

# BP -14 Power Rates Workshop

May 8, 2012



# BP-14 Power Rates Workshop

## May 8, 1:00 – 4:00 PM

### Agenda

Topic	Presenter
Intro and Purpose of Workshop	Bliven
<b>Part 1</b>	
Issues for rate case workshops	Parker
<b>Part 2</b>	
Risk Mitigation and Rates: Begin a dialogue to explore actions that could be undertaken to mitigate the rate volatility arising from setting rates based on average secondary revenues	Bliven
<ul style="list-style-type: none"> <li>• Facts/context – Market Fundamentals: What is going on with gas prices, electricity prices and how that affects net secondary revenues</li> </ul>	Dernovsek / Williams / Petty
<ul style="list-style-type: none"> <li>• How Market Fundamentals affect changes to net secondary risk profile and interact with rate volatility</li> </ul>	Lovell / Bliven
Discussion: <ul style="list-style-type: none"> <li>•Should the PF and IP rates remain fully exposed to the vagaries of the secondary revenues?</li> <li>•Real-time secondary revenue crediting that was raised by WPAG in the BP-12 case.</li> <li>•Other ideas?</li> </ul>	All Mundorf /Neale
Next Steps: <ul style="list-style-type: none"> <li>•Chart out a course of action, perhaps employing a smaller group to develop alternatives for the larger group to consider</li> </ul>	Bliven / Parker



# Part 1: Issues For Rate Case Workshops

## *POWER RATE WORKSHOPS*

- June 12
- July 24
- August 9
- August 23

## *TOPICS*

### Revenue Requirement

- Capital financing issues – to be addressed in Access to Capital workshops this summer

### Loads & Resources

- Updates of HYDSIM study assumptions
- Firm wind
- Load forecast overview



# Issues for Rate Case Workshops (Con't)

## Risk (including issues that overlap with generation inputs and transmission)

- Risk mitigation for ACS reserve-based rates (BP-12 ROD commitment)
  - Risk associated with Variable Energy Resource Balancing Service (VERBS)
  - Risk costs allocable to VERBS
  - Discussion may encompass overall risk mitigation approach, esp. for power rates
- One business line relying on financial reserves attributed to the other business line for TPP
- Net Secondary Revenue Calculation: Use of median or mean value
- New NFB mechanism to adjust rates for changes in the expected value of PS net revenue if river operations for fish recovery are more expensive than assumed in BPA's rate proposal.

## AURORA

- Model and data updates



# Issues for Rate Case Workshops (Con't)

## Rate Development

- Margin Study – agreement with publics and DSIs
- TRM Section 2.5. Interest Earned on the Bonneville Fund—Adjustment of interest credit base amount
- Tier 2
  - Cost to convert from Short-term service to non-federal resources
  - Assignment of costs and remarketing credit to "cost pool" when load drops relative to when power purchases, made in advance and based on load forecasts, are greater than actual load service obligation (Load Growth Rate and possibly Short-term rate pools)
- NLSLs for Load Following customers – Treatment of differences between NLSL and non-Federal resource deliveries



# Issues for Rate Case Workshops (Con't)

## Rate Schedules (including GRSPs)

- Demand UAI for Slice
- Irrigation Rate Discount and LDD – minor language revisions
- Slice True-up – NR revenue

## Other

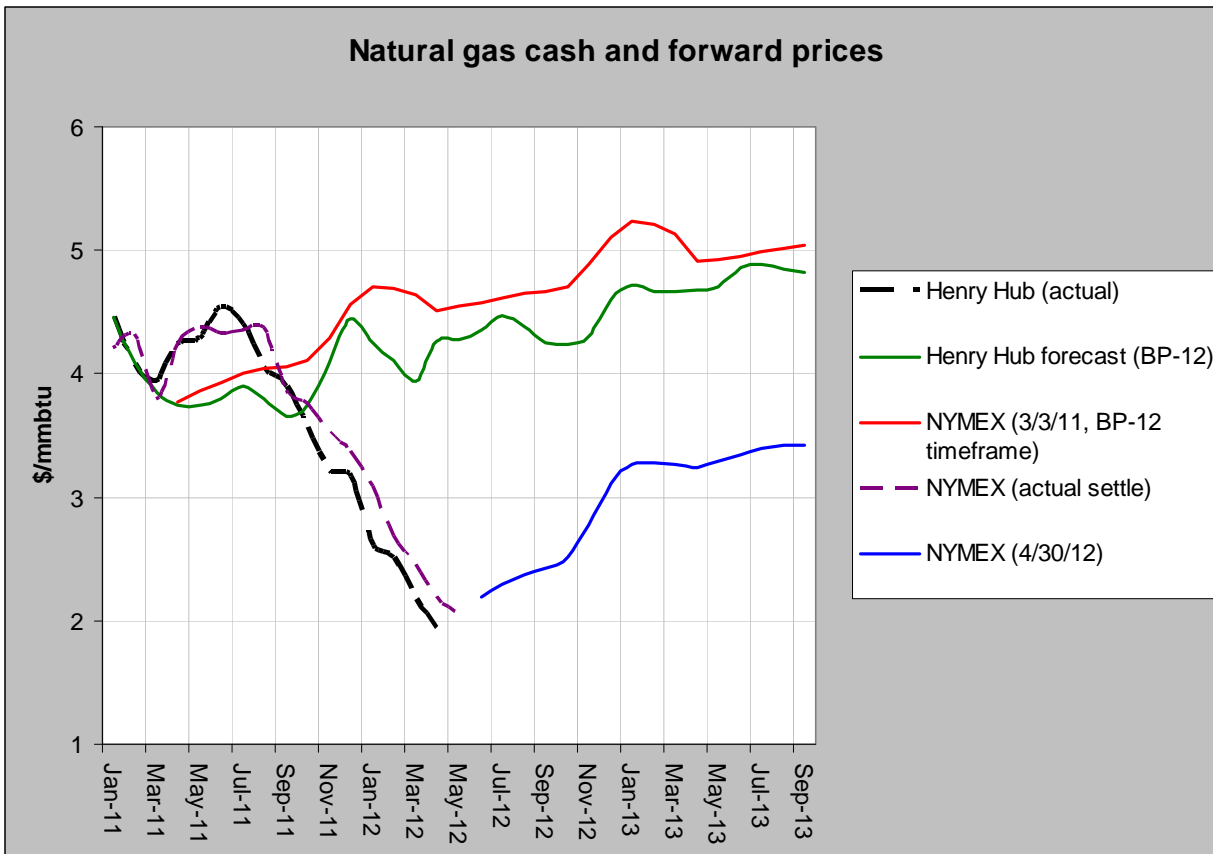
- Cost Functionalization Principles – based on customer feedback, will probably not include in BP-14
- Managing Long-term Volatility in Net Secondary Revenues



# Part 2: Risk Mitigation and Rates



# Natural gas fundamentals are bearish in the short term...



- Since the BP-12 rate case, natural gas prices have fallen considerably in both the cash and forward markets.
- Shale gas boom, including “associated gas” from oil wells, is a game changer for the industry.
- Production remains high, storage is at record levels, and there are limited short-term demand opportunities, all of which contribute to lower cash/forward prices as well as lower price forecasts.

- 1) NYMEX settle is price at expiration
- 2) BP-12 gas forecast vintage approximately March-April 2011





## ...But long term outlook is more uncertain

- Globalization of shale
  - Many experts have been looking to 2016 and the advent of domestic LNG exports as a bullish factor for long-term pricing
  - Some doubt on this for political/economic reasons, as well as expected competition from foreign countries developing their own shale reserves
- Technology and efficiency
  - How much more efficiency growth is possible? What other technological advances await in gas/oil drilling, or other sources of energy?
- Industrial, electricity demand and reliability
  - Greater coordination of gas and electric sectors is inevitable in the future
  - Low prices spur long term capital investment in gas generators and infrastructure
  - Still a dearth of long term contracts – how much more investment would be enabled by 10-20 yr supply deals?

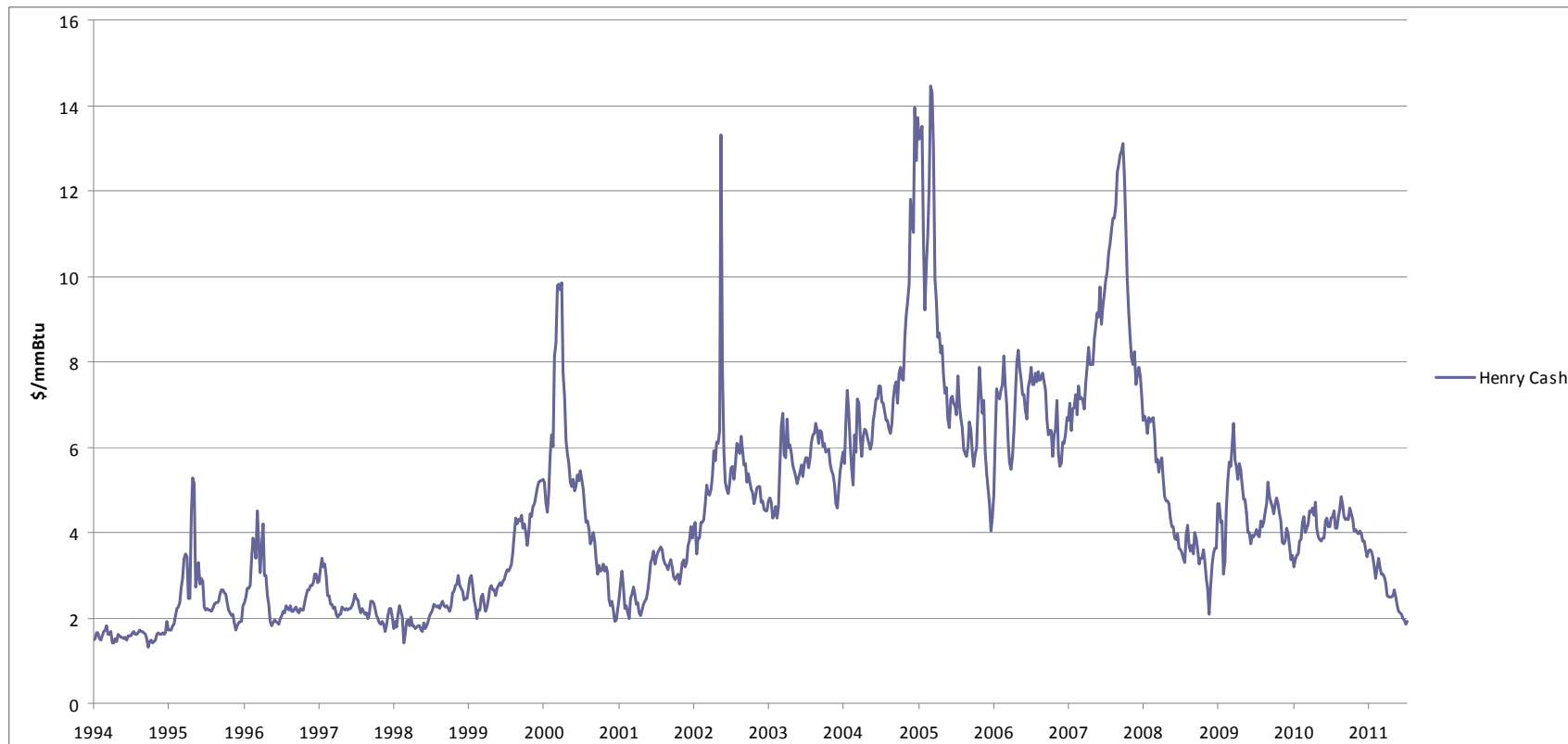


## ...But long term outlook is more uncertain (Con't)

- Environmental policy
  - Current policy outlook projected to have minimal impact on marginal cost or amount of production
  - Coal retirements already planned, EPA policies of Maximum Achievable Control Technology (MACT)/Cross State Air Pollution rule (CSAPR) delayed implementation – economic displacement of coal has proven just as, if not more, effective at reducing coal emissions
- Summary: current prices too low in terms of fundamentals, but high prices (\$6+) are very unlikely any time soon. But in the long term, economic recovery and sustained investment now could lead to higher prices and higher volatility in the future, given past market cycles. Much uncertainty around long-term production trends, policy, and future technology as well.



# Henry Hub Price History (\$/mmbtu)

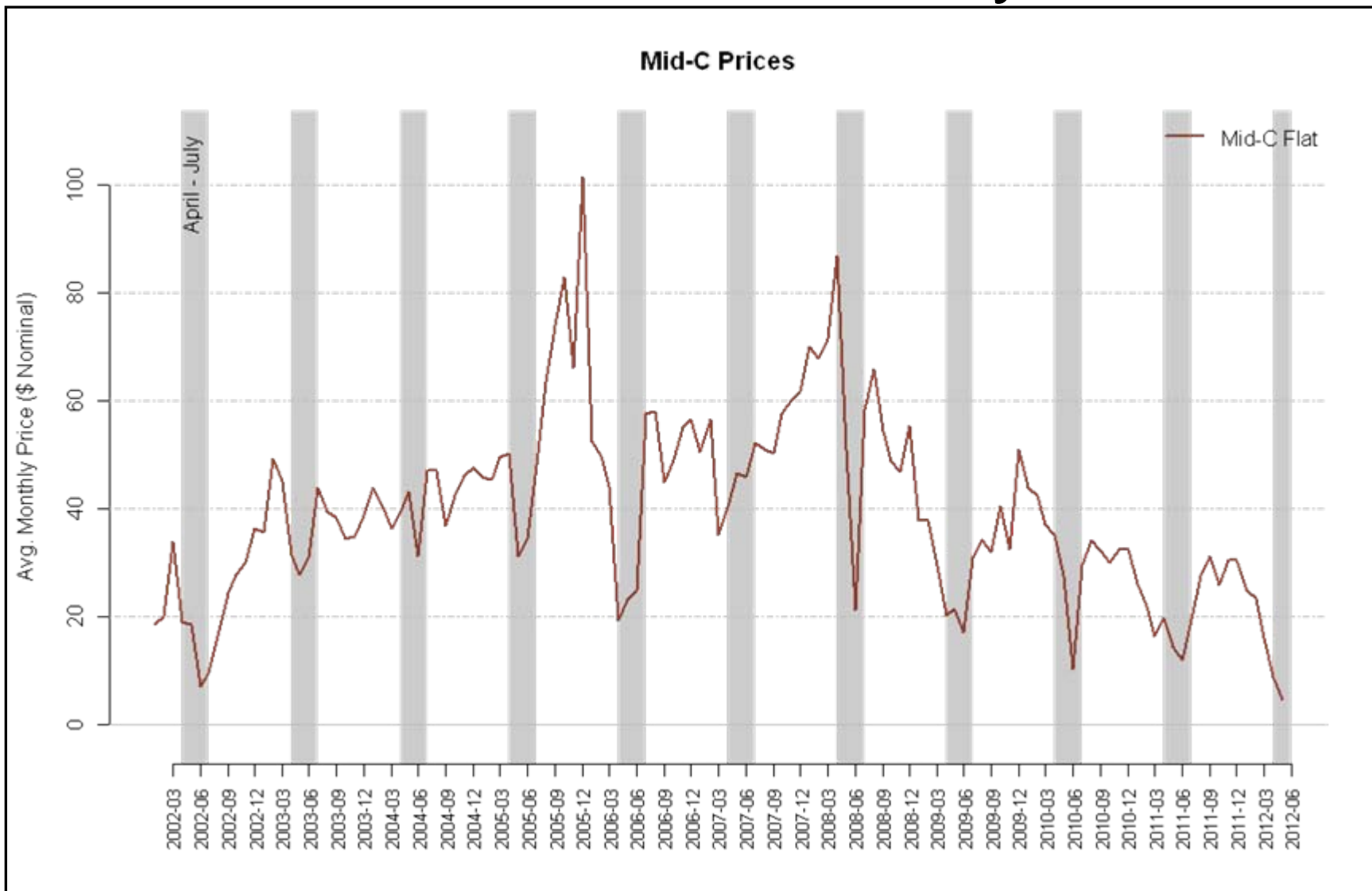


# Electricity Prices

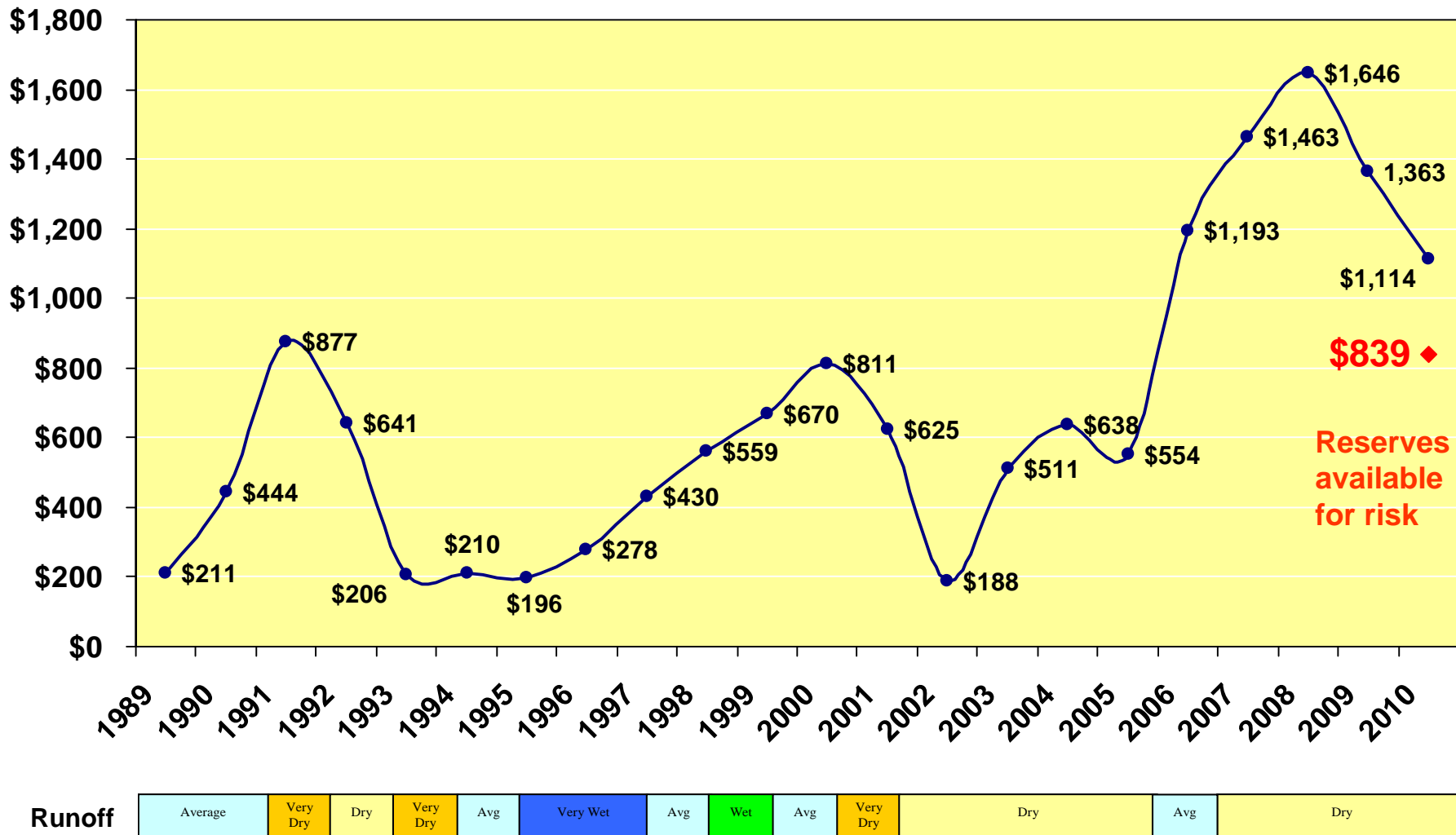
- Lower natural gas prices have a direct effect on electricity prices:
  - Varies by season, less relevant during high water
- Reduced natural gas price variability results in lower expected electricity prices, but also lower standard deviations, in risk analyses:
  - A decline in expected gas volatility primarily impacts gas prices above the median, which has a disproportionate effect on electricity prices.
  - Reduced standard deviation of an electricity price distribution has positive implications for risk mitigation measures in rate-setting



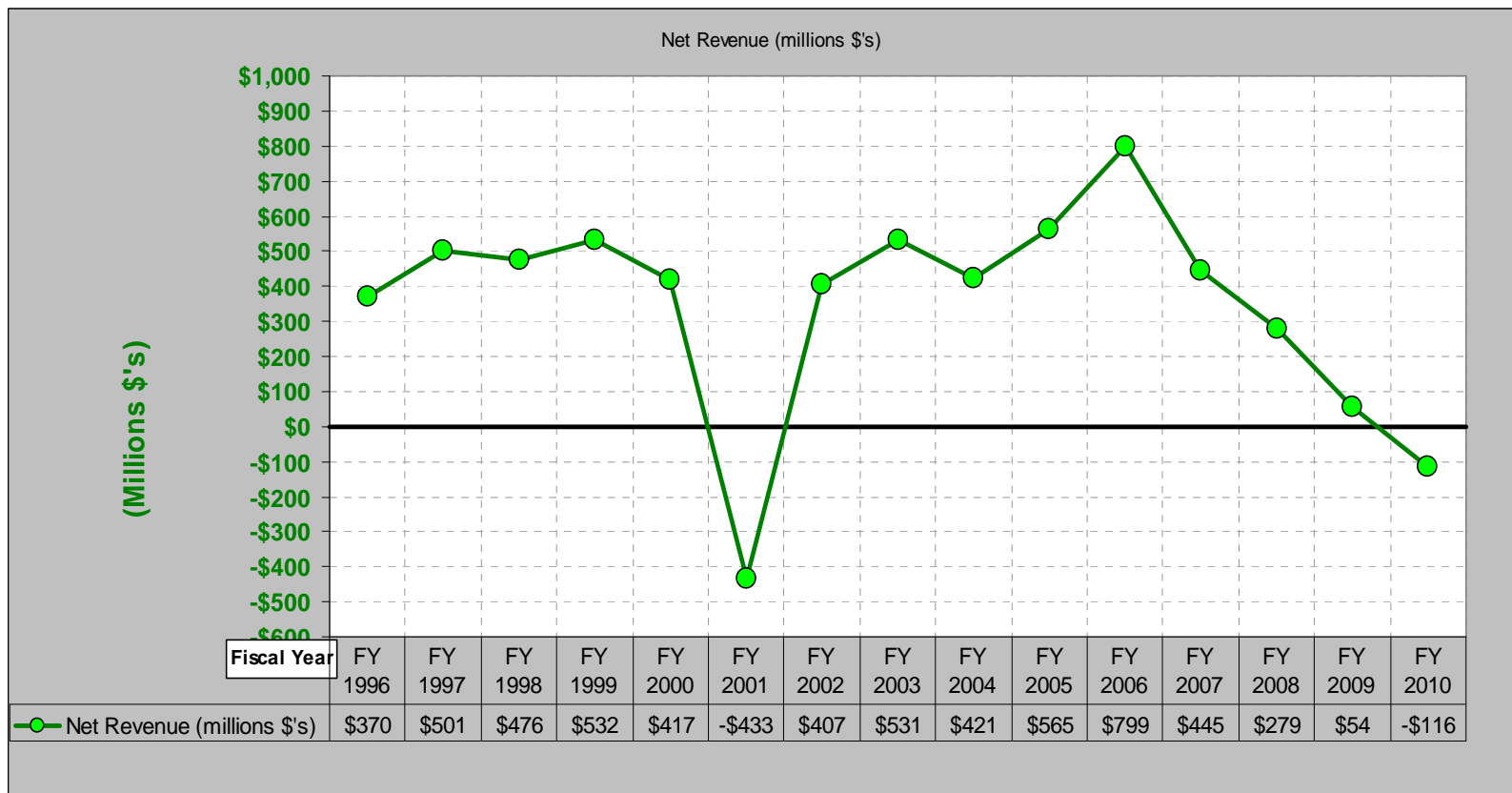
# Historical Mid-C Electricity Prices



# Year-End Financial Reserves & Runoff



# Net Secondary Revenue from Surplus Sales

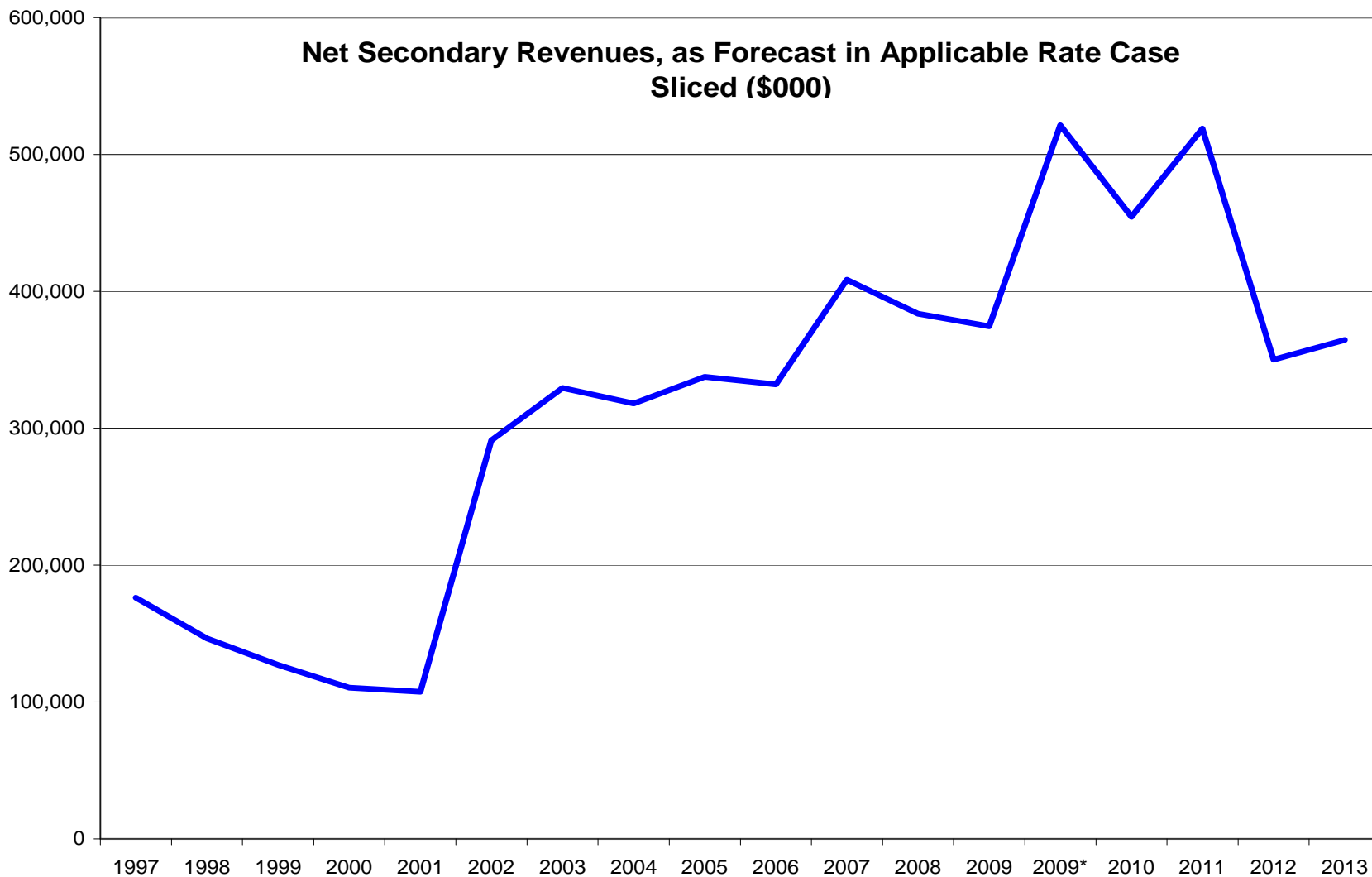


**Note: 2002-2007 secondary revenues increased by sales of additional power supplied under contracts that have since expired**

*Net secondary revenue and net sales figures are not final audited values. They are derived from committed transaction data from BPA's Trade Management System, and do not reflect what was actually delivered and billed.*



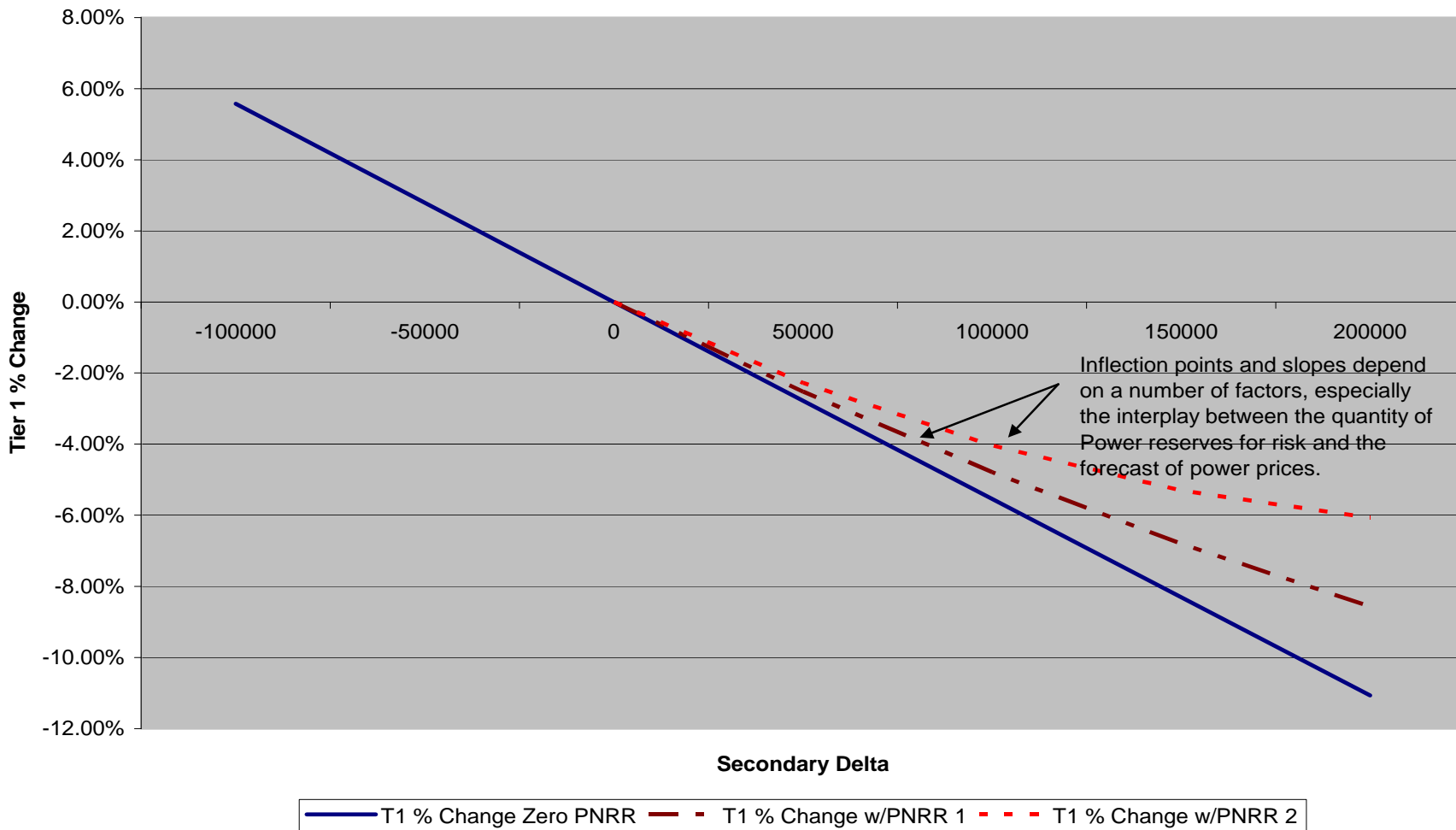
# Forecasted Net Secondary Revenues





# Tier 1 % Change With Change in Net Secondary with Hypothetical PNRR Examples

(Base Non-Slice Net Secondary = \$316M)

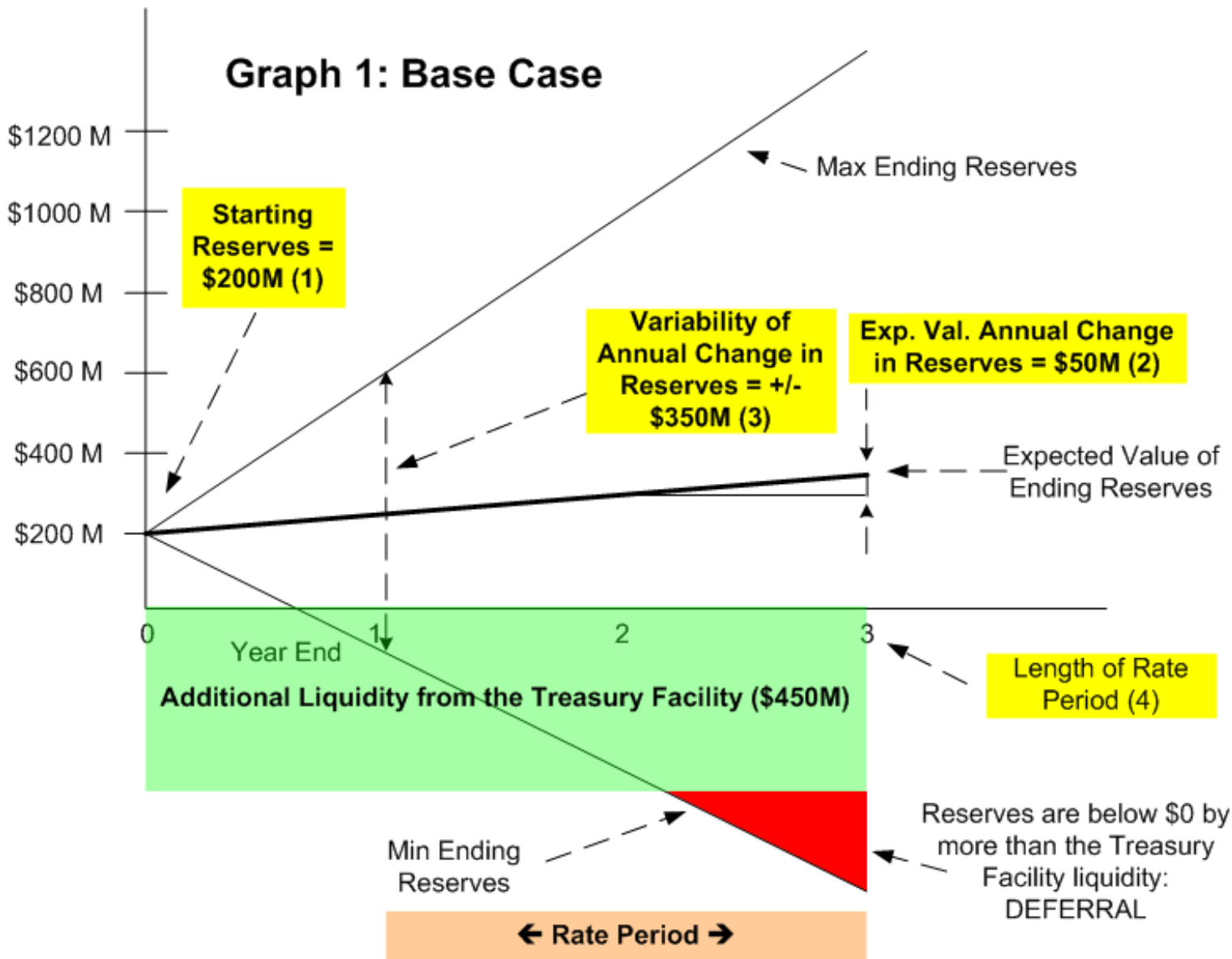


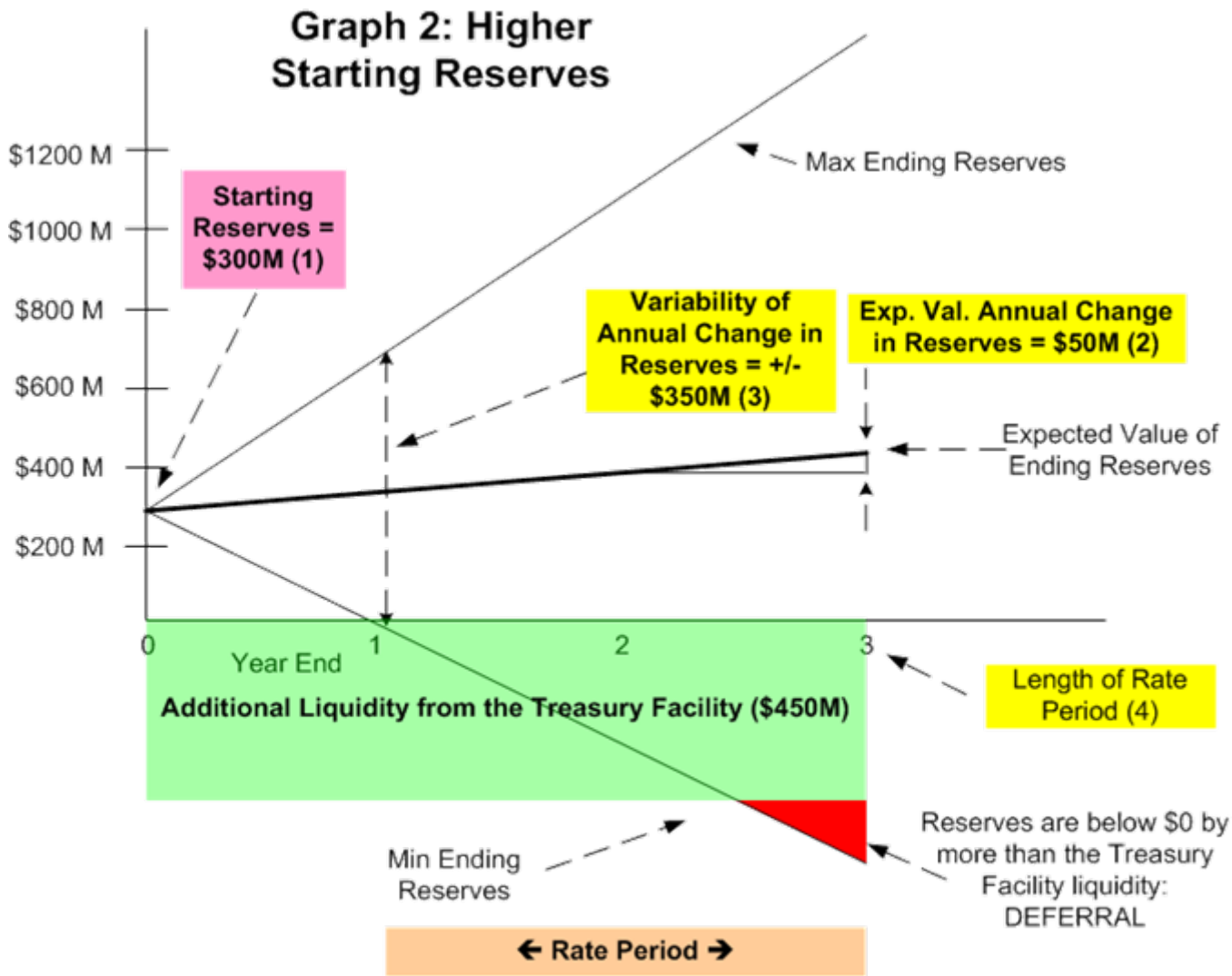
# TPP

- TPP is a function of 3 primary variables, and another factor usually treated as a given:
  - 1) Starting reserves and other liquidity;
  - 2) Annual change in reserve level (expected value) – cash flow, related to net revenue;
  - 3) The variability of annual change in reserve level (the standard deviation of #2);
  - 4) The length of the rate period
  
- The following graphs illustrate the impact of each factor by itself. The first graph shows an example two-year rate period with the year just prior to the rate period, and a sample TPP. The red area indicates that ending reserves of one year or another are below \$0 by more than the amount of the Treasury Facility PS can rely on. The next graphs represent ways to improve TPP by changing one after another of the factors.

The numbers here are purely illustrative.



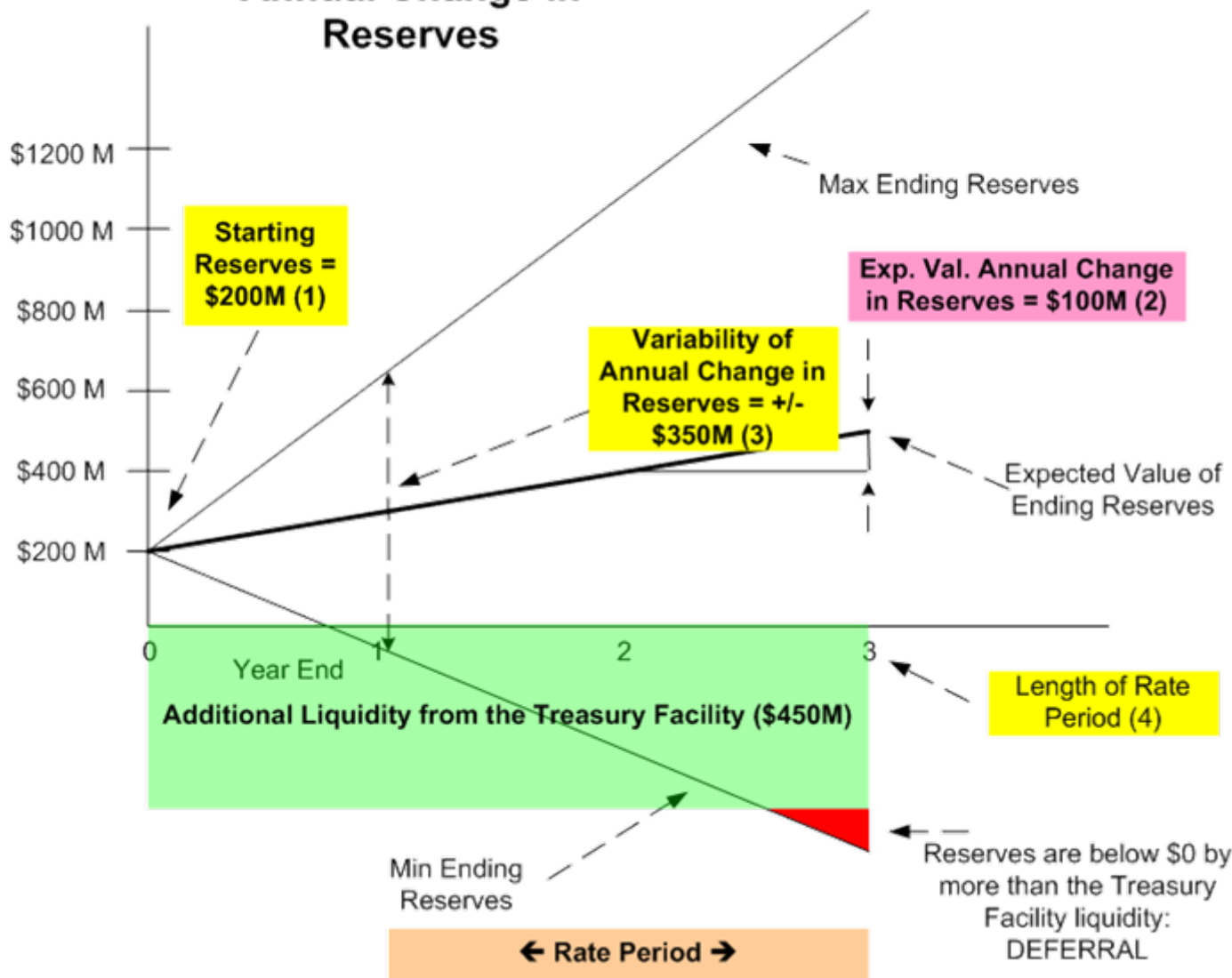




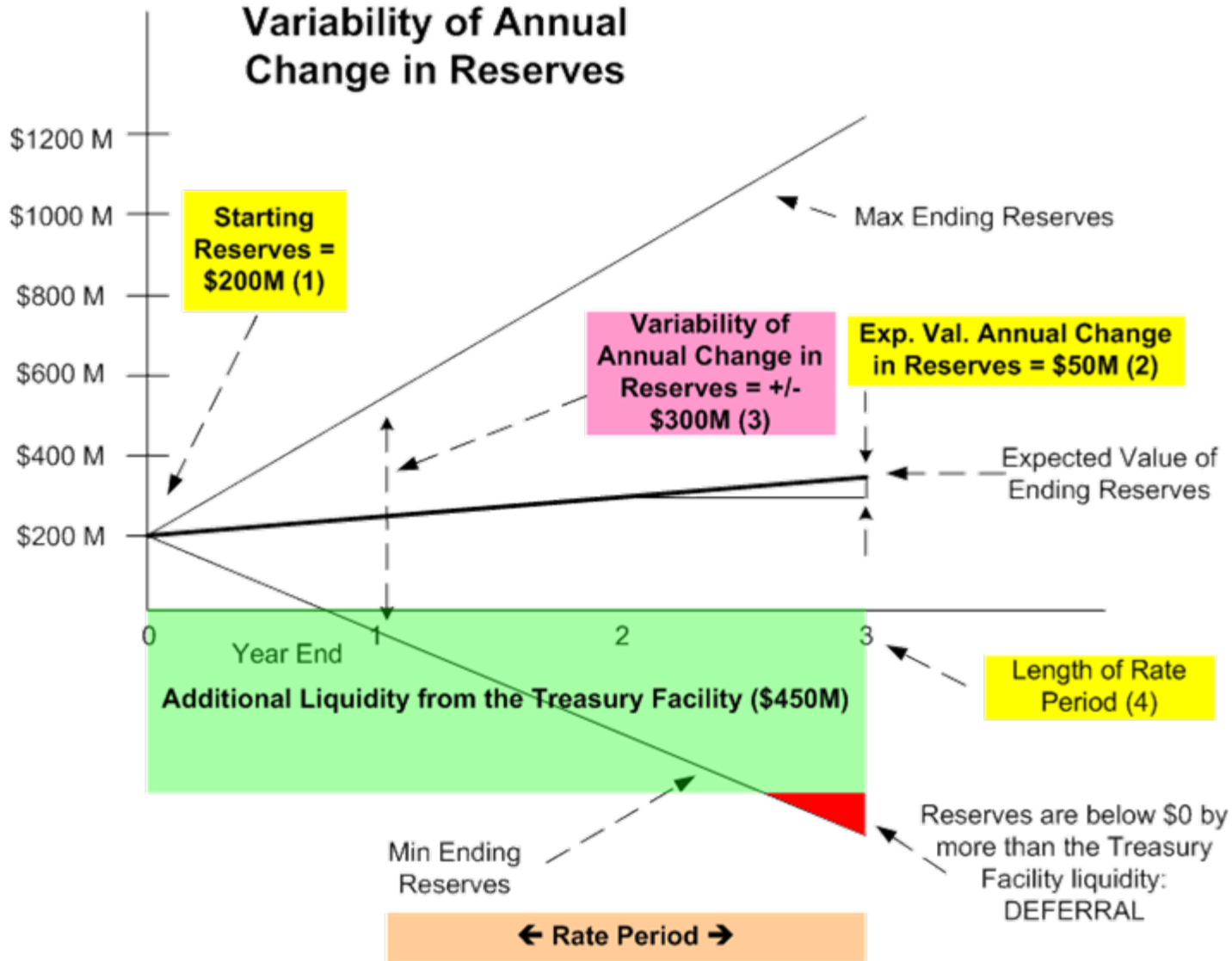
The distribution is shifted higher; the shape is unchanged.  
The red deferral zone is smaller.



### Graph 3: Greater Annual Change in Reserves



**Graph 4: Smaller Variability of Annual Change in Reserves**



## Summation Points

- The secondary revenue credit in rates for FY 2012-2013 was about \$615 million, un-Sliced. The current expectation is for this credit to decline by as much as \$200 million in the FY 2014-2015 rates.
- The projected level of Power Services financial reserves does not offer much room to mitigate this expected decline. Thus, there is not much that can be done to moderate increasing rate levels other than cost reductions to be addressed in the Integrated Program Review.
- While the future is uncertain, there will come a day when secondary revenues will rise about the currently expected levels.
- What is the best use of the revenue increases when (if) they occur? Is it dollar-for-dollar rate offsets? Is it storing some away to mitigate the next eventual decline (the dry-day fund)?
- These are the questions that we have looked at several times: Do we prefer lowest possible rates or more rate stability? Is BPA the best place to store away money? Should we transfer these functions to the individual customers (real-time crediting)? How much risk is too much for individual customers?

