

Regional Dialogue High Water Mark Determination for Tiered-Rate Methodology

August 8, 2007

High Water Marks Overview

- **Goal:** This presentation will outline the process for determining High Water Marks under Regional Dialogue as described in the Policy. Additional details will be developed in the tiered-rate methodology (TRM) rate case that will occur in FY 2008.
- **Background:** High Water Marks will set the maximum amount of lowest-cost Federal power that a BPA customer can purchase, limited by its net requirement. Assuming medium load growth, BPA currently projects that most customers' FY 2012 loads will be higher than their Contract HWM.

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Slide 2

High Water Marks Overview (cont.)

- BPA is establishing a tiered-rate methodology (TRM) that will create two rate groups for the power that BPA sells.
 - **Tier 1.** Tier 1 rates apply to the cost-based power generated from the available Federal Base System (FBS), including predefined limited augmentation, as will be determined in the TRM rate case. The amount available to each utility is defined by the utility's High Water Mark;
 - **Tier 2.** Tier 2 rates apply to power sold to meet load above a utility's High Water Mark, if the utility chooses to have BPA serve that load.
- **HWM ≠ Net Requirements.** The calculation of the HWM is a rate construct and is not the same as Net Requirements. Net Requirements will be a separate annual calculation and may be greater or less than a utility's High Water Mark.

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Slide 3

Context - High Water Marks Under Regional Dialogue and TRM

- There are three variations of High Water Marks (HWM) that evolve chronologically:
 - **The Forecasted Contract HWM** will be determined prior to contract signing in FY 2008. This forecast is a preliminary estimate based on available data. Parties should create flexible resource plans to meet estimated load in excess of their HWM in FY 2012, since the actual HWM amounts are determined later.
 - **The Contract HWM** will be used to establish the amount of FBS energy available to the customer during the contract period. The Contract HWM is based on FY 2010 load data and, therefore, will be calculated in FY 2011. The method of calculation will be addressed in following slides. The Contract HWM stays the same throughout the contract and would only be changed for rare events, such as an annexation of service territory by a public utility.
 - **The Rate-Period HWM** will determine the maximum amount of Tier 1-priced energy available to the utility during a given rate period. It is calculated prior to each rate period and reflects any changes in the firm energy available from the FBS resources and limited augmentation amounts defined for Tier 1 rates in the TRM.

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Getting to Contract HWMs

(Steps 1-3 in the Policy)

- **Step 1 – Methodology established:** Detailed methodology for the calculation of HWMs will be developed during the TRM rate case in FY 2008.
- **Step 2 – Forecasting HWMs:** Before BPA and the Publics execute Regional Dialogue contracts in FY 2008, BPA will forecast Contract HWMs for each public utility, using a forecasted FY 2010 load and the non-federal resources for FY 2010 from their Subscription (or Pre-subscription) contracts.
- **Step 3 – Calculating loads for the preliminary HWM:** The load data for the Forecast HWM will be replaced in FY 2011 with adjusted actual FY 2010 load data and reduced by the resource amounts established in the Subscription contract for FY 2010 as of Sept. 30, 2006. This will provide the load amount for a utility's *preliminary* HWM. The summed preliminary HWMs for all utilities is also calculated.



The Load Calculation for the Preliminary High Water Mark (Step 3 of the Policy)

Example for Step 2: Determining the Forecast Contract HWM

- *2007 Forecast of 2010 loads* 150 aMW
- Minus 2010 resources 20 aMW
- Forecast Contract HWM = 130 aMW

Example for Step 3: Determining the Preliminary HWM

- *Actual adjusted 2010 loads* 140 aMW
- Minus 2010 resources 20 aMW
- Load for the Preliminary HWM = 120 aMW

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A Closer Look at Step 3 Calculating Loads and Resources for the Preliminary HWM

- **Load Data:** Certain adjustments will be made to utilities' actual FY 2010 load data. The detailed methodologies will be developed in the TRM rate case. BPA invites public input and comments to assist in fully developing these adjustments:
 - Weather Normalization
 - Force Majeure
 - Other Adjustments (i.e. for data quality, methodology, load anomalies, etc.)
- New Large Single Loads will be deducted from a utility's total retail load for HWM purposes.

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Slide 7

Step 3: Calculating Loads and Resources
for the Preliminary HWM (con't.)

- **Resources:** The FY 2010 customer resources in the amounts currently established by the Subscription contracts (in the FY 2007 Exhibit C) will be subject to the following adjustments:
 - **Renewable resources** (about 3 aMW) - the output of new renewable resources added during the term of the Subscription contracts will not be included
 - **Centralia** (250 aMW) – the output of the Centralia plant will be removed for the calculation of HWMs for Seattle, Tacoma, Snohomish PUD, and Grays Harbor PUD with no (9c) decrement to their retail loads
 - **Grant PUD** (about 100 aMW) – Grant will be recalling hydro power from the Priest Rapids and Wanapum dams resulting in a redistribution of resources for Grant and the affected public utilities for HWM purposes
 - **Raft River annexation** (about 6 aMW) – the unspecified resources associated with Raft River's service territory annexation will not be included for HWM purposes
 - **PURPA resources** (less than 10 aMW) - will not be included for HWM purposes since the utilities have no control over the application or removal of the resources

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Slide 8

Establishing FBS Amounts for Preliminary HWMs (Step 4 of the Policy)

- **Step 4 – Determine Total FBS Available for HWMs:** To establish each utility's Contract HWM BPA will also determine the amount of power available from the FBS based on critical water year, including limited augmentation. The detailed methodology for determining this FBS amount will be established in the TRM rate case.
- **Limited Augmentation of the FBS:** If the projected FY 2012 FBS is not sufficient to meet the sum of the preliminary HWMs, BPA will augment the existing federal system by up to 300 aMW toward meeting the sum of the preliminary HWMs. However, the FBS will not be augmented to greater than 7400 aMW, except as explained on the following slide.



Specifics for Augmentation Limits

- The augmentation amount calculated in FY 2011 (300 aMW or less) would be available to meet loads eligible for Tier 1 rates, when needed, throughout the Regional Dialogue contract term.
- The method to determine the power available from the federal system and future adjustments will be established through the TRM rate case conducted during FY 2008.
- **Additional augmentation** - beyond that calculated in 2011 for Tier 1 loads, will be allowed for Tier-1 load growth due to new public utilities and specific load additions at the DOE Richland facility. This augmentation will not be limited by the 300 aMW and 7400 aMW caps.
 - Contract-period augmentation for DOE Richland is limited to 70 aMW.
 - Contract-period augmentation for new publics, including new tribal utilities, is limited to a total of 250 aMW.
 - Augmentation for new publics is limited to a total of 50 aMW per rate period.

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Determining the Preliminary HWM Adjusting for Available FBS (Step 5 in the Policy)

- **Step 5 – Adjustment of the Preliminary HWM for Available FBS:**
The individual preliminary Contract HWMs will be adjusted proportionately relative to the size of the Federal system with limited allowed augmentation.
- Example (continued from Slide 6):

Available FBS greater than total HWMs

Sum of preliminary HWM loads =	7000 aMW
Available FBS =	7100 aMW
HWMs increased by $7100 / 7000 =$	1.014 or 1.4%
Preliminary HWM = $120 \times 1.014 =$	121.7 aMW

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Adjusting for Available FBS (cont.)

Example: Available FBS less than total HWMs

- Sum of preliminary HWM loads = 7600 aMW
- Available FBS = 7100 aMW
- System augmentation capped at: 300 aMW
- Existing system w/ augmentation = 7400 aMW
- HWMs decreased by $7400 / 7600 = 0.973$ or 2.7%
- Preliminary HWM = $120 \times 0.973 = 116.8$ aMW



Rebalancing Preliminary HWMs for Conservation to Get Contract HWMs (Step 6 in the Policy)

- **Step 6 – Adjusting Preliminary HWMs for Conservation:**
BPA will further adjust the individual preliminary HWMs to account for the effect of each utility's conservation achievements from FY 2007 through FY 2010 on FY 2010 loads.
 - A utility's preliminary HWM will be increased by 1 aMW for each aMW of FY 2007 - 2010 savings through self-funded programs and .75 aMW for each aMW of FY 2007 - 2010 savings through BPA funding.
 - A utility's conservation-adjusted preliminary HWM will be calculated as % of the total conservation-adjusted preliminary HWMs.
 - Then the above % will be applied to the available FBS (w/ augmentation as established in Step 4) to get a utility's Contract HWM.
- *This will have the practical effect of increasing the HWM for utilities that achieve more conservation than average and reducing the HWM for the others.*

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Slide 13

Determining Contract HWMs (cont.)

Example: Conservation Adjustment to Get Contract HWM

Available FBS calculated in Step 4 = 30 aMW

	<u>Utility A</u>	<u>Utility B</u>	<u>Utility C</u>	
Unadjusted HWM	10aMW	10aMW	10aMW	
Conservation Achieved 2007-2010	3aMW	1aMW	0aMW	(1.33 avg)
Cons.-Adjusted HWM	13aMW	11aMW	10aMW	34aMW
Rebalancing Factor = $\frac{\text{Cons-Adj HWM}}{\Sigma \text{ Cons-Adj HWMs}}$	13/34	11/34	10/34	
Rebalancing Factor x 30aMW (the available FBS) = Contract HWM	11.5aMW	9.7aMW	8.8aMW	30aMW

Results: Each utility receives a HWM adjustment based on how its conservation achieved compares to the average conservation amount. Utility A's HWM is adjusted upward and Utilities B & C's are adjusted downward. The sum of the HWMs does not change.

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The Contract HWM – Post-Calculation

- The customer's Contract HWM becomes part of its contract and will not change over the life of the contract, except for:
 - Annexation of service territory from other public utilities
 - The Contract HWM of both utilities will be adjusted in proportion to the amount of load transferred with the annexation.
- The Contract HWM is also part of the calculation of the Rate-Period HWM, as shown on the following slide.
- The issues of transparency of the HWM process and tie-ins to Net Requirements and available FBS determination will be addressed in later workshops and developed in the TRM rate case.



The Rate-Period HWM

- **The Rate-Period HWM** is a tool for proportionally changing a customer's Contract HWM to reflect any changes in energy available from the FBS system from one rate period to the next (i.e. changes in fish-flow requirements or turbine efficiency)
 - Rate-Period HWM = $\frac{\text{Contract HWM}}{\Sigma \text{ Contract HWMs}} \times \text{FBS}$
 - The Rate-Period HWM is calculated for each rate period. For the initial rate period, the Contract HWM and the Rate-Period HWM will be the same.
- **New Publics** – The creation of new public utilities, including tribal utilities, will cause an increase in the sum of the Contract HWMs. However, since the FBS will be augmented in the amount of their HWM load (see Slide 10), the effect on Rate-Period HWMs will be negligible.
 - Load growth for Tier-1 priced power, due to the creation of new public utilities, will be capped at 50 aMW for a rate period and 250 aMW for the contract period.
 - Tier-1 load growth for new tribal utilities will be capped at 40 aMW aggregate, and is not subject to the rate-period limit of 50 aMW.

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Example – Rate-Period HWM

- Reduced Federal System
 - Original of summed HWMs = 7400 aMW
 - Federal System reduced by 740 aMWs (10%) in FY 2014
 - A customer with a Contract HWM of 120 aMW goes from 120 to 108 aMWs (10% reduction)

FY 2010 Load Data Adjustments

Developing the Details

Process Details – 2010 Load Data

- Step 3 of the Contract HWM calculation uses a utility's measured 2010 load data, as adjusted for several factors.
- The following slides will explore some of the necessary details that BPA will explore and work out for inclusion in the TRM rate case.
- BPA's goal in the TRM rate case is to establish process certainty. Some key areas to develop process details for adjusting the 2010 load data are:
 - Weather normalization
 - *Force Majeure* adjustments, and;
 - Adjustments for anomalous data



FY 2010 Load Data
Adj. (cont.)

Weather Normalization

- Adjust for anomalous weather-related effects on average demand in FY 2010.
 - Difficult to standardize because of differing climate zones in the Region and possibly within a utility's territory.
- A standard methodology will be developed in the TRM rate case.
 - The calculation methodology is somewhat standardized within the industry, however weighting the effect of weather on load data is more subjective.
 - Consider special approach for irrigation loads.
- Methodology used by utility consultants will need to match established methods.
 - Making process & methodology public will be considered for purposes of transparency.



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FY 2010 Load Data
Adj. (cont.)

Force Majeure Adjustment

- Load may be adjusted for *force majeure*-like events, those anomalous events beyond the control of a utility that affected its FY 2010 load to the point that the load data should be adjusted.
 - This is a separate concept from the contract provisions relating to Force Majeure events that effect the performance of the contract.
- There will be a high threshold. Little-to-no use of this adjustment is expected.
- Criteria and process for notification, claim, determination and adjustment will be developed in the TRM rate case.

FY 2010 Load Data
Adj. (cont.)

“Other” data adjustment

- If necessary, adjustments may be made to address anomalous increases in load.
- Need to determine criteria for notification, claim, determination and adjustment.
- Awareness of unforecasted load increases and unusual power consumption through FY 2010 will help ensure equitable HWMs.
 - Examples: Irrigation load not matching weather patterns; unusual retail pricing to high-load customers; overall load growth in excess of projections, etc.

