Issue 4: Slice True-Up of Unused RHWM Credit and All Other Costs When the Sum of TOCAs is Less Than 100%

Issue: An inequity has been identified with regard to the Slice True-Up when the sum of customer TOCAs is less than 100%. The sum of TOCAs will be less than 100% when customers have Unused RHWM due to the TRM-defined TOCA calculation: [minimum of Forecast Net Requirement or RHWM] divided by the sum of RHWMs. This inequity occurs because a TOCA is used for allocating costs/credits but does not necessary represent the percentage of costs/credits allocated. The costs/credits allocated through the Composite Customer Charge is adjusted by a factor of 100% divided by the sum of the TOCAs (e.g., 100% ÷ 95% = 1.053) to ensure full recovery of Power Services' costs/credits. The percentage of costs/credits allocated to a customer will be greater than its TOCA when the sum of all the TOCAs is less than 100%.

Possible Solutions: Two possible solutions have been identified to solve this inequity.

Solution A: revise the Slice True-Up Adjustment when the sum of the TOCAs used in the final rate studies is less than 100%. For example, the Slice True-Up Adjustment would be adjusted by a factor of 100% divided by the sum of the rate case TOCAs (e.g., 100% ÷ 95% = 1.053). The Slice True-Up Adjustment would then be multiplied by each customer's Slice Percentage to calculate its Slice True-Up Adjustment Charge. Solution A would be equitable on a forecast basis since it would allocate the Slice True-Up Adjustment (actual costs and credits difference from forecast costs and credits) to Slice customers in the same manner as they paid for the costs and credits. However, the sum of rate case forecast TOCAs can be different than the sum of actual TOCAs. The sum of actual TOCAs will change because 1) an annual Net Requirement is determined for Slice/Block customers after the final rates are set and for each year in the rate period; and 2) a Load Following customer's TOCA is effectively increased or decreased at the end of each fiscal year if the Load Shaping True-up is applied.

Solution B: correct for not only cost/credit forecast error, but also allocation error. Solution B would adjust the Slice True-Up Adjustment based on the actual effective sum of TOCAs known at the end of each year, just prior to the Slice True-Up. Unfortunately, implementing Solution B logically leads to a second TRM change. The second TRM change would be to make the Unused RHWM line item applicable to true-up in all situations because an adjustment to the Slice True-Up Adjustment based on the sum of actual TOCAs implies an equally sized forecast error in the Unused RHWM line item in the Composite Cost Pool. The TRM currently states that Unused RHWM is only subject to the Slice True-Up when forecast error is the result of a change in Slice percentage. If Solution B were selected and the TRM changed to reflect a True-Up of Unused RHWM [Solution B+], a proper application of the Slice True-Up would be on the net cost or credit of forecast error and not the gross cost or credit.

Mathematical Example: This example assumes TOCA error is the result of Non-Slice TOCA changes after rates are set. Assumed value of Unused RHWM is $54.72/MWh or $17.17/MWh in net benefit. A 1% change in TOCA implies a load forecast error of 70aMW.

The following table shows the total Slice True-Up Adjustment Charges for both a $100 million cost increase (or credit decrease) and a $100 million cost decrease (or credit increase).

Sum of TOCA Forecast Error	[As Is] TOCA no Unused True-up +$100mm	[Solution A] TOCA/RateCaseSumTOCA no Unused True-up +$100mm	[Solution B] TOCA/Actual SumTOCA no Unused True-up +$100mm	[Solution B+] TOCA/ActualSumTOCA with Net Cost Unused True-up +$100mm	[As Is] TOCA no Unused True-up ($100)mm	[Solution A] TOCA/RateCaseSumTOCA no Unused True-up ($100)mm	[Solution B] TOCA/Actual SumTOCA no Unused True-up ($100)mm	[Solution B+] TOCA/Actual SumTOCA with Net Cost Unused True-up ($100)mm
-5%	$ 27,027	$ 28,441	$ 30,021	$ 14,218	$ (27,027)	$ (28,441)	$ (30,021)	$ (45,824)
-4%	$ 27,027	$ 28,441	$ 29,691	$ 17,188	$ (27,027)	$ (28,441)	$ (29,691)	$ (42,195)
-3%	$ 27,027	$ 28,441	$ 29,369	$ 20,093	$ (27,027)	$ (28,441)	$ (29,369)	$ (38,644)
-2%	$ 27,027	$ 28,441	$ 29,053	$ 22,936	$ (27,027)	$ (28,441)	$ (29,053)	$ (35,170)
-1%	$ 27,027	$ 28,441	$ 28,744	$ 25,718	$ (27,027)	$ (28,441)	$ (28,744)	$ (31,770)
0%	$ 27,027	$ 28,441	$ 28,441	$ 28,441	$ (27,027)	$ (28,441)	$ (28,441)	$ (28,441)
1%	$ 27,027	$ 28,441	$ 28,145	$ 31,108	$ (27,027)	$ (28,441)	$ (28,145)	$ (25,182)
2%	$ 27,027	$ 28,441	$ 27,855	$ 33,720	$ (27,027)	$ (28,441)	$ (27,855)	$ (21,990)
3%	$ 27,027	$ 28,441	$ 27,571	$ 36,279	$ (27,027)	$ (28,441)	$ (27,571)	$ (18,863)
4%	$ 27,027	$ 28,441	$ 27,293	$ 38,786	$ (27,027)	$ (28,441)	$ (27,293)	$ (15,799)
5%	$ 27,027	$ 28,441	$ 27,020	$ 41,243	$ (27,027)	$ (28,441)	$ (27,020)	$ (12,797)
Deltas from [Solution B+] or [Truth & Beauty]								
-5%	$ 12,809	$ 14,223	$ 15,803		$ 18,797	$ 17,382	$ 15,803	
-4%	$ 9,839	$ 11,254	$ 12,503		$ 15,168	$ 13,753	$ 12,503	
-3%	$ 6,934	$ 8,348	$ 9,276		$ 11,617	$ 10,203	$ 9,276	
-2%	$ 4,091	$ 5,506	$ 6,117		$ 8,143	$ 6,729	$ 6,117	
-1%	$ 1,309	$ 2,724	$ 3,026		$ 4,743	$ 3,329	$ 3,026	
0%	$ (1,414)	$ -	$ -		$ 1,414	$ -	$ -	
1%	$ (4,081)	$ (2,667)	$ (2,963)		$ (1,845)	$ (3,259)	$ (2,963)	
2%	$ (6,693)	$ (5,279)	$ (5,865)		$ (5,037)	$ (6,451)	$ (5,865)	
3%	$ (9,252)	$ (7,837)	$ (8,708)		$ (8,164)	$ (9,578)	$ (8,708)	
4%	$ (11,759)	$ (10,344)	$ (11,493)		$ (11,228)	$ (12,642)	$ (11,493)	
5%	$ (14,216)	$ (12,801)	$ (14,223)		$ (14,230)	$ (15,645)	$ (14,223)	

As demonstrated above, if forecast TOCAs equal actual TOCA (0% line), the Slice True-Up will recover/repay the appropriate cost/credit differential to Slice purchasers under either Solution A or Solution B. However, the introduction of TOCA forecast error causes the Slice True-Up to diverge from a more precisely correct allocation of costs. In addition to correcting for cost/credit differentials, Solutions B and B+ would correct for this allocation error also whereas Solution A would correct for just the cost/credit differentials.

The forecast TOCA error will be a known amount after each contract year. For Slice/Block purchasers, the Annual Net Requirements determination will establish each customer's net requirement and TOCA before the contract year. For Load Following purchasers, the Load Shaping True-Up determination will compute each customer's actual Tier 1 load and its actual TOCA can be determined from that calculation. Thus, no additional computations or processes would be required by Solution B+.

Issue 6: Improvement in the Calculation of Unused RHWM Credit

Issue: The use of RP Augmentation in the accounting of Unused RHWM introduces unnecessary complications and the calculation of the Unused RHWM Credit can be simplified without altering the end result.

Explanation: The TRM captures the benefits of Unused RHWM (reduced augmentation and/or increased firm power available for sale into the market) through two separate line items on the TRM costing table [Table 2 Allocated Tiered Cost Table]:

Line 27, Tier 1 Augmentation Power Purchases
Line 116, Firm Surplus and Secondary Credit (from Unused RHWM).

Tier 1 Augmentation Power Purchases (Line item 27) captures the costs associated with Augmentation purchases for the rate period. Firm Surplus and Secondary Credit (from Unused RHWM) (line item 116) captures the credit (or cost) associated with the sale of Unused RHWM power sold at market rates. Under the TRM, Unused RHWM is first used to reduce Tier 1 Augmentation Power Purchases. However, Unused RHWM is not equivalent in shape or value to RHWM Augmentation since Unused RHWM consists of RHWM Augmentation, Tier 1 System Firm Critical Output, and Secondary, while augmentation is defined to be a flat annual block of power. RHWM Augmentation has a value of a flat annual block of power; Firm Surplus and Secondary have a value of a shaped amount of annual power. It is because of this value difference that the Firm Surplus and Secondary Credit (line 116) must undergo a complicated ratemaking treatment. To the extent the market values a firm flat block of power more than an equally sized amount of power delivered in the shape of the Federal system, Line 116 would be need to be a negative credit, which is both unnecessarily confusing and counterintuitive.

TRM Details: When computing RHWMs in the RHWM Process, BPA will add RHWM Augmentation to Tier 1 System Firm Critical Output (T1SFCO) until either the sum equals the total of all Contract High Water Marks (CHWM) or the Augmentation Limit is reached [TRM Defs. page vi, lines 18-21; §3.2.2.1]. The sum of T1SFCO plus RHWM Augmentation equals RHWM Tier 1 System Capability (RT1SC) [TRM Defs. page xix, lines 13-14]. For ratesetting purposes, RHWM Augmentation is used to determine a portion of the amount of firm requirements power available to Slice purchasers [TRM §3.5]. RHWM Augmentation is a Slice resource, a portion of which will be delivered to Slice purchasers in a flat annual shape [TRM §3.5].

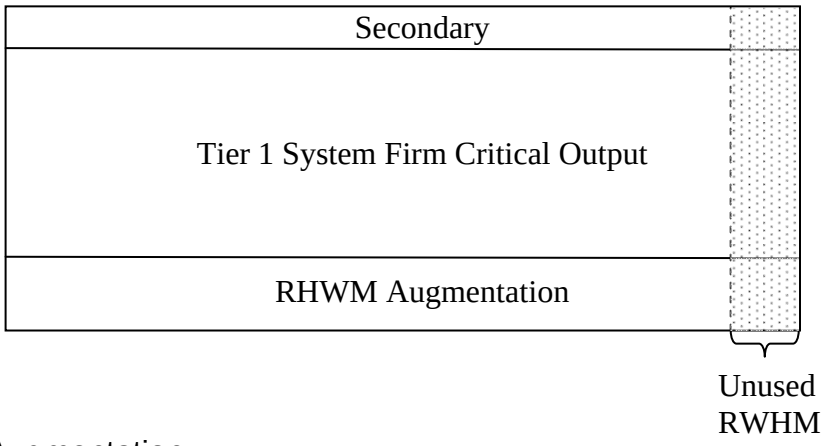
In the process of setting rates, BPA will forecast the net requirements of preference customers [TRM Defs. page xiii, lines 20-21; §5.1.1]. The Forecast Net Requirements will be informed by customers' Above-RHWM Load and the customers' elections regarding service responsibility for this load [TRM §4.3.1]. To the extent that the Forecast Net Requirement of any customer is expected to be less than that customer's RHWM, Unused RHWM will be forecast [TRM §3.2.2.2].

When setting rates and, in recognition that BPA need not purchase power for loads that are not expected to occur, Unused RHWM is first used to reduce RHWM Augmentation [TRM §3.2.2.2]. This reduced amount of RHWM Augmentation is Rate Period (RP) Augmentation [TRM Defs. page xix, lines 15-17]. RP Augmentation, not RHWM Augmentation, is used in computing the augmentation costs included on Line 27 [TRM §3.2.2.3].

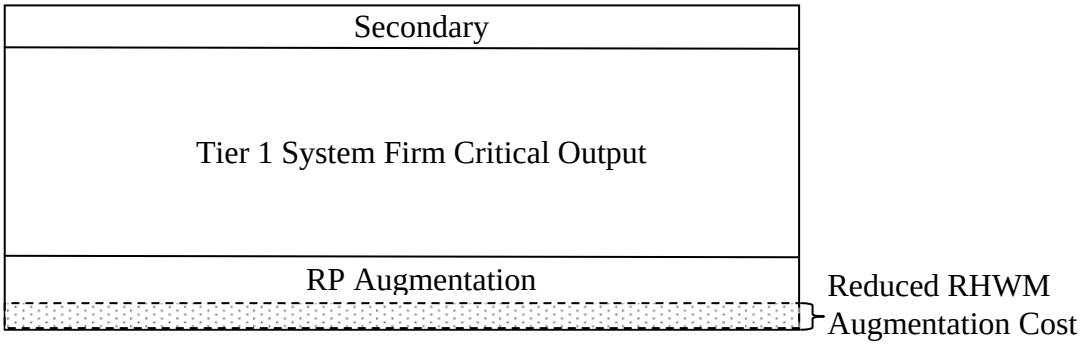
Proposed Solution: Remove the term RP Augmentation from the TRM and in calculations and use line 27 to reflect the full cost of RHWM Augmentation and reflect the full value of Unused RHWM through line 116.

Graphical Representation of Unused RHWM and RP Augmentation: The value of any Unused RHWM is different than the cost of an equivalent amount of augmentation. Unused RHWM is comprised of a percentage share of RHWM Augmentation, T1SFCO, and secondary power (a column of the system). Reduced augmentation, captured by the difference between RHWM Augmentation and RP Augmentation, is comprised of a single flat annual block of power (a row of the system). While the areas of the two shaded regions below are equivalent, the shape and thereby the value is clearly not the same.

Unused RHWM:



RP Augmentation:



Mathematical Representation of TRM Accounting of Unused RHWM: To illustrate how Line 116 will be determined in setting rates if the TRM is unchanged, assume that each MWh of augmentation costs $60 and each MWh of T1SFCO or secondary can be sold for $40. If

RHWM Augmentation is 300 aMW, T1SFCO is 6900 aMW, and secondary is 2500 aMW, each MWh of Unused RHWM is valued at $40.83 plus $13.89 in secondary for a total value of $54.72. (These calculations are shown in the following table.) However, by using Unused RHWM to reduce augmentation costs first, rates will be reduced by $60 for each MWh of Unused RHWM. If rates were established using RHWM Augmentation, the credit for each MWh of Unused RHWM would be $54.72, the weighted average price. Because rates are reduced by $60 for each MWh, the Line 116 credit needs to reflect the difference in value, and will be –$5.28 for each MWh, a negative credit. This is the price that will be used to calculate the credit reflected on Line 116.

Computing the Value of 1 MWh of Forecast Unused RHWM

	System MWh	Market Value	Unused RHWM	Value of Unused
T1SFCO	60,444,000	$40	0.95833	$38.33
RHWM Aug	2,628,000	$60	0.04167	$2.50
Firm Total	63,072,000		1.00	$40.83
Secondary	21,900,000	$40	0,34722	$13.89
Total	84,972,000		1.35	$54.72
			saved augmentation expense	$60.00
			Unused RHWM credit	–$5.28

Mathematical Representation of Proposed Clarifying Change to the TRM Accounting of Unused RHWM Accounting of Unused RHWM: The calculation and explanation of the Unused RHWM credit could be simplified if the TRM is changed to replace RP Augmentation with RHWM Augmentation when calculating the cost of augmentation. If this change were to be made, then the unneeded augmentation would be reflected as the full value credit (based on $54.72 per MWh in the example above) on Line 116. The table directly above changed to remove RP Augmentation:

Computing the Value of 1 MWh of Forecast Unused RHWM

	System MWh	Market Value	Unused RHWM	Value of Unused
T1SFCO	60,444,000	$40	0.95833	$38.33
RHWM Aug	2,628,000	$60	0.04167	$2.50
Firm Total	63,072,000		1.00	$40.83
Secondary	21,900,000	$40	0,34722	$13.89
Total	84,972,000		1.35	$54.72
			saved augmentation expense	$0.00
			Unused RHWM credit	$54.72

As can be seen in comparing the two results, the sums of the saved augmentation expenses and Unused RHWM credits in the two cases are equal.