



Fact Sheet

December 2014

Rate Period High Water Mark

Overview

BPA's Tiered Rate Methodology, which has been in place since 2009, was designed to help send accurate price signals directly to utilities. Under this approach, each customer has a contract-defined right to purchase an amount of power at "Tier 1" rates, which represents the cost of BPA's existing system. The second tier represents customers' power needs that exceed BPA's system capability and will likely come at a higher cost. Tier 2 rates are set to cover the full cost of the additional power BPA buys to meet those additional loads. Using a clear rate structure that reflects the cost of different types of energy resources, BPA's customer utilities can easily weigh the cost of purchasing power against the cost of energy efficiency programs that encourage electricity savings.

The Rate Period High Water Mark, usually shortened to RHWM, is a key feature of the Tiered Rate Methodology. The RHWM defines the upper limit of the amount of power that a utility customer may purchase from BPA during a particular rate period at the lowest-cost, or Tier 1 rate.

The RHWM is important to BPA's customers for a number of reasons. If a customer's net power requirement is forecast to be higher than its RHWM, the amount above the RHWM must be served either by the customer through self-supply or through purchases from BPA at the Tier 2 rate. Called Above-RHWM load, this service obligation is met through purchases from the electricity market or through new generation resource acquisitions, often renewable. Additionally, the total amount of RHWM power eligible to be purchased by all BPA customers sets

the total amount of power over which BPA's costs are spread. Depending on the market price for electricity, lowering of all customers' RHWMs can put upward pressure on Tier 1 rates.

RHWMs are computed based on two factors. First, each rate period, BPA forecasts the expected firm generation from the Federal Columbia River Power System under 1937 water conditions. That particular year is used as a standard proxy for low water conditions, which produce less electricity. This establishes what is known as the RHWM Tier 1 System Capability. Second, customer-specific Contract High Water Marks, or CHWMs, were established based upon each customer's 2010 measured load. Generally speaking, each customer's CHWM divided by those of all customers determines each customer's share of the upcoming rate period's RHWM Tier 1 System Capability. The product of these two values is that customer's RHWM.

On a forecast basis, the maximum planned amount of power a customer may purchase under Tier 1 rates during each fiscal year of a rate period is equal to the RHWM for Load Following, Block and Slice/Block customers. No customer, regardless of which power product it buys, may purchase more than its net requirement.

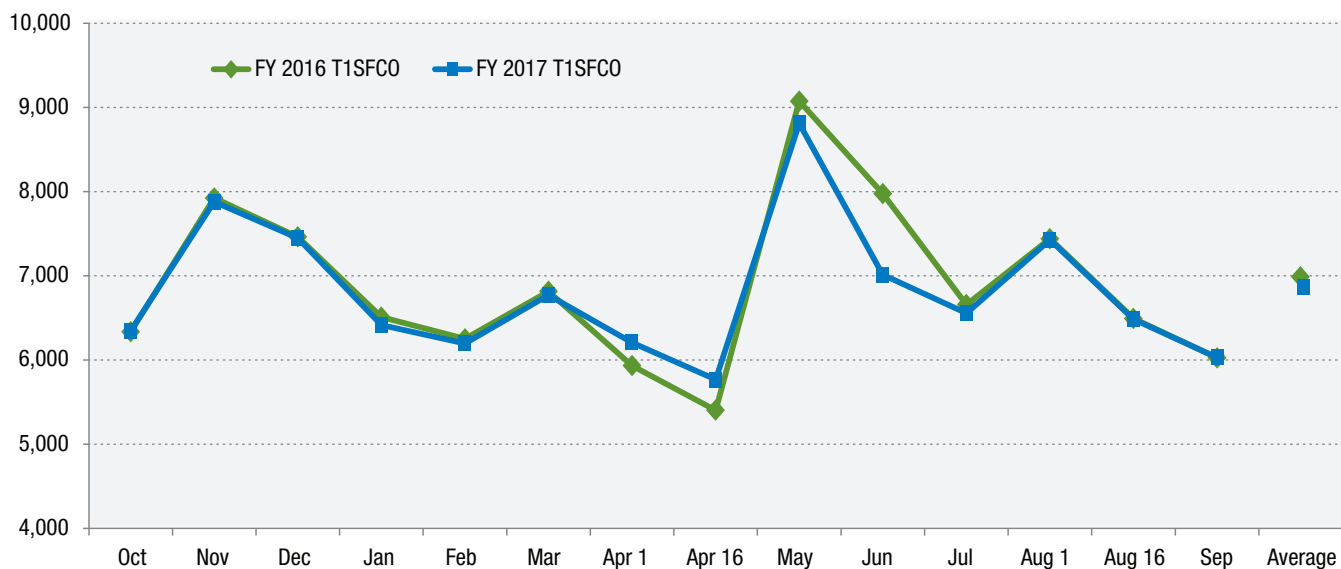
All of the energy values associated with these concepts are expressed in average megawatts, abbreviated as aMW.

BP-16

What does the RHWM calculation process produce? As stated above, at the conclusion of the RHWM process, each customer will know how much energy



Summary of monthly T1SFCO FY 2016–2017



BPA energy modelers often split the months of April and August into two periods to provide more detail during these transition months.
SOURCE FOR FY 2016–17: LT-LORA STUDY: S115-RC-20141016-105651

it can purchase at Tier 1 rates and how much energy it needs beyond what it can purchase at Tier 1. In loose terms, the process results in calculations of:

- How much of the Tier 1 system output each customer can purchase — the customer’s RHW. M.
- How much a customer’s total retail load exceeds its RHW. M — its Above-RHW. M load.
- A customer’s expected load for the upcoming two years.
- The firm output of the Tier 1 system, and any additional energy needed to meet customer net requirements.

For each rate period, BPA must make assumptions about how river operations to protect threatened and endangered fish are likely to evolve given the latest scientific information. BPA has updated the assumptions it made regarding how the biological opinion, or BiOp, that guides fish protection measures would be adaptively implemented during the BP-16 rate period; however, its initial assumptions resulted in a roughly 180 aMW reduction in Tier 1 energy. In response to customer concerns about

this reduction in forecast firm energy, BPA reconsidered its assumption on fish transport operations and made changes that would increase forecast FCRPS energy production, while still reflecting a reasonable forecast of river operations that would occur in extremely dry water conditions under the BiOp.

This increase in forecast production revised BPA’s estimate of total energy production, thereby reducing the amount of Tier 1 energy by 133 aMW, rather than 180 aMW. This pushed down customers’ RHW. M energy allocations by 1.87 percent for this rate period.

Historically, BPA’s estimates of firm hydro generation — the primary determinant of energy available for RHW. M allocation — have changed plus or minus 200 aMW for many reasons that are generally beyond BPA’s control. These include: changes in regional load forecasts and revisions to Canadian dam operations; changes in operations for fish; updates to flood control rule curves; and updates in Pacific Northwest Coordination Agreement planning data. These changes will continue to occur in studies for future rate cases.