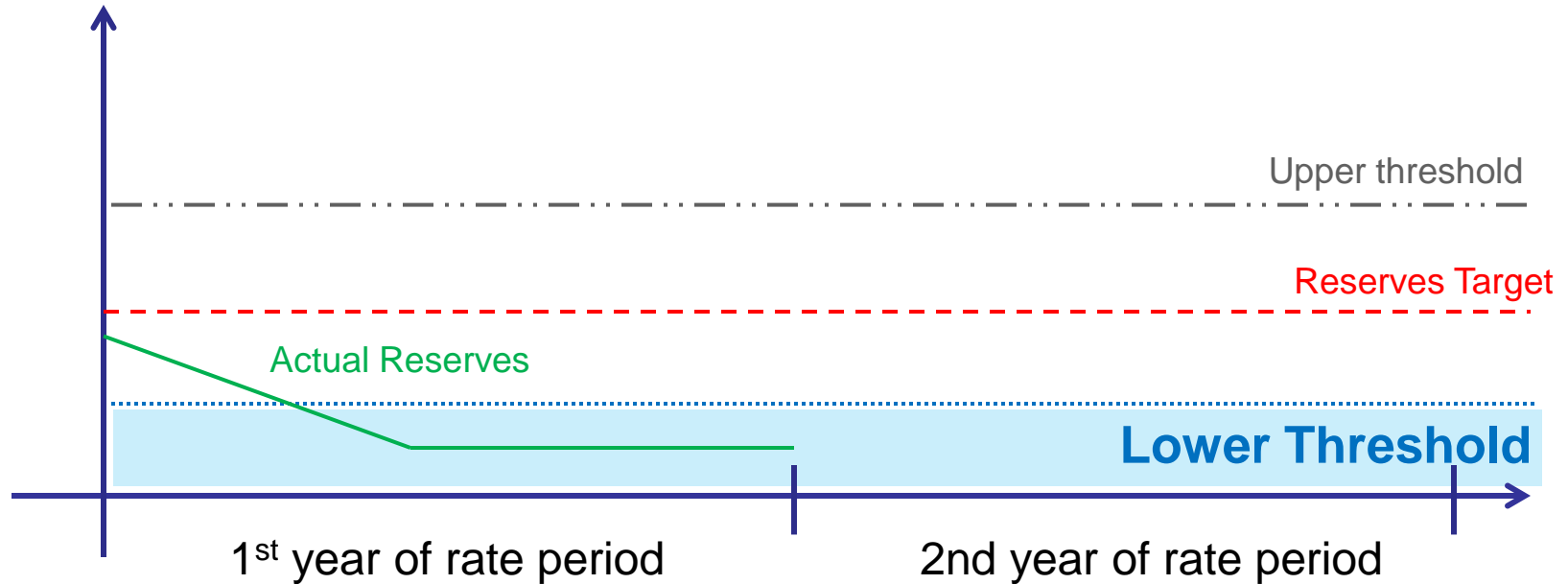
Reserve Target Alternatives						
Alternative	Reserves Target	Summary of Target	Target in \$	Benefits of Alternative	Support for Objectives	
Status Quo	Minimum reserves for TPP	The target results from calculating, for each business line individually, the minimum amount of reserves they can carry while still meeting the 95% TPP standard assuming the current allocation of the Treasury Note (\$750m to Power, \$0 Transmission). The Agency reserves target is the sum of the business line targets.	Agency: \$230m Power: \$0m Trans: \$230m	Easy to implement (already implemented)	Assure adequate liquidity Support BPA's current credit rating Take an Agency view, BL equity Compatible with TPP Durable Incremental	- - - + 0 ++
1a	150 Days Cash	Calculate the amount of reserves necessary for each business line to meet 150 days cash on hand. 150 days is the bottom end of the threshold for AA rate utilities according to Moody's. The Agency target is the sum of the business line targets	Agency: \$950m Power: \$700m Trans: \$250m	strong cash flow support, strong credit rating support, standard industry metric (easy to explain), equitable between business lines, not as susceptible to large changes in targets as a TPP measure	Assure adequate liquidity Support BPA's current credit rating Take an Agency view, BL equity Compatible with TPP Durable Incremental	++ ++ + + + 0
1b	90 Days Cash	Calculate the amount of reserves necessary for each business line to meet 90 days cash on hand. 90 days is the bottom end of the threshold for A rated utilities according to Moody's. The Agency target is the sum of the business line targets	Agency: \$600m Power: \$450m Trans: \$150m	Good cash flow support, good credit rating support, standard industry metric (easy to explain), equitable between business lines, not as susceptible to large changes in targets as a TPP measure	Assure adequate liquidity Support BPA's current credit rating Take an Agency view, BL equity Compatible with TPP Durable Incremental	+ + + + + 0
2	TPP reserves only	The target results from a calculating, for each business line, the minimum amount of reserves they can carry while still meeting the TPP standard w/out aid from the Treasury Note (excludes w/in year need). The Agency reserves target is the sum of the business line targets.	Agency: \$630m Power: \$500m Trans: \$130m	Good cash flow support, good credit rating support, equitable between business lines, increases and decreases with financial risk (correlates with BPA's financial risks), easy to customize to changing BPA circumstances	Assure adequate liquidity Support BPA's current credit rating Take an Agency view, BL equity Compatible with TPP Durable Incremental	+ + + + + +
3	Other					

Reserves Target Alternatives

- Graphical representation of previous slide



Below Reserves Range



What action do we take if reserves are below the lower threshold?

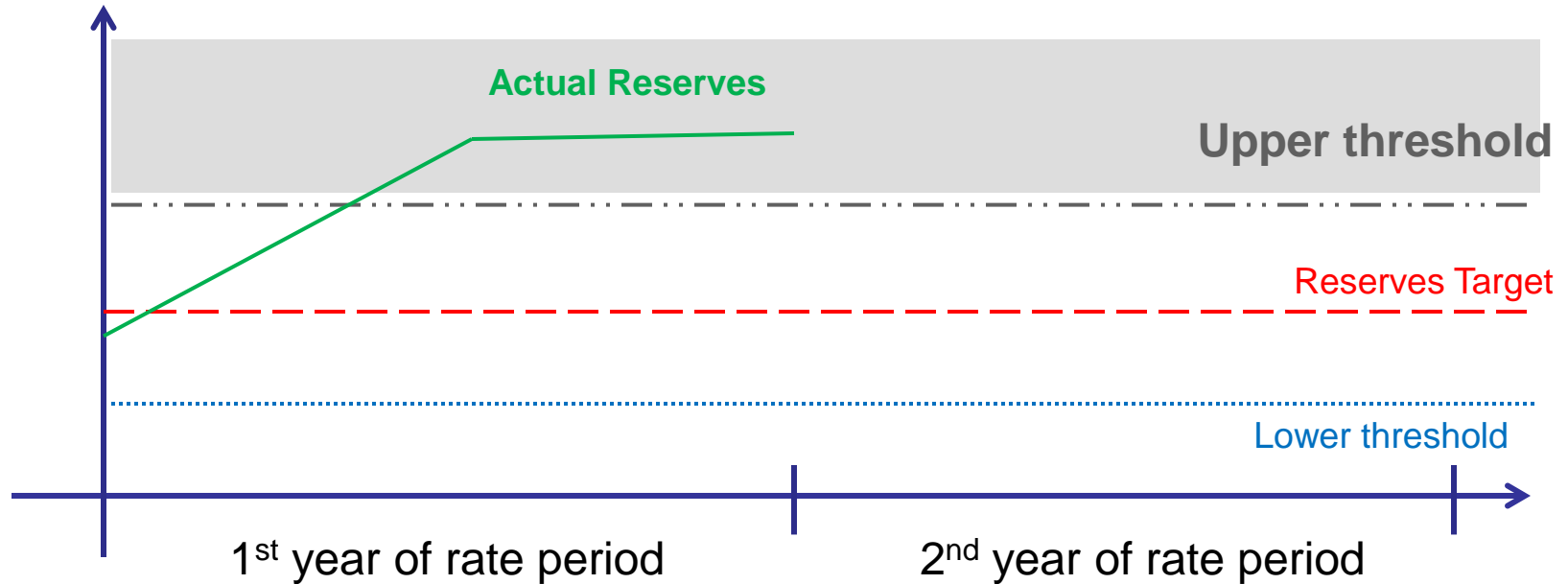
Below Lower Threshold Action

- The purpose of actions taken when reserves are below the lower threshold is to raise reserves into the acceptable range (i.e., between the lower and upper thresholds) by generating incremental revenue.
- Action would be taken if reserves attributed to a business line fall below the lower threshold.
 - a) Alternative 1: CRAC, assessed annually
 - Pros: can adjust each year, would not require as much of a buffer
 - Cons: potential for more rate volatility
 - b) Alternative 2: PNRR, assessed each rate period
 - Pros: less frequent potential for rate increases
 - Cons: by waiting perhaps two years, a bad situation could get worse before corrective action is taken; threshold would need to be higher (i.e., would be easier to trigger)
 - c) Alternative 3: Other?

Below Lower Threshold–Size of Rate Increase

- When a rate increase is triggered, how big should it be?
 - a) Alternative 1: Difference between actual reserves and lower threshold
 - Pros: strong support for cash flow for liquidity and credit rating, also compatible with TPP. Mitigates downside tail risk scenarios which are the most important to mitigate.
 - Cons: depending on the target methodology, recovering the full amount in a single year could require a large rate increase.
 - b) Alternative 2: Difference between actual reserves and lower threshold up to a maximum amount per year.
 - Pros: good support for cash flow for liquidity and credit rating, also compatible with TPP.
 - Cons: alternative does not mitigate downside tail risk scenarios, which are the most important to mitigate.
 - c) Alternative 3: Other?

Above Reserves Range



What action do we take if reserves are above the upper threshold?

Above Reserves Range

- The purpose of taking action when reserves are above the upper threshold is to make better use of reserves that are (1) above the necessary amount for credit rating support, and (2) above the amount needed for TPP support.
- Action would be taken if both (1) reserves attributed to a business line are above the upper threshold for that BL and (2) agency reserves are above the upper threshold for the agency.
- Proposed principle:
 - Use reserves above the upper threshold for a mixture of short- and long-term benefits for BPA stakeholders.
 - For example, BPA's 10-Year Financial Plan from 1993 called for a 50-50 mix of rate relief and high-interest debt retirement.
 - Rate relief provides a valuable short-term benefit
 - Debt retirement increases borrowing authority and lowers interest costs for many years providing a valuable long-term benefit
 - Increasing high-value capital investments is another potential action with long-term benefits

Summary: Upper and Lower Thresholds

- Option 1
 - Set the upper and lower thresholds at a set percentage above/below the reserves target, for example, 25%
 - Upper threshold would be 125% of the target
 - Lower threshold would be 75% of the target
- Option 2
 - If the reserves target is set based on the days cash on hand metric, the upper and lower thresholds could be defined in terms of days cash on hand also.
 - Corresponding to the above 'Option 1' example of 25% above or below the reserves target, if the reserves target were based on 90 days cash,
 - the upper threshold could be $1.25 * 90 = 112$ days cash
 - the lower threshold could be $.75 * 90 = 68$ days cash
- Other options?
- Note: the upper threshold might take into account a longer perspective than a 2-year rate period. For example, if the target methodology depends on market price, as the TPP-based target would, when market prices are low, the target will be low. If market prices climb, the target would increase, perhaps quickly. Repurposing reserves just before an upward trend in market prices would be unfortunate. One mitigation of this risk would be to use a longer time frame which might include upward trends that are outside a two-year window.

Implementation Timing

- We are discussing a reserves management approach that would guide BPA actions for several rate periods.
- The implementation of this approach may incorporate time-specific circumstances. For example, if the long-term lower threshold for a business line is substantially above current or projected reserves, it is likely that BPA would transition over several rate periods to fully implementing the decided-upon management of reserves, similar to how the TPP target was implemented.

Questions?

Workshop #3 Draft Agenda

1. Review
 1. Reserves target methodologies
 2. Above reserves target situation
 3. Below reserves target situation
2. Combine various policy choices into policy alternatives
3. Evaluate and discuss policy alternatives relative to policy objectives
 - a) BPA proposed policy alternatives
 - b) Customer proposed policy alternatives

Workshop Schedule

Date	Task
3/29	Reserves Workshop #1 Discuss background, objectives, and scope as well as target level of financial reserves
5/10	Reserves Workshop #2 Discuss use of the Treasury Note for rate making and action when reserves are above/below target
6/17	Reserves Workshop #3 BPA to share draft reserve position and proposed implementation timing
6/17-7/8	Comment Period*
August	Publish final reserve position
	*Customers can send requests/questions informally to BPAFinance mailbox between workshops

Financial Disclosure

- This information has been made publicly available by BPA on May 6, 2016 and contains information not reported in agency financial statements.

Appendix

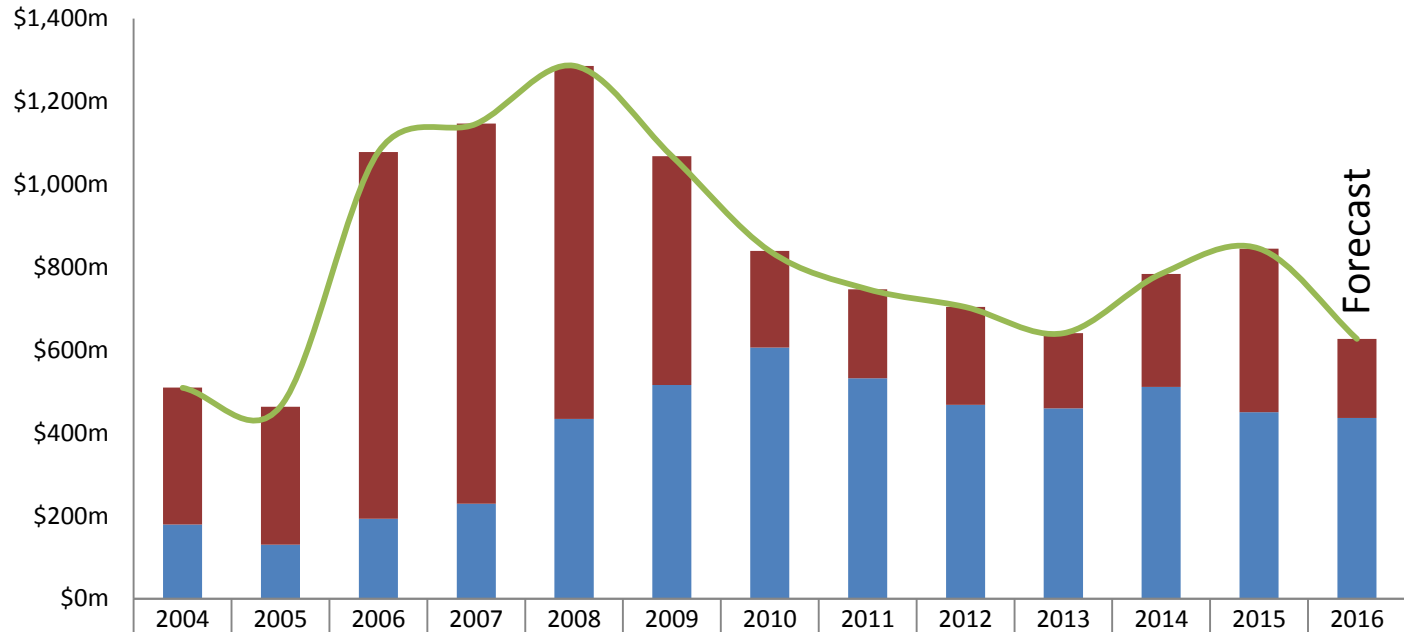
Financial Reserves Policy Background

- BPA adopted the first financial reserves-related requirement in 1993, the Treasury Payment Probability (TPP) standard. This standard had a single focus: to ensure BPA maintained sufficient financial reserves to achieve a 95% probability of making all year-end Treasury payments in the 2-year rate period. As of the end of 2015, BPA had made 32 consecutive year-end Treasury payments.
- Today, BPA's operating environment is more complex and thus the demands on, and objectives of, financial policies are different. There is an increased focus on Transmission rates, uncertainty in the future electric utility markets, and greater reliance on 3rd party debt to finance capital projects. These drivers in large part have renewed the conversation about BPA's financial policies, and in particular, financial reserves policies and practices.
- In prior rate cases, and again in BP-16, BPA and customers debated the approach to managing levels of financial reserves. The Administrator decided not to adopt new policies or practices on financial reserves in the BP-16 rate case, and to hold workshops after the rate case to discuss a financial reserves policy.

De-facto reserves policy – Treasury Payment Probability (TPP) Standard

- TPP standard first adopted in the 1993 financial plan
 - “BPA shall establish rates to maintain a level of *financial reserves* sufficient to achieve a 95% probability of making its U.S. Treasury payments in full and on time for each 2-year rate period.”
- 95% standard has stayed the same for many years, but the tools available to support the standard have changed.
 - One significant change was moving from using financial reserves solely to meet the TPP to relying on \$300m of the Treasury Facility in place of some financial reserves (2007 wholesale rate case).
 - Additionally significant, was increasing the reliance on the Treasury Facility from \$300m (2007 wholesale rate case) to \$750m (BP10 rate case) to meet the TPP standard while simultaneously relaxing the CRAC threshold from \$750m (2007 wholesale rate case) to \$0m (BP10 rate case) .
 - These changes allow now for Power financial reserves to be \$0, or even negative, and yet TPP above 95%. These combined changes limit the TPP standard’s ability to control for a prudent level of Power financial reserves.

Levels of Financial Reserves over Time



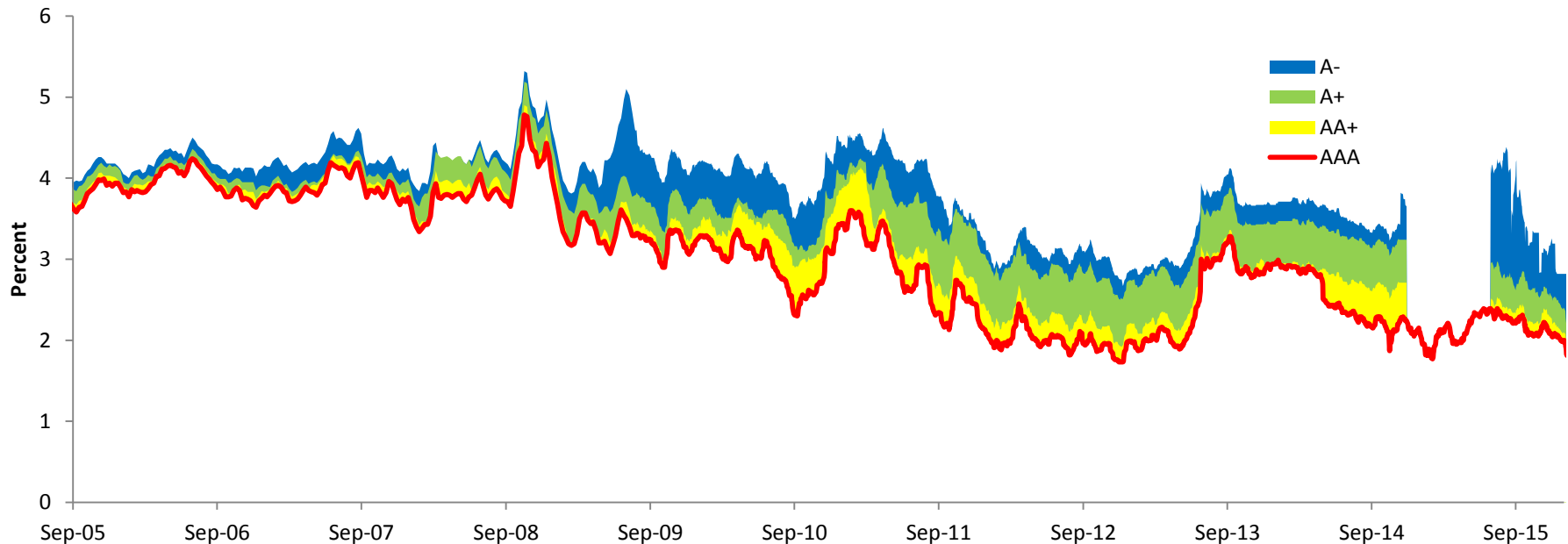
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Power Reserves for Risk	\$330m	\$333m	\$885m	\$917m	\$852m	\$552m	\$233m	\$215m	\$236m	\$182m	\$273m	\$395m	\$191m
Transmission Reserves for Risk	\$179m	\$131m	\$193m	\$229m	\$434m	\$516m	\$606m	\$532m	\$468m	\$459m	\$511m	\$450m	\$436m
Agency Reserves for Risk	\$509m	\$464m	\$1,078m	\$1,146m	\$1,286m	\$1,068m	\$839m	\$747m	\$704m	\$641m	\$784m	\$845m	\$627m

- Agency reserves for risk have declined over \$450m from 2008 to 2015.
- Reserves for risk attributed to Power have decreased roughly \$450m from 2008 to 2015.
- Reserves for risk attributed to Transmission have stayed roughly the same from 2008 to 2015.

Credit Rating and Cost of Borrowing Over Time

- The value of a higher credit rating in terms of cost of borrowing is greater than before the recession. BPA-supported non-Federal debt continues to be issued, leading to frequent ratings of BPA's creditworthiness.
- Prior to the financial crisis, the average spread between "AA" and "A" rated 20 year tax-exempt municipal debt was 0.17%. Now it is 0.63%, even though borrowing costs are now lower.

Tax Exempt Municipal Market Database Index by Credit Type
(10-year maturity)



There is a gap in interest rate data from November 2014 – June 2015 (except for the AAA curve). This is because Bloomberg discontinued their municipal market indexes and created new ones.

How Much Does BPA's Credit Rating Matter?

- BPA has direct and indirect responsibility for paying debt service on \$16.1 billion of principal outstanding.
- \$7.5 billion of such debt has been issued by third parties in the municipal bond market and carry BPA's underlying credit rating (non-federal debt).
- Over the next 10 years, up to ~\$6.4 billion of non-federal debt could be issued, carrying BPA's underlying credit rating. Of this, \$2.2 billion will be attributed to Transmission and \$4.2 billion will be attributed to Power.
- A 55 basis point^{1/} interest rate increase (+0.55%) today would result in ~\$340 million^{2/} PV increase in interest costs on the ~\$6.4^{3/} billion Non-Federal Debt forecast to be issued over the next 10 years. This equates to an average annual interest expense increase of ~\$19 million per year over the next 30 years
- *Supporting BPA's credit rating by adhering to additional financial metrics (reserves, debt ratio, & coverage ratio) may be worth the investment and be an advantage for both Power and Transmission.*

Comparison of Debt Outstanding to Credit Rating^{4/} for U.S. Public Power Utilities with Generation Ownership Exposure		
# of Entities	Avg. Debt Outstanding	Average Credit Rating
4	1.9B	AA+
14	2.0B	AA
28	2.4B	AA-
37	0.8B	A+
21	1.2B	A
17	1.3B	A-
5	0.5B	BBB+

- The table above shows the average debt outstanding for all U.S. Public Power Utilities with Generation Ownership Exposure grouped by credit rating.
- On average, utilities with more debt have a higher credit rating likely because of their reliability on debt repayment, size of their economic base and their increased focus on maintaining credit ratings.

^{1/} Possible impact of taxable and tax-exempt interest rate increase between AA and A credit since the financial crisis. Estimate based on municipal market data from 12/7/2007 to 1/12/2015

^{2/} Discounted at BPA's weighted average cost of capital (4.1% as of 9/30/2015). At a 9% discount rate, PV is \$193m.

^{3/} Estimate is \$3.0 billion issued taxable (\$800 million for P & \$2.2 billion for T) and \$3.4 billion tax-exempt (all P).

^{4/} Source: Fitch U.S. Public Power Peer Study, July 2015

Example Calculation: Days Cash on Hand

- Example calculation using real numbers based on the first quarter forecast of end of year FY 2016.

- Power

Power Days Cash on Hand = Power Reserves Available for Risk / ((Power Total Expenses – (Power Depreciation & Amort. + Power Interest Expense + Power NonFed Debt Service + Power Purchases) / 365)

$$40 \text{ days} = \$191m / ((\$2,493m - (\$226.5m + \$193.6 + \$219.2m + \$100.2m)) / 365)$$

- Transmission

Trans Days Cash on Hand = Trans Reserves Available for Risk / ((Trans Total Expenses – (Trans Depreciation & Amort. + Trans Interest Expense) / 365)

$$267 \text{ days} = \$436m / ((\$967m - (\$240m + \$130.6m)) / 365)$$

- Agency

Agency Days Cash on Hand = (Power Reserves for Risk + Transmission Reserves for Risk) / ((Power Total Expenses + Trans Total Expenses – (Power Depreciation & Amort. + Power Interest Expense + Power NonFed Debt Service + Power Purchases + Trans Depreciation & Amort. + Trans Interest Expense) / 365)

$$96 \text{ days} = \$628m / ((\$2,493m + \$967m - (\$226.5m + \$193.6m + \$219.2m + \$100.2m + \$240m + \$130.6m)) / 365)$$

Policy Framework Spectrum

less prescriptive policy
(more details elsewhere, e.g., rate case)

more prescriptive policy
(more details in policy)

Alt. 1

Policy commits BPA to setting reserves targets and action thresholds above and below the targets, and describes the actions to be taken when reserves are below or above the thresholds.

Alt. 2

Policy describes a methodology for reserves targets (e.g., 90 Days Cash on Hand), commits BPA to setting action thresholds above and below the targets, and describes the actions to be taken when reserves are below or above the thresholds.

Alt. 3

Policy describes a methodology for reserves targets (e.g., 90 Days Cash on Hand) and how to calculate action thresholds above and below the targets, and describes the actions to be taken when reserves are below or above the thresholds.

Benefits

- Easier for staff to update the approach as new tools are developed
- Leaves Administrator with more flexibility

Benefits

- Stronger evidence for BPA's willingness to support financial integrity over multiple rate periods, a plus for credit rating

- Alternatives should be measured against how well they meet objectives

Reserves Target Methodology Alternatives

- a) Alternative 1: reserves target methodology **guidance specified in policy** but specifics left for rate case.
 - E.g. “BPA will establish a target level of reserves for Agency, Power and Transmission in the rate case”
 - Pros: outlining a framework in policy but leaving actual target levels to rate cases allows more flexibility for changing business conditions, more easily accommodating business line specific situations.
 - Cons: flexibility could result in future decisions that don’t support BPA’s credit rating or stray from being equitable across business lines.
- b) Alternative 2: Reserves target **methodology specified in policy**, methodology is **90 days cash on hand** for Agency, Power and Transmission.
 - E.g. “BPA will establish a target level of reserves for Agency, Power and Transmission based upon the days cash on hand methodology. BPA will target 90 days cash on hand for the Agency and each business line.”
 - Pros: days cash on hand is a standard industry metric and resulting reserves targets will stay reasonably consistent over time. 90 days is a sufficient reserves target if accompanied by recovery mechanism that brings reserves up to a lower threshold that is within a reasonable range from the reserves target.
 - Cons: method does not flex with changes in financial risk, i.e. with the same operating expenses, and double the financial risk, the reserves target would stay the same.
- c) Alternative 3: Reserves target **methodology specified in policy**, methodology based on calculating **TPP using reserves only**.
 - E.g. “BPA will establish a target level of reserves for Agency, Power and Transmission based upon calculating the minimum level of reserves necessary to meet 95% TPP over the rate period.”
 - Pros: method increases reserves target if financial risk increases and reduces reserves target if financial risk declines.
 - Cons: method sensitive to changes in financial risk e.g. gas prices, so could be volatile over time.