

Tiered Rate Methodology Rate Case

DIRECT TESTIMONY

May 2008

RATE DESIGN:

Fisher, Bliven, Bolden, Chalker, Lee

TRM-12-E-BPA-06



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INDEX

TESTIMONY of

DANIEL H. FISHER, RAYMOND D. BLIVEN, GERARD C. BOLDEN,

ANNICK E. CHALIER, and CARIE E. LEE

Witnesses for Bonneville Power Administration

SUBJECT: RATE DESIGN

	Page
Section 1: Introduction	1
Section 2: Tier 1 Rate Design.....	2
Section 2.1: Overview	2
Section 2.2: Customer Charges	5
Section 2.3: Load Shaping Charge	14
Section 2.4: Load Shaping Charge True-up	18
Section 2.5: Demand Charge	20
Section 3: Tier 2 Rate Design.....	27
Section 3.1: Overview	27
Section 3.2: Tier 2 Billing Determinants.....	29
Section 3.3: Tier 2 Cost Basis	32
Section 3.4: Remarketing of Tier 2 Rate-Priced Amounts	35
Section 3.5: Tier 2 Vintage Rate Alternatives	35
Section 4: Shared Rate Plan.....	36
Section 5: Resource Support Services	38
Section 5.1: Overview	38
Section 5.2: Diurnal Flattening Service.....	39
Section 5.3: Resource Shaping Charge.....	48
Section 5.4: Resource Shaping Charge Adjustment	50
Section 5.5: Forced Outage Reserves	51
Section 5.6: Secondary Crediting Service	52
Attachment A	A-1

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1 TESTIMONY of

2 DANIEL H. FISHER, RAYMOND D. BLIVEN, GERARD C. BOLDEN,

3 ANNICK E. CHALIER, and CARIE E. LEE

4
5 Witnesses for Bonneville Power Administration

6 **SUBJECT: RATE DESIGN**

7 **Section 1: Introduction**

8 *Q. Please state your names and qualifications.*

9 A. My name is Daniel H. Fisher, and my qualifications are contained in TRM-12-Q-
10 BPA-06.

11 A. My name is Raymond D. Bliven, and my qualifications are contained in TRM-12-Q-
12 BPA-01.

13 A. My name is Gerard C. Bolden, and my qualifications are contained in TRM-12-Q-
14 BPA-02.

15 A. My name is Annick E. Chalier, and my qualifications are contained in TRM-12-Q-
16 BPA-03.

17 A. My name is Carie E. Lee, and my qualifications are contained in TRM-12-Q-BPA-11.

18 *Q. What is the purpose of your testimony?*

19 A. Our testimony discusses the Priority Firm Power (PF) rate design as proposed in the
20 Tiered Rate Methodology (TRM), TRM-12-E-BPA-01. This testimony makes use of
21 defined terms in the TRM; see TRM pages v-xvii.

22 *Q. How is your testimony organized?*

23 A. Section 1 is this introduction. Section 2 discusses Tier 1 rate design. Section 3 discusses
24 Tier 2 rate design. Section 4 discusses the Shared Rate Plan. Section 5 discusses
25 Resource Support Services (RSS).

TRM-12-E-BPA-06

Page 1

Witnesses: Daniel H. Fisher, Raymond D. Bliven, Gerard C. Bolden,
Annick E. Chalier, and Carie E. Lee

1 Q. Which sales of Federal power would be subject to tiered rates established in accordance
2 with the TRM?

3 A. Sales made pursuant to section 5(b)(1) of the Northwest Power Act to public body and
4 cooperative utility customers and Federal agency customers (collectively known as
5 “Publics”) of BPA would be subject to tiered rates established in accordance with the
6 TRM. BPA will be offering long-term Regional Dialogue power sales contracts to the
7 Publics that will provide for the application of PF tiered rates to the power sold by BPA
8 under such contracts. In this testimony, we describe the tiered rates that would be applied
9 to those sales.

10
11 **Section 2: Tier 1 Rate Design**

12 **Section 2.1: Overview**

13 Q. What are the main components of the proposed Tier 1 rate design?

14 A. The Tier 1 rate structure consists of three basic elements—Customer Charges, a Demand
15 Charge, and a Load Shaping Charge

16 Q. How would the Customer Charges generally operate under the proposed rate design?

17 A. There would be three Customer Charge rates. Two Customer Charge rates would apply
18 to Load Following and Block customers, while all three Customer Charge rates would
19 apply to Slice/Block customers. These Customer Charge rates would work much like the
20 Slice rate does today, except that Load Following and Block purchasers would not have
21 an annual true-up. For Load Following and Block customers, there would be a specific
22 Non-Slice Customer Rate plus a Composite Customer Rate. For Slice/Block customers,
23 there would be a specific Slice Customer Rate (for the Slice portion of the Slice/Block
24 purchase), a specific Non-Slice Customer Rate (for the Block portion of the Slice/Block

1 purchase), and the same Composite Customer Rate as Load Following and Block
2 customers pay.

3 For Load Following and Block customers, each customer's Rate Period High
4 Water Mark (RHW) would be divided by the sum of all RHWs to establish the
5 Billing Determinant for the Customer Charges. See Stene *et al.*, TRM-12-E-BPA-05, for
6 a discussion of RHW. The result of this calculation would be each customer's Tier 1
7 Cost Allocator (TOCA). The exception to this Billing Determinant calculation would be
8 if a customer's Forecast Net Requirement is less than its RHW; then the Forecast Net
9 Requirement would be used as the Billing Determinant.

10 Unlike Load Following and Block customers, Slice/Block customers would have
11 three TOCAs. The first TOCA would be calculated using the same method used for Load
12 Following and Block customers and would be the Billing Determinant that is applied to
13 the Composite Customer Rate. A second TOCA, referred to as the Non-Slice TOCA,
14 would be the Billing Determinant that is applied to the Non-Slice Customer Rate. The
15 third TOCA, referred to as the Slice TOCA or Slice Percentage, would be the Billing
16 Determinant that is applied to the Slice Customer Rate. See TRM section 5.1.6

17 Q. *How would the Load Shaping Charge generally operate under the proposed rate design?*

18 A. We are proposing to replace the energy rates and load variance rate used in the WP-07
19 rate design with a Load Shaping Charge. The WP-07 rate design uses 24 energy rates for
20 each year; we are proposing to replace those energy rates with 24 Load Shaping Rates.
21 In the WP-07 rate design, BPA forecasts market prices for the 24 monthly/diurnal periods
22 of the year and then scales those forecast prices downward until PF revenues equal costs
23 allocated to PF. In the future, the scaling process would not be used; the Load Shaping
24 Rate would be set at forecast market prices.

1 The Billing Determinant for the Load Shaping Charge would be much different
2 from the Billing Determinant in the WP-07 energy rates. In the WP-07 rate design, the
3 energy rates are applied to the total kilowatthours purchased during each monthly/diurnal
4 period. For the Load Shaping Charge, the rates would be applied to a smaller amount of
5 energy during each of the 24 monthly/diurnal periods. BPA would establish the expected
6 kilowatthours of generation from the Tier 1 System Resources. Then the forecast amount
7 each customer would be allowed to purchase at Tier 1 Rates would be determined by
8 multiplying the expected firm critical output of Tier 1 System Resources by the ratio of
9 the customer's RHW to the total of all customers' RHWs. The exception to this
10 calculation would be if a customer's Forecast Net Requirement was less than its RHW,
11 in which case the Forecast Net Requirement would be used. The product would be
12 subtracted from the customer's actual Tier 1 energy purchase for that period to establish
13 the Load Shaping Charge Billing Determinant.

14 Load Shaping Billing Determinants would be both positive and negative. If a
15 customer's load is exactly what was forecast, the total of the Billing Determinants would
16 be zero for the year. However, even if the total of the Billing Determinants was zero, the
17 total Load Shaping Charges for the year may not be zero. The total annual charges would
18 depend on which periods the customer would receive a charge and the rates for those
19 periods compared to the rates when the customer would receive a credit.

20 Q. *How would the Demand Charge generally operate under the proposed rate design?*

21 A. We propose significant changes to the Demand Rate and Demand Billing Determinant
22 relative to WP-07 rates. The Demand Rate would be considerably higher than the WP-07
23 Demand Rates but would apply to much smaller Billing Determinants.

24 The Demand Rate would be set based on the fixed costs of the most common
25 generation technology for supplying capacity, which we currently anticipate to be a

1 single cycle combustion turbine. However, the actual determination of the appropriate
2 technology to supply capacity would be a subject of each rate case implementing the
3 TRM. We have proposed that this fixed cost-based rate be shaped through the year in a
4 manner similar to WP-07 Demand Rates.

5 In WP-07, the Demand Billing Determinant is a customer's hourly load on BPA
6 on the hour of BPA's Generation System Peak for each month. The TRM-proposed
7 Demand Billing Determinant would be the customer's maximum hourly load on BPA
8 during Heavy Load Hours minus the average load on BPA during all Heavy Load Hours
9 for the month, minus a grandfathered amount of Demand (called the Contract Demand
10 Quantity or CDQ). The CDQ would be based on each customer's historical Heavy Load
11 Hour load factor applied to the customer's adjusted Measured FY 2010 Load. These
12 CDQs for each month would be specified in the customer's contract.

13 14 **Section 2.2: Customer Charges**

15 *Q. How does the proposed Tier 1 rate design differ from BPA's current rate design?*

16 *A.* For current customers purchasing products other than the Slice product, BPA's current
17 rate design is based on monthly Heavy Load Hour and Light Load Hour energy rates
18 (mills per kilowatthour). We are proposing to replace this design with one that is
19 composed of three Customer Charges and a Load Shaping Charge that are based upon a
20 customer's percentage share of BPA's total costs rather than a per-kilowatthour charge.
21 The current rate design energy charges recover almost 90 percent of the PF revenue
22 requirement. The proposed rate design customer charges would recover about 95 percent
23 of the PF revenue requirement.

1 Q. *How would the three Customer Charges generally operate under the proposed rate*
2 *design?*

3 A. The three Customer Charges would each be a dollar-per-one percent rate, much like the
4 current Slice rate. As indicated above, these Customer Charges would collect the
5 majority of BPA's Tier 1 Costs and would be based on each customer's percentage share
6 of the applicable Tier 1 Cost Pools. The customer's percentage share would be based
7 upon the customer's TOCA. See TRM section 5.1.2.

8 Q. *Why have you proposed three separate Customer Charges?*

9 A. We propose three Customer Charges to allocate costs and credits among the various
10 products (Load Following, Block, and Slice/Block) in a manner consistent with the cost
11 allocation principles. See TRM section 2. Most of BPA's costs are the responsibility of
12 all PF customers. However, some costs are proposed to be entirely recovered from either
13 Block and Load Following customers and some entirely from Slice customers. The three
14 charges would allow all of BPA's costs recovered through Tier 1 rate to be recovered
15 from the appropriate groups of customers.

16 Q. *What are the three proposed Customer Charges?*

17 A. The three proposed Customer Charges are the 1) Composite Customer Charge; 2) Non-
18 Slice Customer Charge; and 3) Slice Customer Charge. The Composite Customer
19 Charge would recover the costs in the Composite Cost Pool and would be charged to all
20 customers taking service at Tier 1 Rates. The Non-Slice Customer Charge would recover
21 the costs of the Non-Slice Cost Pool and would be charged to customers purchasing Load
22 Following and Block products, including the Block portion of the Slice/Block product.
23 The Slice Customer Charge would recover the costs in the Slice Cost Pool and would be
24 charged to customers taking the Slice/Block product for the Slice portion.

1 Q. *What are the proposed Billing Determinants for these Customer Charges?*

2 A. The customer's TOCA would be the Billing Determinant for the two Customer Charges
3 applicable to Load Following and Block product purchases. For Slice/Block product
4 purchases, the Billing Determinants would be the customer's TOCA for the Composite
5 Customer Charge, the customer's Slice Percentage (or Slice TOCA) for the Slice
6 Customer Charge applied to the Slice product purchase, and the customer's Non-Slice
7 TOCA for the Non-Slice Customer Charge applied to the Block product purchase. See
8 TRM section 5.1.3.

9 Q. *How would BPA calculate a customer's TOCA?*

10 A. Each customer's TOCA would be based on the lesser of the customer's RHW or the
11 customer's Forecast Net Requirement and would be calculated as a percentage of the
12 total RHWs for all customers.

13 Q. *When would BPA calculate the Customer Charge Billing Determinants for each*
14 *customer?*

15 A. BPA would calculate and forecast an annual TOCA for each customer during the relevant
16 rate case. BPA would set Customer Charge rates based on these forecasts.

17 Q. *How would these Customer Charges be different from the rate that the Slice customer*
18 *pays today?*

19 A. In the TRM period, there would be two rates (Composite Customer Rate and Slice
20 Customer Rate) that the Slice/Block customers would pay for the Slice portion of their
21 contract, compared to one rate (Slice rate) in the current Rate Period.

22 Q. *If there would be two rates applied to the Slice portion of the Slice/Block contract instead*
23 *of one rate, would Slice customers pay more under the TRM than they do today?*

24 A. All other things being equal, no. Due to some changes in the amount and type of costs
25 and credits that would be allocated to the new Slice product, it is possible that the

1 combination of the Composite Customer Rate and the Slice Customer Rate could be
2 higher for Slice customers than the rate for the existing Slice product. However, that
3 would be a result of changes to cost allocations rather than rate design. If cost allocations
4 did not change, the two Customer Charges (based on the Composite Customer Rate and
5 the Slice Customer Rate) would charge the Slice customers the same set of costs that are
6 charged to them under the Slice rate for the existing Slice product. While some of the
7 line items would be renamed and the organization of the various Cost Pools would be
8 different than the existing Slice True-up and Costing Table, the fundamental basis for the
9 allocation of costs between Slice and non-Slice products is not proposed to change.

10 Q. *Please explain the basis of the Composite Customer Cost Pool and Slice Customer Cost*
11 *Pool and how it would apply to Slice customers.*

12 A. The Composite Customer Cost Pool in combination with the Slice Customer Cost Pool
13 would contain virtually the same set of costs and credits that were included in the existing
14 Slice revenue requirement. The Composite Cost Pool would include costs and credits
15 that apply to all customers, both Slice and non-Slice. The Slice Customer Cost Pool
16 would contain the costs and credits that are applicable to only the Slice product. For the
17 most part, these latter expenses are Slice Implementation Expenses that only the
18 Slice/Block customers are responsible for paying. The Slice Cost Pool would be the
19 basis for the Slice Customer Rate.

20 Q. *How would the Non-Slice Customer Rate be applied to Slice/Block customers?*

21 A, Expenses and credits that do not apply to the Slice portion of the Slice/Block product
22 would be included in the Non-Slice Cost Pool. Slice/Block customers would pay for
23 such expenses on the Block portion of their purchase. For example, transmission
24 expenses would not be applicable to the Slice product, except for those transmission
25 expenses associated with *Designated BPA Contract Obligations* (see TRM Table 3.1,

beginning at line 70). These transmission expenses not applicable to the Slice portion of the Slice/Block product would be estimated and allocated to the Non-Slice Cost Pool, which would be the basis for the Non-Slice Customer Rate that would be applied to the Block portion of the Slice/Block purchase.

Q. *Would the Slice customers be responsible for 100 percent of the Slice Implementation expenses?*

A. Yes.

Q. *How would the Slice Customer Rate be calculated?*

A. The Slice Customer Rate would be the quotient of forecast Slice Implementation Expenses and the sum of Slice Customer Charge Billing Determinants. Rather than forecasting an amount for Slice Implementation Expenses, BPA may choose to recover actual costs entirely through the Slice true-up. In such a case, after each Fiscal Year, BPA would account for the actual costs that were accrued for Slice Implementation Expenses and calculate how much of this expense each Slice/Block customer would pay BPA through its Slice True-Up Adjustment charge. This cost recovery method is exactly the same as the method used in the existing Slice product for allocation of Slice Implementation Expenses.

Q. *Would it be possible for a Slice/Block Customer's TOCA to decrease?*

A. Yes. If BPA augmented Tier 1 System Resources for New Publics, the Customer's Slice TOCA would be decreased so that the Slice customer received the same amount of energy. The adjustment would ensure that the Slice customer received the same share of the firm critical output of Tier 1 System Resources that would occur before the Augmentation. Additionally, if an individual Slice/Block customer experienced a load loss, such that the load loss exceeded the amount of a customer's above-RHWM load, the Slice/Block customer's TOCAs would be adjusted to ensure that Slice/Block customer

1 did not receive more than its Net Requirement.

2 Q. *What would happen to the allocation of Slice Implementation Expenses if the Slice TOCA*
3 *for a customer decreased?*

4 A. If the Slice TOCA for a customer decreased, the allocation of Slice Implementation
5 Expenses for the Slice/Block customer group would change. The Slice Implementation
6 Expenses must be paid for entirely by Slice/Block customers. Therefore, if the percent of
7 Slice purchased decreased, the Slice Implementation Expenses would be reallocated
8 among the remaining Slice/Block customers. For example, assuming that the total Slice
9 percent purchased from BPA started at 25 percent, if one customer's Slice TOCA
10 decreased from 5 percent to 2 percent, and that was the only customer whose Slice TOCA
11 decreased, the total percentage of Slice purchased would now be 22 percent (25 percent
12 minus 3 percent). The Slice/Block customer whose percentage decreased would now pay
13 9.1 percent (2 percent divided by 22 percent equals 9.1 percent) of the Slice
14 Implementation Expenses. Accordingly, all other customers would pay a percentage of
15 the Slice Implementation Expenses that was derived by dividing their Slice percentage by
16 22 percent instead of the original 25 percent.

17 Q. *Other than a change in a Slice customer's Slice Percentage, could a Billing Determinant*
18 *be changed after rates take effect?*

19 A. Yes. A customer's TOCA could change during the Rate Period, but within-Rate Period
20 TOCA changes would not change the posted rates. The TOCA of a Slice/Block or Block
21 customer may be adjusted during the Rate Period if that customer's Net Requirement
22 determination resulted in a change in eligibility to purchase power at Tier 1 Rates
23 compared to the forecast in the RHW process. See TRM Section 5.1.2. By definition,
24 BPA serves the Net Requirement for Load Following customers, and therefore Load
25 Following customer TOCAs would not need to change for Net Requirement reasons

1 within the Rate Period. BPA may change a Load Following customer's TOCA prior to
2 each Fiscal Year, however, if unanticipated changes in a Load Following customer's load
3 would create excessive Load Shaping Charges (either a charge or a credit) that would
4 otherwise result in large end-of-year Load Shaping Charge true-up payments, either to
5 BPA or to the customer.

6 Q. *Is it possible to have two different TOCAs, one for each year of the Rate Period?*

7 A. Yes. A customer's TOCA is based on the lesser of its RHWL or Forecast Net
8 Requirement. If a customer's Forecast Net Requirement would be below its RHWL and
9 that customer is forecast to experience a change in load during the Rate Period, BPA
10 would calculate a different TOCA for each year of the Rate Period to reflect the forecast
11 below-RHWL load change.

12 Q. *How likely is it that the sum of annual TOCAs would be less than 100 percent?*

13 A. There is some probability that the sum of TOCAs would be less than 100 percent. This
14 would occur if any customer's Net Requirement did not grow after FY 2010, or a
15 customer had significant load loss beyond its ability to remove resources as consistent
16 with the 5(b)9(c) Policy.

17 Q. *If that did occur, how would it affect Slice/Block customers?*

18 A. If the sum of TOCAs is less than 100 percent, each Slice/Block customer would pay a
19 little more than its TOCA share of the Composite Cost Pool.

20 Q. *Please explain.*

21 A. Assume that the sum of the annual TOCAs is less than 100 percent; for example,
22 95 percent. Assume that a customer has a TOCA of 5 percent. When the sum of TOCAs
23 is 95 percent, the customer with a 5 percent TOCA would effectively pay 5/95 of the
24 costs and credits in the Composite Cost Pool. The customer's effective TOCA in this
25 situation would be 5/95, or 5.263 percent instead of 5 percent.

1 Q. *If the sum of annual TOCAs were less than 100 percent and Slice/Block customers were*
2 *paying a slightly greater percentage of costs, would this not be inequitable, given that the*
3 *Slice portion of the Slice/Block contract was supposed to pay a percentage of the*
4 *Composite Cost Pool equal to the percentage of the Slice system generation output?*

5 A. Paying a slightly greater percentage of costs would not be inequitable, because
6 Slice/Block customers, like all other customers, would receive a credit in their Composite
7 Customer Rate for unused RHWm amounts that would be either estimated in the rate
8 case or subject to the Slice true-up and in either case assumed to be sold at a projected
9 market price. If market prices are higher than Tier 1 Rates (the expected condition), the
10 value of this credit in the Composite Cost Pool would more than compensate customers
11 for the upward adjustment in the Composite Customer Rate due to the sum of TOCAs
12 being lower than 100 percent. Because of this credit for unused RHWm amounts,
13 customers would not be paying more than they would have had the sum of TOCAs been
14 100 percent.

15 Q. *Do you have an analysis that demonstrates that Slice/Block customers would be paying*
16 *no more than they would have if the sum of TOCAs were 100 percent?*

17 A. Yes. Attachment A shows the results of an analysis of the effects of having 150 aMW of
18 unused RHWm, using Slice Revenue Requirement data for FY 2007 from the WP-07
19 Final Proposal.

20 Q. *Please summarize the results of this analysis.*

21 A. The analysis shows that if market prices are above the effective average Slice rate for
22 firm power, Slice customers would pay a lower effective rate than they would pay if
23 unused RHWm energy is not included as a credit in the Composite Cost Pool.

24 The analysis also shows that the Slice True-Up Adjustment charge would not be
25 totally matched with their percentage of the Composite Cost Pool paid for by their

charges, as explained below.

Q. *What happens to the Slice true-up when the sum of TOCAs is less than 100 percent and Slice/Block customers are effectively paying more than their Slice Percentage of the costs and credits in the Composite Cost Pool?*

A. The Slice true-up would not change. If the Slice/Block customer's Slice Percentage is 5 percent, then that customer's Slice True-Up Adjustment charge would be equal to 5 percent of the difference between the actual Composite Cost Pool costs and the Composite Cost Pool as forecast in the relevant rate case. The Slice True-Up Adjustment charge would not change as the TOCA changes, based on a smaller sum of Slice Percentages. If the true-up calculation resulted in a credit to the Slice/Block customers, the Slice/Block customer's Slice Percentage would apply.

Q. *Why would BPA account for unused RHWL through adjusting the rates rather than increasing the customers' TOCA?*

A. During the relevant rate case, BPA would account for the occurrence of unused RHWL amount through the Tier 1 Rates and not by increasing each customer's TOCA to reflect its new percentage share of BPA's costs. Using this method would provide the advantage of not having to change each customer's TOCA when another customer has unused RHWL. The rates would account for this by dividing the amounts in the appropriate Cost Pools by the available Billing Determinants. For example, if 10 percent of the output of the Tier 1 System Resources is forecast to be unused for the Rate Period, the Composite Cost Pool would be divided by the total Billing Determinants for the Rate Period, which would be 180 for a two-year Rate Period (90 each year) to calculate the annual dollar-per-one percent rate. The benefit of the unused RHWL would be reflected through a lower total cost of the Composite Cost Pool by incorporating the credit for the value of the unused RHWL amount.

1 Q. *Would the value of the unused RHWL amount be subject to the Slice true-up?*

2 A. Yes. The value of the unused RHWL amount would be updated for Slice true-up
3 purposes, but only for the value of any unused RHWL amount attributable to the Slice
4 portion of the Slice/Block product.

5 Q. *Would BPA post the Tier 1 Rates as an annual dollar-per-one percent rate?*

6 A. No. BPA would divide the annual rate by 12 to compute the monthly dollar-per-one
7 percent rate. Customers will be billed the flat Customer Charge each month. However,
8 customers could request that BPA shape their Composite Customer Charge in the event
9 that they experience adverse cash flow effects. BPA would accommodate requests to
10 reshape Customer Charges as long as the aggregate reshaping requested by customers
11 was not forecast to adversely impact BPA's cash flow. See TRM section 5.1.1 for a
12 discussion of shaping Customer Charges.

13
14 **Section 2.3: Load Shaping Charge**

15 Q. *What is the proposed Load Shaping Charge?*

16 A. The Load Shaping Charge would be a charge or credit that is based on the need to shape
17 the firm output of Tier 1 System Resources to the monthly/diurnal shape of a customer's
18 Tier 1 Load (load that BPA would serve at Tier 1 Rates). This charge would be
19 applicable to customers purchasing Block (including the Block portion of the Slice/Block
20 product) or Load Following products. The Load Shaping Charge would send a price
21 signal for the differential values of monthly and diurnal energy use and apportion BPA's
22 costs of Balancing Power Purchases to the loads that require such services.

23 Q. *How would the Load Shaping Charge operate?*

24 A. To develop the Load Shaping Charge, BPA would start with the System Shaped Load for
25 each customer. A customer's System Shaped Load would be its forecast Tier 1 Load,

1 expressed in the shape of the forecast firm critical output of Tier 1 System Resources in
2 each of the 24 monthly/diurnal periods of the year. BPA would compare each customer's
3 System Shaped Load to its actual Tier 1 Load to establish a Load Shaping Billing
4 Determinant. The Load Shaping Billing Determinant would effectively allocate the
5 forecast balancing purchase costs to each utility based on the customer's contribution to
6 BPA's forecast need for Balancing Power Purchases. During billing periods when the
7 customer's System Shaped Load exceeds its Tier 1 Load, the customer would receive a
8 credit on its bill. Conversely, during periods when the customer's System Shaped Load
9 is less than its Tier 1 Load, the customer would receive a charge on its bill.

10 Q. *Why have you proposed this Load Shaping Charge?*

11 A. Block and Load Following products require BPA to make Balancing Power Purchases to
12 the extent a customer's load service is not in the shape of the firm critical output of Tier 1
13 System Resources. As a consequence, the Load Shaping Charge would allocate the costs
14 associated with balancing loads and resources to customers based on their load shape.
15 The Load Shaping Charge would replace the monthly and diurnal price signals that BPA
16 currently has in its energy rates. In addition, the Load Shaping Charge would charge or
17 credit the customer for differences in its actual load compared to its Forecast Net
18 Requirement. Therefore, if the actual above-RHWM load turned out to be less than the
19 forecast above-RHWM load, the Load Shaping Charge would provide a credit to the
20 customer. Conversely, the Load Shaping Charge would charge the customer if the actual
21 above-RHWM load is greater than the forecast above-RHWM load. In effect, the Load
22 Shaping Charge would act like a true-up for above-RHWM load forecast error.

1 Q. *Why would Slice be excluded from the Load Shaping Charge?*

2 A. Customers purchasing the Slice product balance their own loads and resources, because
3 Slice is delivered in the shape of the output of the Tier 1 System Resources; as a result,
4 Slice purchases would not require BPA to make Balancing Power Purchases.

5 Q. *How would the forecast revenues from the Load Shaping Charge be treated in rate
6 development?*

7 A. In each rate case, BPA would forecast revenues received from the Load Shaping Charge
8 and include them as a credit to the Non-Slice Cost Pool.

9 Q. *How many Load Shaping Rates would be posted for each Rate Period?*

10 A. BPA would post 24 or 48 (assuming a two-year Rate Period) Load Shaping Rates for
11 each Rate Period, one for each of the 24 monthly/diurnal periods of a year.

12 Q. *How would BPA establish the Load Shaping Rate?*

13 A. In each of the future rate cases implementing this TRM, BPA would develop a Load
14 Shaping Rate for each of the 24 monthly/diurnal periods in a year that is the forecast of
15 wholesale market prices for that Rate Period determined in the relevant rate case.

16 Q. *Would BPA continue to forecast the costs associated with making Balancing Power
17 Purchases to meet its load obligations during the rate case?*

18 A. Yes. Balancing Power Purchases are a known cost of serving load and would continue to
19 be forecast for purposes of demonstrating recovery of BPA's revenue requirement. This
20 cost would be allocated to the Non-Slice Cost Pool.

21 Q. *Would BPA's forecast of Balancing Power Purchase costs associated with the aggregate
22 Tier 1 Load be equivalent to the forecast revenue received from customers from the Load
23 Shaping Charge?*

24 A. No. While the methodologies to calculate the costs associated with each would be
25 similar, the forecast revenue collected from the Load Shaping Charge would be different

1 from the forecast cost of Balancing Power Purchases included in BPA's revenue
2 requirement. The Load Shaping Charge would net power purchases with power sales
3 when it compared a customer's System Shaped Load against its actual Tier 1 Load. The
4 forecast of Balancing Power Purchase costs included in the revenue requirement would
5 separate power purchases from sales, with purchases defined as Balancing Power
6 Purchases and power sales included in surplus sales. The two methods would also differ
7 in the use of water years and forecast market price. The Load Shaping Charge would
8 assign costs based on a single set of forecast market prices and a single firm critical
9 forecast output of the Tier 1 System Resources. The determination of the Balancing
10 Power Purchase costs would use a range of water years with matching market price
11 forecasts for each water year.

12 Q. *Is it appropriate that the method to forecast Balancing Power Purchase cost used in the*
13 *revenue requirement would differ from the method to forecast expected revenue received*
14 *through the Load Shaping Charge?*

15 A. Yes. The Load Shaping Charge would not be intended to recover the actual costs
16 associated with Balancing Power Purchases, but rather would be designed to send a
17 marginal price signal to customers and to allocate the forecast costs of reshaping all
18 customers' loads to the forecast firm critical output of Tier 1 System Resources. The
19 revenue that would be forecast to be received through the Load Shaping Charge would be
20 credited to the Non-Slice Cost Pool. Products for which purchasers would be subject to
21 the Load Shaping Charge (Load Following and Block) are the same products whose rates
22 would be allocated Balancing Power Purchase costs and be credited for the secondary
23 sales credit. The separation of these costs and revenues in the Non-Slice Cost Pool would
24 effectively provide the same equity and cost separation that is provided by BPA's current
25 Heavy Load Hour and Light Load Hour energy rates.

1 Q. *Would the inclusion of market-based Load Shaping Rates in the Tier 1 Rates constitute*
2 *charging customers market-based rates for Tier 1 purchases?*

3 A. No. There are three conditions that could occur under this proposal. First, a Load
4 Following customer's Forecast Net Requirement could be greater than its RHW. In
5 this condition, whether the customer met its above-RHW load with power from BPA or
6 Non-Federal Resources, we expect that the customer would pay a rate close to market for
7 this power. In this case, if the customer's actual load was higher or lower than forecast, it
8 is appropriate to charge or credit the customer a market-based rate for the forecast error.

9 Second, a Load Following customer's Forecast Net Requirement could be less
10 than its RHW. In this condition, the customer would be purchasing at only Tier 1
11 Rates. In this case, if the customer's actual load was higher or lower than forecast, it
12 would be appropriate to charge or credit the customer a Tier 1 Rate for the forecast error.
13 Our proposal includes a Load Shaping True-up to accomplish this. See next section.

14 Third, a Load Following customer's Forecast Net Requirement could be equal to
15 its RHW. In this condition, the customer would be purchasing at only Tier 1 Rates. In
16 this case, if the customer's actual load was lower than forecast, it would be appropriate to
17 credit the customer a Tier 1 Rate for the forecast error. Our proposal includes a Load
18 Shaping Charge true-up to accomplish this. See next section.

19
20 **Section 2.4: Load Shaping Charge True-up**

21 Q. *Please describe your proposed Load Shaping Charge true-up.*

22 A. The proposed Load Shaping Charge true-up would be an end-of-Fiscal Year calculation
23 that is applicable only to Load Following customers. The proposed Load Shaping Charge
24 true-up is designed to avoid crediting or charging a customer at the market-based Load
25 Shaping Rate for Tier 1 purchases that were or should have been credited or charged

1 Tier 1 Rates. The Load Shaping Charge true-up would apply only when a Load
2 Following customer's annual Tier 1 Load (either forecast or actual) was less than its
3 RHWL.

4 Q. *Do you propose any mitigation during the Rate Period to limit the size of the Load*
5 *Shaping Charge true-up charge or credit?*

6 A. Yes. BPA would be able to change a Load Following customer's TOCA each Fiscal
7 Year to more accurately represent the customer's right to take power at Tier 1 Rates.
8 This ability to change a customer's TOCA just prior to the start of the Fiscal Year would
9 help reduce the size of the true-up. The size of the true-up would then be limited to the
10 difference between the more recent forecast of load and the actual load. The new forecast
11 and the associated change to TOCA, if needed, would be revised in August prior to the
12 start of the next Fiscal Year. The forecast would be only 13 months old at the time of the
13 last billing month of the Fiscal Year, thus likely minimizing the magnitude of the
14 differential between forecast load and actual load.

15 Q. *What indicators would a customer have to the magnitude of the year-end Load Shaping*
16 *Charge true-up?*

17 A. The customer would be presented with several indicators throughout the Fiscal Year that
18 would warn about whether the customer would be subject to the true-up, and if so, the
19 approximate size of the true-up and whether it would be payable to the customer or
20 payable to BPA. Each month would provide more information about the customer's
21 actual load compared to the forecast of its load reflected in its TOCA. Therefore, the
22 customer and BPA would be able to have a fairly accurate approximation of the size of
23 the true-up several months prior to the end of the Fiscal Year.

1 Q. *Would BPA post the Load Shaping Charge true-up rate?*

2 A. Yes. BPA would have one Load Shaping Charge true-up rate included in the rate
3 schedule. BPA would determine the Load Shaping Charge true-up rate in each rate case
4 as the difference between 1) the system-weighted average of the Load Shaping Rates and
5 2) the Composite Customer Rate plus the Non-Slice Customer Rate, expressed in dollars
6 per megawatthour.

7 Q. *What kind of payment schedule do you expect for the Load Shaping Charge true-up?*

8 A. This would be developed in each relevant rate case. One possible method would be
9 something similar to the Slice true-up, with the entire payment to the customer reflected
10 in the next applicable month, or payment to BPA over a three-month period.

11
12 **Section 2.5: Demand Charge**

13 Q. *Are you proposing to have a Demand Charge as part of the Tier 1 rate design?*

14 A. Yes. We are proposing to have a Demand Charge that would be designed to send a price
15 signal for the use of capacity to meet customers' peak loads. The Demand Charge would
16 be applicable to customers purchasing Load Following and Block with Shaping Capacity
17 products. The Billing Determinant would be based on each utility's Customer System
18 Peak (CSP), which is the customer's single highest Heavy Load Hour Tier 1 hourly
19 energy purchase from BPA during each month.

20 Q. *Is this proposed Demand Charge similar to the one currently in place in the PF-07 rate
21 schedule?*

22 A. No. The proposed Demand Charge would be designed to act as a price signal to
23 encourage flatter loads, just as with the Demand Charge in the PF-07 rate schedule, since
24 flatter loads are generally less expensive to serve. However, the design of the proposed

1 Demand Charge Billing Determinant is significantly different from BPA's current PF-07
2 Demand Charge.

3 Q. *Would BPA still base the Billing Determinant on a single hour each month?*

4 A. Yes. However, we have proposed to change the method of identifying the particular hour
5 that the Billing Determinant would be based upon. Under the current PF-07 rate, BPA
6 uses a single hour, applied to all customers, based upon the hour of BPA's Generation
7 System Peak (GSP). The rationale for using the hour of GSP is cost causation and the
8 assumption that capacity is most valuable to BPA during the hour when customers place
9 the highest level of demand on BPA. While this assumption may be the same in FY 2012
10 as it was when the PF-07 rates were designed, a price signal is effective only if BPA's
11 customers are capable of responding. A customer's ability to respond is limited with the
12 GSP approach due to the customer's difficulty to determine the hour of GSP ahead of
13 time and respond timely. As a consequence, we are proposing to change the billing hour
14 from a system-specific hour to a customer-specific billing hour. The customer-specific
15 hour would be the CSP. While the CSP method is not completely correlated to when
16 demand is the highest on BPA, the cost causation benefits of using GSP instead of CSP
17 would not be completely lost by changing to CSP, since the peak use of BPA's individual
18 customers contributes greatly to the size and occurrence of BPA's GSP. Additionally,
19 customers would be better positioned to respond to the price signal, because they would
20 be more able to anticipate and respond to their own system peaks.

21 Q. *Would the aggregate sum of peak loads determined through the CSP method be greater
22 than the aggregate sum of peak loads determined through the GSP method?*

23 A. Yes. This is due to the diversity of loads that BPA serves; at best, the aggregate sum of
24 CSP peak loads can equal GSP peak loads if all customers peaked at the GSP hour. If
25 any customer peaked at another hour, the aggregate sum of the CSP peak loads would be

1 greater. We have proposed to account for this diversity through the Contract Demand
2 Quantity (CDQ) adjustment that is described later in this section. In addition, the amount
3 of a customer's demand placed on BPA during CSP would be only the starting point for
4 determining the Demand Charge Billing Determinant. While the aggregate sum of peaks
5 determined through the CSP method would be greater than the aggregate sum of peaks
6 determined through the GSP method, the sum of the Billing Determinants would be much
7 smaller with the proposed Demand Charge methodology than the Demand Charge
8 methodology used in the WP-07 rates.

9 Q. *What about the benefits of peak diversity in the future?*

10 A. The benefit of the diversity between CSP and GSP would be included in the CDQ
11 reduction, as described below. It is true that peak load growth would not receive the
12 benefit of increased diversity between CSP and GSP, but it is also true that the benefit of
13 peak diversity between CSP and GSP peaks would not be reduced if peak diversity is
14 reduced in the future.

15 Q. *Is the identification of the peak hour the only feature you proposed to change regarding*
16 *the Demand Charge?*

17 A. No. After the customer's CSP is identified for each month, BPA would make several
18 adjustments prior to applying the Demand Rate. The adjustments would include a
19 reduction to the CSP for average Tier 1 Heavy Load Hour energy use for the month, a
20 reduction for a customer's CDQ, and a reduction for any peak resource commitments
21 made by the customer.

22 Q. *How would the reduction for average Tier 1 Heavy Load Hour energy be calculated?*

23 A. BPA would measure, either through schedule or meter (whichever would be applicable),
24 the amount of Heavy Load Hour power purchased by a customer in a month from BPA.
25 This amount of power would be reduced by any power that was committed for purchase

1 at BPA's Tier 2 Rate(s). BPA would then divide this resulting amount of power by the
2 number of Heavy Load Hours in the month to arrive at the average Tier 1 Heavy Load
3 Hour energy in that month.

4 Q. *Would a customer with a 100 percent Heavy Load Hour load factor pay a Demand*
5 *Charge?*

6 A. No. If a customer had a 100 percent Heavy Load Hour load factor, subtracting the
7 average Tier 1 Heavy Load Hour energy purchased from its CSP would result in a zero
8 Billing Determinant. If a customer was served with a diurnally flat block, it would
9 effectively be paying for capacity through the Load Shaping Charge. The Load Shaping
10 Rates would be set on market rate forecasts that assume a flat Heavy Load Hour or Light
11 Load Hour delivery. Therefore, these forecast market rates would include the costs of
12 both capacity and energy. If a Demand Charge was added to these market forecasts, the
13 Load Shaping Rate would no longer be the forecast market price but would be greater
14 than the forecast market price.

15 Q. *What is a Contract Demand Quantity?*

16 A. Contract Demand Quantity or CDQ would be a historical "grandfathered" quantity of
17 demand that would be subtracted from a customer's CSP as part of the process of
18 determining the Demand Billing Determinant. Each customer would have 12 CDQs
19 unique to its FY 2005-2007 Heavy Load Hour load factor applied to its FY 2010
20 normalized load. CDQs are amounts that would be included in a customer's CHWM
21 contract for use during the contract term, expressed in kilowatts. See TRM section 5.3.2
22 for calculation of the CDQ.

23 Q. *Why do you propose a CDQ?*

24 A. Including a CDQ reduction as part of the Demand Billing Determinant calculation would
25 enable BPA to increase the Demand Rate to a rate based on the cost of a marginal

1 capacity resource without creating dramatic rate impacts on customers. The CDQ would
2 also allow BPA to change the peak identification hour from GSP to CSP, also without
3 creating dramatic rate impacts on customers.

4 Q. *Would BPA be grandfathering in a customer's entire historical peak load?*

5 A. No. In order to provide some incentive to lower peak demand on BPA, the CDQ
6 reduction would ensure a reasonable portion of peak load remains on the margin without
7 creating dramatic rate impacts compared to the current rate design. We believe that
8 grandfathering 91 percent of a customer's historical peak load would create a proper
9 balance of improving the price signal and avoiding unnecessarily dramatic rate impacts.
10 This balance would be achieved by keeping most (if not all) customers facing some
11 marginal demand while not experiencing larger than a 5 percent rate increase simply due
12 to a change in rate design.

13 Q. *Would all Load Following and Block with Shaping Capacity customers have 9 percent of*
14 *their monthly peak on the margin in the first contract year?*

15 A. No. The 91 percent discount would be applied to the average FY 2005-2007 Heavy Load
16 Hour load factor. If a customer's FY 2012 Heavy Load Hour load factor changes from
17 the average FY 2005-2007 Heavy Load Hour load factor, then this customer could have
18 more or less than 9 percent of its demand applied to the Demand Rate in the first contract
19 year. Furthermore, customers with heavy load hour load factors that are greater than
20 91 percent will have less than 9 percent of their monthly peak on the margin by virtue of
21 the methodology for calculating the Demand Charge Billing Determinant. See TRM
22 section 5.3.1 for calculation of the Demand Charge Billing Determinant.

23 Q. *Would all PF customers have 12 CDQs in their CHWM contract?*

24 A. Yes. However, the value in some months could be zero.

1 Q. *Would CDQs change if BPA experiences a change in peaking capability of Tier 1 System*
2 *Resources?*

3 A. No. The CDQ would be an amount of peak load above average Tier 1 Heavy Load Hour
4 energy that is grandfathered to the customer at no incremental charge. Therefore,
5 reductions in the capability of Tier 1 System Resources that have equal capacity and
6 energy impacts do not need another reduction, because this would be captured in the
7 customer's RHWL calculation. If BPA's Tier 1 System Resources lose only peaking
8 capability, the RHWL would not change, and neither would CDQs. Under such a
9 circumstance, BPA might need to purchase more capacity. BPA would assign this cost of
10 capacity and the expected revenue to the Composite Cost Pool or the Non-Slice Cost
11 Pool.

12 Q. *What is the proposed Super Peak Resource Credit for Load Following customers electing*
13 *to apply resource amounts in the super peak period?*

14 A. It is a third reduction that would be made to the CSP if a customer made a commitment
15 for the Rate Period to shape a Non-Federal Resource into the super peak period as
16 defined by BPA. The super peak periods will be specified in each relevant rate case as
17 either two three-hour periods or one six-hour period for each day with heavy load hours.
18 The Super Peak Resource Credit is equal to the amount of additional capacity provided
19 by a Non-Federal Resource over the amount of capacity provided by an equivalent
20 amount of energy delivered flat across the monthly heavy load hour period. This credit
21 would be applied to the customer's Demand Charge Billing Determinant regardless of
22 when the customer's actual CSP occurs. While it is possible that the credit could result in
23 a negative Billing Determinant, the Demand Billing Determinant would not be reduced
24 below zero.

1 Q. *Why is the measurement of CSP not proposed to be net of any Super Peak Resource*
2 *Credit provided by the customer?*

3 A. Customers that commit to provide a peaking amount from a designated resource for the
4 entire six hours of the daily super peak period would receive the benefit of providing
5 capacity regardless of whether or not the super peak hours coincide with their CSP. If the
6 customer's designated resource was behind the meter and the super peak hours occurred
7 during the same hour as the customer's CSP, then the Demand Charge Billing
8 Determinant would reflect the capacity benefit twice. In order to avoid this, the starting
9 point for determining the Demand Billing Determinant (CSP) must not include any
10 reductions in peak load caused by designated resource.

11 Q. *How would BPA calculate the Demand Rate?*

12 A. We propose to change the method used for calculating the Demand Rate from the method
13 currently employed. We are proposing to use the annual fixed costs (capital and fixed
14 O&M) of an identified capacity resource technology as the basis for calculating the
15 Demand Rate. The identified capacity resource technology and its associated costs
16 would be established in each relevant rate case. This method is designed to bring
17 stability to the Demand Rate, because the annual fixed costs of a capacity resource are
18 expected to provide a good approximation of the long-run marginal cost of capacity
19 compared to a more volatile short-run marginal cost of capacity embedded in a market
20 price forecast.

21 Q. *Are you proposing to shape the annual fixed cost of a capacity resource over the*
22 *12 months of the year?*

23 A. Yes. BPA would continue its current practice of monthly shaping the Demand Rate by
24 using the Heavy Load Hour market price forecast used for the Load Shaping Rate. This
25 is consistent with industry standards of collecting more of the fixed costs of a capacity

resource during months when demand is highest. BPA would post 12 Demand Rates (one for each month) for use during the Rate Period.

Q. *Would it be possible for the shape of the Demand Rate to vary Rate Period to Rate Period?*

A. Yes, it would be possible that the market forecast used for shaping the Demand Rate could change the seasonal shape of the Demand Rate from Rate Period to Rate Period. In order to correct for this possible volatility, we propose to leave open the ability to apply a dampening methodology, proposed as necessary in each relevant rate case, to mitigate this potential risk of a Demand Rate shape that changes significantly through Rate Periods.

Section 3: Tier 2 Rate Design

Section 3.1: Overview

Q. *Please briefly describe the general construct behind the proposed PF Tier 2 rate design.*

A. The proposed TRM provides for a multi-tiered PF rate design applicable to Net Requirement firm power service. We described the proposed Tier 1 rate design in the preceding section of our testimony. The proposed Tier 2 rate design incorporates the costs associated with additional, incremental amounts of power needed to serve the remaining portion of the customers' Net Requirement. These incremental costs of service will be recovered through PF Tier 2 rates. The TRM would establish the basis for the design of future PF Tier 2 rates.

Q. *How do you propose to determine the application of a Tier 2 Rate to power sold by BPA under the Regional Dialogue power sales contracts?*

A. Each customer would be charged a PF Tier 2 Rate or Rates for above-RHWM load purchased from BPA. See Stene *et al.*, TRM-12-E-BPA-05 and TRM section 4.

1 Q. *What costs do you propose to collect through the Tier 2 Rates?*

2 A. The cost components we expect to be allocated to Tier 2 Cost Pools include the costs of
3 market purchases and/or resource acquisitions. The purchase or resource may also have
4 additional costs associated with RSS, transmission, fuel, risk mitigation, and BPA
5 overhead costs.

6 Q. *What Tier 2 Rate Alternatives do you propose?*

7 A. We are proposing three Tier 2 Rate Alternatives: 1) a Tier 2 Load Growth rate; 2) a
8 Tier 2 Short-Term rate; and 3) Tier 2 Vintage rates. Over time, BPA may propose (in
9 power rate cases) to update, modify, eliminate, or add to these alternatives. We propose
10 to establish the Tier 2 Short-Term and Tier 2 Load Growth rate alternatives in the rate
11 case that will develop rates for the FY 2012-2013 Rate Period. BPA also might set a Tier
12 2 Vintage rate or rates in that rate case if necessary commitments have been made by
13 both BPA and customers. See section 3.5 of this testimony for a discussion of Tier 2
14 Vintage rates.

15 Q. *Briefly describe the general differences between the proposed Tier 2 Rate Alternatives.*

16 A. The primary difference among the Tier 2 Rate Alternatives will be the resource (and
17 associated risk) costs allocated to the Tier 2 Rates. The types of resource costs that
18 would be allocated to the Tier 2 Rates are expected to reflect the required purchase
19 periods of the service. For customers that would commit to purchasing power at the Load
20 Growth rate for the term of the CHWM Contract, for example, we expect BPA would
21 acquire resources reflecting the long-term nature of this purchase commitment. Under
22 the Tier 2 Short-Term rate option, the customers' commitment is expected to be for a
23 shorter-term purchase, generally 5 years. Thus, we expect BPA would acquire resources
24 reflecting the short-term nature of this purchase period.

Both rates would likely be based on a mixture of long-term and short-term resources. However, over time, the Tier 2 Load Growth rate would likely be based more on the cost of long-term acquisitions than on short-term purchases, and the Tier 2 Short-Term rate likely would be based on the cost of short-term purchases rather than long-term acquisitions. Any Tier 2 Vintage rates would be based on specific resource acquisitions and the purchase periods agreed to by customers and BPA.

Q. *Are the proposed purchase periods associated with each of the proposed Tier 2 Rate Alternatives an issue to be resolved in this rate proceeding or in a future rate proceeding?*

A. No. These are contract matters and are to be resolved in the contract process.

Q. *Please describe why you propose that BPA would update, modify, eliminate, or add to these alternatives.*

A. Because we propose that the TRM be established for 20 years, we believe it is prudent and reasonable to have the flexibility to propose modifications to the Tier 2 Rate Alternatives. We believe the reasons for making modifications to rate alternatives would be based on input from customers requesting additional rate alternatives. Any proposed modifications would be subject to a 7(i) rate proceeding.

Section 3.2: Tier 2 Billing Determinants

Q. *What do you propose to use as Tier 2 Billing Determinants?*

A. We propose that the above-RHWM load that customers would commit to purchase from BPA would be the Tier 2 Billing Determinants. This above-RHWM load would be calculated as an annual amount of energy, expressed in average megawatts. This would conform to the proposed Tier 2 Rates, which would be applicable to a flat annual block of energy.

1 Q. *Why do you propose in TRM section 6.2 to use 8760 MWh as the threshold for service at*
2 *Tier 2 Rates and/or with Non-Federal Resources?*

3 A. A threshold would be important for planning and billing purposes. We propose this
4 specific amount because it is equivalent to one annual average megawatt. Additionally,
5 we consider above-RHWM loads smaller than this threshold to be insignificant compared
6 to the administrative costs of calculating and applying a Tier 2 Rate. In addition, this
7 above-RHWM load would be purchased at the Load Shaping Rates anyway.

8 Q. *Why do you say that these small above-RHWM loads would be purchased at the Load*
9 *Shaping Rates?*

10 A. The maximum amount we propose that a customer could purchase at Tier 1 Rates is the
11 customer's RHWM. The proposed rate design assumes that all above-RHWM load is
12 purchased at Tier 2 rates. Because we are proposing the threshold before Tier 2 rates are
13 imposed, this small above-RHWM load, if it actually occurs, would be subject to the
14 Load Shaping Rates.

15 For example, suppose that a customer has a RHWM of 10.000 aMW and a
16 Forecast Net Requirement of 10.015 aMW. This customer's above-RHWM load for the
17 year would be 0.015 aMW. This is below the proposed threshold, so it would not be
18 charged a Tier 2 rate. Rather, this customer's Tier 1 Billing Determinant would be
19 established based on its RHWM of 10.000 aMW. If the customer's load for the year
20 actually was 10.015 aMW, the customer would be subject to paying for the 0.015 aMW
21 at Load Shaping Rates.

22 Q. *Would a customer have different amounts of above-RHWM load in each year of a Rate*
23 *Period?*

1 A. Yes. Although a customer's RHWL might be the same for each year of the Rate Period,
2 if its Forecast Net Requirement is different in each year of the Rate Period, it would have
3 different amounts of above-RHWL load during the Rate Period.

4 Q. *Would a customer purchase different amounts of power at Tier 2 Rates in each year of a*
5 *Rate Period?*

6 A. Yes. If the above-RHWL load is different in each year, the Tier 2 Billing Determinant
7 would be different for the two years. Another instance would be if the customer
8 contractually committed to differing amounts of service at a Tier 2 Rate in the second
9 year of the Rate Period by providing notice that it would apply non-Federal resources to
10 load that year.

11 Q. *Please explain how you propose BPA would account for the amount of Tier 2-priced load*
12 *if it does not match the actual amount of power purchased by a Load Following*
13 *customer.*

14 A. Within the Rate Period, if a Load Following customer's actual load does not match the
15 Forecast Net Requirement, we propose that the customer would continue to pay for the
16 committed above-RHWL load at Tier 2 rates. The forecast error would be incorporated
17 into the Load Shaping credits or charges. See section 2.3 of this testimony.

18 Q. *Please explain how BPA would account for the amount of above-RHWL load that a*
19 *Block or Slice/Block customer would commit to purchase from BPA if it does not match*
20 *the actual amount of power BPA delivered to that Block or Slice/Block customer after*
21 *calculating its annual Net Requirement.*

22 A. If a customer that was purchasing fixed block amounts of power committed to purchase
23 above-RHWL from BPA based on the customer's forecast of its Net Requirement, and
24 then its Net Requirement was determined by BPA to be lower, we propose that BPA
25 would remarket the unused, Tier 2-priced above-RHWL amount and credit the customer

1 for the value of the power. However, if at the time of its Net Requirement calculation its
2 TRL is determined to be greater than what was used when the customer forecast its Net
3 Requirement, BPA would not increase the amount of block power sold at Tier 2 Rates to
4 meet this purchaser's increase in load. We expect that under the terms of the Block and
5 Slice/Block contracts, a customer would be obligated to apply Non-Federal Resources to
6 meet any additional load above its commitments to service at Tier 1 and 2 Rates. See
7 section 3.4 of this testimony.

8 Q. *Please describe the proposed remarketing feature of Tier 2 rates for Load Following*
9 *customers.*

10 A. Prior to each rate case, in the RHW process, if a Load Following customer's above-
11 RHW load was determined to be less than its committed purchase amount at a Tier 2
12 Vintage rate (or any other Tier 2 Rate that requires the customer to commit to set
13 amounts for periods longer than a Rate Period), we propose that BPA would remarket the
14 excess amount of Tier 2 Vintage rate-priced power that would not be needed by the
15 customer. The proceeds from such remarketing would be credited to the customer. BPA
16 would calculate the amount of Tier 2-priced power needing this treatment on a Rate
17 Period basis in the RHW process for Load Following customers. Then, prior to each
18 Fiscal Year, BPA would calculate the proceeds that would be credited to the customer
19 during each Fiscal Year. See TRM section 6.4.1.

20
21 **Section 3.3: Tier 2 Cost Basis**

22 Q. *What are the types of costs you expect would be allocated to the different Tier 2 Cost*
23 *Pools?*

24 A. We envision that the Tier 2 Cost Pools would be allocated the costs of market purchases
25 and/or resource acquisitions (whether dispatchable or non-dispatchable resources).

1 Depending on the purchase or resource type, there may be additional costs associated
2 with, among other things, RSS, transmission, fuel, and risk mitigation allocated to the
3 Cost Pools. The cost or benefit of any particular resource's generation shape would be
4 reflected through the application of the Resource Shaping Charge and the Resource
5 Shaping Charge Adjustment. Finally, all Tier 2 Cost Pools would include an Overhead
6 Cost Adder to account for the costs of administering Tier 2. *See Bliven et al.*,
7 TRM-12-E-BPA-03, and TRM section 6.3 for a description of the cost basis of Tier 2
8 Rates.

9 Q. *On what shape of power would the cost of Tier 2 Rate(s) be based?*

10 A. Tier 2 rates would be based on the costs of providing power shaped in a flat annual
11 amount; that is, an amount of power that is equal in all hours of the year. This flat annual
12 block creates a benchmark that allows comparison between BPA's Tier 2 Rate
13 Alternatives and any Non-Federal Resources a customer might be considering. *See*
14 *Cherry et al.*, TRM-12-E-BPA-02.

15 Q. *How do you propose to compensate Tier 1 Cost Pools for the provision of RSS to*
16 *resources allocated to Tier 2 Cost Pools?*

17 A. We propose to include in the applicable Tier 2 Cost Pools charges for the provision of
18 RSS for the resources that have costs allocated to Tier 2 Cost Pools. We propose to
19 calculate these charges in the same manner as would be calculated for customers' Non-
20 Federal Resources. *See* section 5 of this testimony and TRM section 8 for additional
21 details on how these charges would be applied.

22 Q. *Why are you proposing the Resource Shaping Charge Adjustment be applied to the Tier 2*
23 *Rate(s)?*

24 A. We propose to apply the Resource Shaping Charge Adjustment applicable to service at
25 Tier 2 Rates in the same way it is applicable to customers' Non-Federal Resources

1 supported by RSS. Application of the Resource Shaping Charge Adjustment to both
2 Federal and Non-Federal Resources would compensate Tier 1 purchasers as necessary for
3 the costs of resources supporting above-RHWM loads. We believe that including the
4 Resource Shaping Charge Adjustment in Tier 2 Cost Pools is necessary to clarify how
5 Tier 1 and Tier 2 costs and risks would be separated. Other, more specific risk mitigation
6 tools could be proposed in individual rate cases based on the risks of the types of costs
7 allocated to the specific Cost Pools. See Lovell *et al.*, TRM-E-BPA-08 and TRM section
8 6.3.4.

9 Q. *Would some Tier 2 Cost Pools reflect a revenue credit from the sale of renewable energy*
10 *certificates (RECs)?*

11 A. Yes. We propose to credit to the Tier 2 Short-Term and Load Growth Cost Pools the
12 forecast revenue from REC sales associated with the renewable resources whose costs are
13 allocated to such cost pools. We are also open to including an approach that would
14 provide customers their share of these RECs instead of a revenue credit.

15 Q. *What is the Overhead Cost Adder?*

16 A. This is a proposed adder that is intended to compensate Tier 1 Cost Pools for the general
17 and administrative (overhead) costs associated with BPA's provision of power at Tier 2
18 Rates. BPA would propose the adder in each rate case as a per-kilowatthour charge
19 applied to all power sold at Tier 2 Rates. We expect that the proposed adders would be
20 based on typical fees charged by power brokers to cover their costs.

21 Q. *Given that the adder would be proposed in relevant rate cases, what if customers or BPA*
22 *perceive that BPA is collecting too much or too little revenue to cover the overhead costs*
23 *of providing service at Tier 2 Rates?*

1 A. The overhead cost adder would be set in rate cases. If the Overhead Cost Adder is
2 believed to be set at a level that is no longer comparable to the observed broker fees, a
3 new level can be proposed in a subsequent 7(i) rate proceeding.
4

5 **Section 3.4: Remarketing of Tier 2 Rate-Priced Amounts**

6 Q. *What is your remarketing proposal for Tier 2 Rate-priced amounts?*

7 A. We are proposing to remarket Tier 2 Rate-priced power when a customer's Net
8 Requirement no longer supports the amount of Tier 2 Rate-priced power it has committed
9 to purchase.

10 Q. *Why is this remarketing of Tier 2 Rate-priced power necessary?*

11 A. As explained in section 3.2 of this testimony, it is possible that a customer could lose load
12 when it has committed to purchasing some or all of its above-RHWM load at the Tier 2
13 Rate(s) for periods longer than a Rate Period. Remarketing would allow such customers
14 to purchase Tier 1 Rate-priced power to the maximum extent possible while maintaining
15 their take-or-pay commitment to BPA.

16 Q. *Why are you proposing not to give customers the option to remarket Tier 2 Rate-priced
17 amounts themselves?*

18 A. It is our understanding that statutes do not allow BPA to deliver to a customer more
19 requirements power than the customer's Net Requirement, and customers are prohibited
20 from reselling requirements power. Accordingly, we cannot propose to give customers
21 the option of remarketing unneeded the Tier 2 amounts themselves.
22

23 **Section 3.5: Tier 2 Vintage Rate Alternatives**

24 Q. *What is a Tier 2 Vintage rate?*

1 A. A Tier 2 Vintage rate would be a rate developed based on the costs of specific resources
2 allocated to a specific Cost Pool. A customer who wishes to purchase at a specific Tier 2
3 Vintage rate would have to commit to purchase service for a portion of its above-RHWM
4 load at that rate for the full length of the term of the rate offering.

5 Q. *Please explain how you propose a Tier 2 Vintage rate to work.*

6 A. A customer would be allowed to purchase service for an above-RHWM load from BPA
7 at one or more Tier 2 Vintage rates only if it purchases service to an above-RHWM load
8 from BPA at the PF Tier 2 Short-Term rate. An exception to this requirement is if BPA
9 would offer a Tier 2 Vintage rate by the November 2009 Tier 2 Rate election deadline.
10 Customers that are interested in pursuing a Vintage rate would commit to purchase under
11 a specific Vintage rate for a set amount of power and a set purchase period if BPA is able
12 to acquire a resource within specified parameters. A customer could face liquidated
13 damages to hold the Short-Term rate Cost Pool harmless if it transfers service to the
14 Vintage rate. BPA would determine such costs, if any, in the first section 7(i) rate
15 proceeding that establishes the applicable Tier 2 Vintage rate(s). If BPA was unable to
16 establish the Vintage rate, the customer would continue to purchase at the Short-Term
17 rate. Terms regarding availability for service at the Vintage rate(s) will be determined in
18 the contract process.

19
20 **Section 4: Shared Rate Plan**

21 Q. *What is the proposed Shared Rate Plan (SRP)?*

22 A. The SRP would be available to Load Following customers that commit to purchase all of
23 their above-RHWM load service at the Tier 2 Load Growth rate. The SRP would be a PF
24 rate option that would provide for a single rate in place of the Tier 1 Composite and Non-
25 Slice Customer Rates and the Tier 2 Load Growth rate. The portion of the Tier 1 and

1 Tier 2 costs that the individual SRP participants would be responsible for would be
2 combined into one rate. The Billing Determinant would be the SRP customer's share of
3 the total Forecast Net Requirement for all SRP customers and is called the Shared Rate
4 Cost Allocator (SRCA). See TRM section 7.

5 Q. *Why are you proposing the SRP?*

6 A. We are proposing the SRP to respond to Load Following customers that have expressed a
7 desire for a single rate option. The SRP would spread the costs of load growth
8 experienced by any individual SRP participant over all of the SRP participants. This cost
9 spreading effect would be particularly beneficial for small customers where a 1 or 2
10 aMW increase in load would represent a large proportion of their load.

11 Q. *What other Tier 1 and Tier 2 Rates are proposed to apply to customers who select the*
12 *SRP?*

13 A. The Demand Charge and Load Shaping Charge would be applied to SRP customers on an
14 individual basis. However, the Load Shaping Charge true-up would be adapted for
15 customers taking service under the SRP.

16 Q. *Please describe how the Load Shaping Charge true-up applicable to customers that*
17 *participate in the SRP would work.*

18 A. With one exception, BPA would apply the Load Shaping Charge and true-up on an
19 individual SRP customer's bill exactly the way it would for Load Following customers
20 that do not participate in the SRP.

21 Q. *What is the exception for assessing the Load Shaping Charges and true-up for SRP*
22 *participants?*

23 A. If a Load Following customer's actual load was less than its Forecast Net Requirement,
24 the customer would receive a market-based Load Shaping credit for the power that was
25 paid for but not used. However, if the customer was an SRP participant, and if the

customer's actual load was less than its Forecast Net Requirement, the Load Shaping credit would be shared among all SRP participants based on their Shared Rate Cost Allocator. See TRM section 7 at 75.

Q. Why are you proposing such an adjustment?

A. This adjustment would mitigate a possible incentive among SRP members to over-forecast their loads, and thus the amounts of power they would purchase at Tier 2 Rates, in order to receive the market-based credits under the Load Shaping Charges. If the customer was not a participant in the SRP, the over-forecast would result in that customer paying for more Tier 2 Rate-priced service, and the resulting Load Shaping credits would return the over-forecast to that customer. But if the customer was an SRP participant, the higher Tier 2 charges of the over-forecast would be spread over all participants. Therefore, the resulting Load Shaping credits should also be spread over all participants

Section 5: Resource Support Services

Section 5.1: Overview

Q. What are Resource Support Services?

A. RSS are the services that would be provided to Federal or Non-Federal Resources to deem a resource suitable for serving the above-RHWM load of Load Following customers. RSS are designed to financially convert a variable output resource into a flat annual block of power. See TRM section 8. Under certain situations, other PF customers could purchase RSS to physically convert a variable output resource into a flat block of power. RSS comprise five services: Diurnal Flattening Service, Resource Shaping Charge, Resource Shaping Charge Adjustment, Forced Outage Reserves, and Secondary Crediting Service. Each of these is discussed below.

Q. To what resources would RSS be applied?

1 A. RSS are designed primarily for Tier 2 System Resources and Load Following customer
2 resources that are dedicated to serving their regional retail load. For eligible Slice/Block
3 and Block customer resources, these services would be offered under the Firm Power
4 Products and Services (FPS) rate schedule.
5

6 **Section 5.2: Diurnal Flattening Service**

7 *Q. What would the proposed Diurnal Flattening Service provide?*

8 A. The Diurnal Flattening Service (DFS) is a service that would make a variable or
9 intermittent resource, or that portion of the resource output that is variable or intermittent,
10 financially equivalent to a resource that is flat within the 24 monthly/diurnal periods of
11 the year. This service would allow resources that have output variations (due to natural
12 variations rather than dispatch decisions) within the monthly/diurnal periods of the year
13 to align with the Tier 1 rate design (through the Resource Shaping Charge), which
14 establishes 24 monthly/diurnal Load Shaping rates. DFS would also ensure that a
15 resource provides sufficient capacity to meet BPA's flat annual benchmark for above-
16 RHEM loads.

17 *Q. What do you mean when you say resource output?*

18 A. Our definition of resource output depends on the scheduling requirements of the
19 resources. If BPA's Transmission function or another Balancing Authority Area requires
20 the resource to be scheduled, resource output would be the schedule. If a schedule is not
21 required, resource output would be the metered amount. We make this distinction
22 because the Balancing Authority Area firms the schedule, while the RSS do not firm the
23 schedule but rather provide a firm schedule. If a resource is not required to schedule,
24 then the meter is the only source of information. For similar reasons, when we say
25 scheduled generation we mean metered if no schedule is required.

1 Q. *Why have you proposed DFS?*

2 A. Resources that would be used to serve above-RHWM loads (whether purchased from
3 BPA or Non-Federal Resources) must be benchmarked against the shape of a flat annual
4 block of power. *See Cherry et al.*, TRM-12-E-BPA-02. Because the output of resources
5 can vary, the DFS is the first of a two-step process to flatten variable or intermittent
6 resources (or that portion that is variable or intermittent) into a flat annual block of
7 power. The Resource Shaping Charge completes the process by financially converting
8 the 24 monthly/diurnal flat blocks after application of the DFS into a flat annual block.

9 Q. *What is the objective of the proposed pricing methodology for the DFS?*

10 A. Our objective for the proposed DFS pricing methodology is to approximate the market
11 cost of providing a resource flattening service to help ensure that the power sold at Tier 1
12 Rates is not subsidizing power sold at Tier 2 Rates. Setting the rate for DFS at a market
13 price would also encourage the development of a market for this type of service. DFS
14 price signals should also lead to innovation and investment in new technologies that
15 would allow entities to provide the service at a lower cost. Lastly, the demands placed on
16 the existing Federal system are expected to increase in the future. This may force BPA to
17 acquire additional resources in order to provide the capacity and the flexibility required
18 by the DFS. By approximating the cost of providing this service using the costs of new
19 capacity resources would avoid the cost spikes and subsequent rate shocks that may occur
20 if BPA's existing infrastructure could no longer meet the capacity needs of customers.

21 Q. *Why do you propose to re-evaluate the pricing methodology for the DFS in each relevant*
22 *rate case?*

23 A. Many things can change during a 20-year contract. There are several factors that could
24 directly affect the method used for pricing the DFS. Alternate methods of storing energy
25 and returning the energy in a different shape, such as batteries, flywheels, and

1 superconducting storage, are being researched and pursued. Our objective to
2 appropriately price the resource flattening service and encourage a market for the service
3 could not be met if the price placed on providing this service strayed too far from the
4 marginal cost.

5 Q. *Do you believe that BPA could provide this service through the Tier 1 System Resources*
6 *at a lower cost than a competitor providing this service?*

7 A. First, we believe that providing DFS at the embedded cost of Tier 1 System Resources
8 would result in inappropriate cost shifts from Tier 1 Cost Pools to Tier 2 Cost Pools.
9 Therefore, the DFS at best could be priced at the opportunity cost of the use of Tier 1
10 System Resources. It is uncertain at this point what the cost of providing this service
11 would be if only the opportunity cost of the Tier 1 System Resources was used to price
12 this service. It is also uncertain what new technologies or viable resource support
13 markets will be developed in the next 20 years. While it is true that the existing Federal
14 system has more flexibility than most other resource systems, this flexibility currently
15 does not go unused. Using the Federal system's flexibility to provide the DFS would
16 mean removing flexibility that is currently being used for such things as factoring
17 (moving energy from less expensive hours to more expensive hours), a service that
18 provides a significant benefit.

19 Q. *What would be the components of DFS?*

20 A. DFS would consist of a capacity component and an energy component. A resource to
21 which DFS is applied would be compared to a flat annual block of power. If the resource
22 would not deliver at least as much capacity as a flat block, the DFS would provide
23 capacity in the amount required to meet a flat block specification; i.e., equal hourly
24 amounts through the relevant time period. If the resource output was a variable amount
25 of power from hour to hour, the DFS would provide a storage service for the energy

1 when the resource performs above a flat block and returns the energy when the resource
2 performs below a flat block.

3 Q. *How much variation in scheduled output would a resource for which DFS is applied*
4 *allow?*

5 A. The DFS could accommodate output variations up to 100 percent of the nameplate
6 capacity of the resource. A customer could declare an amount of firm output for a
7 resource and then purchase DFS to flatten energy deliveries above the declared firm
8 output.

9 Q. *How would the DFS account for firm capacity that a resource could provide?*

10 A. If a resource with DFS applied had some firm capacity, this amount of firm capacity
11 would be the contract-defined minimum schedule for that resource. Failure to meet the
12 contract minimum schedule would be dealt with through Forced Outage Reserves (FOR)
13 purchased from BPA or through alternative arrangements made by the customer. Forced
14 Outage Reserves (as described below) is a separate service that could be purchased if a
15 customer expected BPA to provide backup for firm generation. Failure to meet the
16 contract minimum schedule either through FOR or an alternative arrangement could
17 result in an Unauthorized Increase Charge.

18 Q. *Why do you propose that BPA may provide a credit if a resource that is applying DFS*
19 *was determined to provide more capacity than a flat annual block?*

20 A. Due to the proposed requirement that service to above-RHWM amounts would be
21 benchmarked against flat annual blocks of power, a resource that generated at a higher
22 level in heavy load hours than in light load hours could be construed as providing more
23 capacity than the flat annual block. Generally, the Resource Shaping Charge (which is
24 discussed further below in section 5.3) would credit this resource with the market value
25 of selling the excess heavy load hour energy and purchasing the less valuable light load

1 hour energy. Because the capacity embedded in monthly/diurnal blocks would be
2 addressed through the Resource Shaping Charge, the number of resources that would
3 provide even more capacity would be very limited. This limited set of resources would
4 be further reduced because resources with this kind of capacity flexibility would likely
5 not need to purchase the DFS. However, if a particular resource was determined to
6 provide more capacity than a flat annual block, BPA would need to consider when this
7 additional capacity was being provided before a capacity credit for the resource would be
8 provided. BPA would not want to find itself in a situation where it was forced to
9 purchase or credit for capacity when it had little to no value to BPA.

10 Q. *Would a solar resource provide more capacity than a flat annual block?*

11 A. A solar resource has the potential to provide more capacity than a flat annual block, but
12 the value of this additional capacity would be reflected through the Resource Shaping
13 Charge (described below) and not through an explicit DFS capacity credit. The Resource
14 Shaping Charge would provide a market-based credit for generation levels that were
15 greater than the flat annual block. A solar resource typically produces the majority of its
16 power during heavy load hours. To the extent the solar resource generates power in a
17 given period in excess of a flat annual block, the Resource Shaping Charge would credit
18 the customer for this additional amount of power at heavy load hour prices. Likewise,
19 the solar resource would incur a charge when the generation was below a flat annual
20 block. The charges would typically be incurred during the lower-priced light load hour
21 periods.

22 Q. *When calculating the amount of capacity a resource provides, would BPA take into*
23 *account relevant regional studies that could provide insight on this particular issue?*

24 A. We propose that BPA would consider relevant regional studies when determining the
25 capacity provided by a resource or resource group that has the DFS applied.

1 Q. *Would a customer have to pay for capacity once for the resource and a second time for*
2 *the load?*

3 A. No. The Tier 1 Demand Billing Determinant is designed to be net of any capacity
4 provided by either power purchased at BPA's Tier 2 rate or above-RHWM load served
5 by Non-Federal Resources. Once the DFS is applied to a resource (in conjunction with
6 the Resource Shaping Charge as described below), it would then be considered a flat
7 annual block for purposes of determining the Tier 1 Demand Billing Determinant.

8 Q. *Once the DFS addressed the necessary capacity, would there an additional component to*
9 *the pricing of the DFS?*

10 A. Yes. There would also be an energy charge. The capacity component would ensure that
11 there would be capacity available when the resource produces less than its expected
12 generation. The energy component would reflect the cost of storing energy in high
13 generation hours and releasing energy in low generation hours.

14 Q. *Would there be any other components besides a resource's historical hourly output that*
15 *BPA would consider when pricing this service for a particular resource or resource*
16 *group?*

17 A. There may be an adjustment to the overall cost if BPA determined that a particular
18 resource's generation schedule might be curtailed due to transmission constraints. There
19 might also be a charge for scheduling Non-Federal Resources used to serve above-
20 RHWM loads.

21 Q. *What would happen if DFS was applied to a resource that was economically displaced?*

22 A. The DFS would not inhibit a resource operator from economically displacing a resource.
23 However, if a resource receiving DFS was displaced, the customer would need to provide
24 an alternate resource or power purchase schedule for each hour the resource was

1 displaced that would be equal to the planned output of the resource as determined when
2 the DFS was priced.

3 Q. *Could the DFS be purchased for only a portion of a resource?*

4 A. Yes, but only if a utility purchased a fixed percentage share of a specific resource and
5 that percentage of generation was dedicated to serving that customer's firm consumer
6 load. The DFS is designed to smooth natural variations in hour-to-hour output of a
7 specific resource that is dedicated to load and not for variations caused by marketing
8 decisions. If the DFS was to be applied to a portion of a resource that consisted of a non-
9 percentage agreement, marketing decisions of another resource owner could create an
10 arbitrage opportunity between BPA's forecast market price used for the Resource
11 Shaping Charge Adjustment (described below) and the actual market prices at the time.

12 Q. *Could the DFS be applied to a group of resources?*

13 A. Yes. We propose that BPA would allow grouping the resources in each of BPA's Tier 2
14 Cost Pools when applying and pricing the DFS. However, BPA would not group
15 resources from multiple Tier 2 Cost Pools, because this would result in the shifting of
16 costs among the various Tier 2 Cost Pools. This shifting of cost between Tier 2 Cost
17 Pools is inconsistent with the principle of keeping separate the costs among the Tier 2
18 Cost Pools. Multiple resources owned by a single customer would also be allowed to be
19 grouped for purposes of applying and pricing this product. BPA also may consider some
20 cross-customer grouping of resources, at the request of all customers wanting to
21 participate in the grouping, for purposes of applying and pricing the DFS.

22 Q. *What benefits would come with grouping resources for purposes of applying and pricing*
23 *the DFS?*

24 A. Grouping resources would create the opportunity for customers to benefit from the
25 diversity of the various resources. The result of grouping would create the opportunity

1 for combined output to more closely match the 24 monthly/diurnal flat blocks established
2 by BPA. Such sharing of diversity could reduce the cost of the DFS compared to
3 purchasing the service on an individual resource basis.

4 Q. *Has BPA ever offered a service like this in the past?*

5 A. No. BPA has offered storage and shaping services in the past, but none of these services
6 flattened a resource to the extent that the DFS would; nor did the storage and shaping
7 service bestow capacity benefits from the resource to the load. BPA's past storage and
8 shaping services included schedule certainty by delaying energy delivery for a week or
9 providing for energy exchanges that returned power in the light load hours. DFS would
10 be BPA's first service that flattened a resource for monthly/diurnal periods and
11 guaranteed the capacity included with a flat block.

12 Q. *Would this service overlap with the integration service provided by the BPA
13 Transmission function or other Balancing Authority Areas?*

14 A. No. The DFS would not be an integration service. The DFS simply would allow
15 dedicated resources that have natural variations in output to align with a rate design that
16 would not distinguish between the value of power within the 24 monthly/diurnal periods
17 of the year. It is important to note that the DFS pricing would be based on scheduled
18 quantities, not actual resource hourly output (unless a schedule was not required by the
19 Balancing Authority Area); the schedule would be guaranteed by the transmission
20 provider. This is particularly important because BPA would serve the net load of its
21 customers, and different resource shapes would change the load that BPA serves.
22 Within-hour variations would still need to be managed by the transmission provider.

23 Q. *Would the DFS replace the need for planned outage reserves?*

24 A. Yes. Planned outages would be defined as outages known to BPA prior to when the DFS
25 was priced. The total annual energy output, including zero generation during planned

1 outages, would still be shaped to the flat annual block of energy. The combination of the
2 DFS and the Resource Shaping Charge (described below) would account for the lack of
3 energy output when the resource is offline for planned maintenance.

4 Q. *How would the capacity and energy components of the DFS be charged to the resource?*

5 A. We propose that the capacity component of the DFS be billed flat across the Rate Period
6 based on the costs determined when the service would be priced. The energy component
7 of the resource would be a dollars per megawatt-hour rate that would be charged on actual
8 scheduled generation.

9 Q. *Why would the capacity component be charged on the forecast capacity need of the
10 resource, while the energy component would be charged on actual scheduled generation
11 (or metered if a schedule was not required by the Balancing Authority Area)?*

12 A. The capacity component of the resource would be planned for and reserved by BPA prior
13 to the Rate Period regardless of the actual energy scheduled by the resource. In order to
14 ensure cost recovery and that adequate capacity is available, BPA must be able to collect
15 this reservation fee regardless of actual scheduled generation. The logic behind charging
16 the energy component on actual scheduled generation stems from the purpose of the
17 charge, which is to mimic the cost of storage during over-generation hours and release
18 during under-generation hours. If, for example, a resource produced no energy during an
19 entire monthly/diurnal period, (and the DFS service was applied to the entire resource),
20 there would be no storage and release costs incurred by BPA. The lack of energy would
21 be paid for through the Resource Shaping Charge Adjustment as described below.
22 Conversely, if a resource scheduled more energy than planned, the amount of storage and
23 release BPA would need to provide would increase, thereby justifying the need to charge
24 the actual scheduled energy component as a per-unit charge. The credit for the additional

energy would be addressed through the Resource Shaping Charge Adjustment, as described below.

Q. When a resource is economically displaced, how would the DFS be billed?

A. The capacity portion of the DFS would remain fixed, because the capacity was planned for and reserved by BPA. If a resource that is applying the DFS was economically displaced, the customer must provide an alternate schedule for each hour the resource was displaced that is equal to the planned output of the resource as determined when the DFS was purchased. Therefore, the energy component of the DFS would not be charged to the resource because the alternate schedule is at the flat amount for the duration of the outage and would not need any storage and release from BPA.

Section 5.3: Resource Shaping Charge

Q. What is the proposed Resource Shaping Charge?

A. The proposed Resource Shaping Charge is a customer-specific annual charge or credit that would adjust for the difference in value between a planned resource energy shape that is flat within each of the 24 monthly/diurnal periods of the year and an equivalently sized flat annual block. For customers purchasing DFS for their resources, the Resource Shaping Charge would be applied to the 24 flat blocks. A customer applying a Non-Federal Resource to its above-RHWM load that was flat within the 24 individual monthly/diurnal periods of the year but in amounts that are not flat within the month or across the months would avoid the DFS charge but would be subject to the Resource Shaping Charge. A customer applying a Non-Federal Resource to its above-RHWM load that is annually flat (i.e., equal in all hours of the year) would avoid both the DFS charge and the Resource Shaping Charge.

Q. How would the Resource Shaping Charge be different from the Load Shaping Charge?

1 A. The Resource Shaping Charge and Load Shaping Charge would be effectively similar,
2 with one applied to a resource and the other to load. The Load Shaping Charge is the
3 charge for the service of shaping the expected firm critical output of the Tier 1 System
4 Resources to a customer's actual Tier 1 Load. The Resource Shaping Charge is the
5 charge for shaping a monthly/diurnal flat resource into a flat annual block.

6 Q. *How would the Resource Shaping Charge apply?*

7 A. The Billing Determinant for the Resource Shaping Charge would be the difference
8 between a flat annual block and the resource's expected monthly/diurnal flat firm output
9 (flat annual block minus the resource's firm or expected output). This Billing
10 Determinant might be a positive or a negative number. A resource forecast providing
11 less energy than the flat annual block during any of the 24 monthly/diurnal periods of the
12 year would result in a positive Billing Determinant for that period and thus a charge for
13 purposes of determining the Resource Shaping Charge. Conversely, a resource forecast
14 providing more energy than the flat block during any of the 24 monthly/diurnal periods of
15 the year would result in a negative Billing Determinant for that period and thus a credit
16 for purposes of determining the Resource Shaping Charge. The charges and credits
17 would be summed and the total annual costs would be allocated as a flat monthly charge
18 or credit on the customer's bill.

19 Q. *Why do you propose a separate Resource Shaping Charge when the Load Shaping*
20 *Charge would consist of the same rates and ultimately produce the same bill?*

21 A. We believe the cost or benefit of different resource shapes should be transparent. If we
22 folded the seasonal costs of the resource into the rates applied to loads, then this
23 transparency would be lost. Also, BPA would price the power sold at a Tier 2 Rate as if
24 it was delivered in flat annual blocks. BPA would apply the same Resource Shaping
25 Charge to resources whose costs are allocated to Tier 2 Cost Pools, thus making the

seasonal benefits or costs of a resource transparent in BPA's Tier 2 Rates. Applying this transparency to Non-Federal Resources also would provide consistency and comparability.

Q. How would the Resource Shaping Charge be billed to the customer for a resource?

A. BPA would calculate the total Rate Period Resource Shaping Charge for the resource and bill it flat monthly by dividing the total charge (or credit) by the months in the rate period.

Section 5.4: Resource Shaping Charge Adjustment

Q. What is the proposed Resource Shaping Charge Adjustment?

A. For each monthly/diurnal period, the Resource Shaping Charge Adjustment would compare the expected energy (as forecast in the rate case) to the actual scheduled generation of the resource. If there was more scheduled generation from the resource than its forecast energy, a credit would be due to account for the over-generation. Conversely, if there was less scheduled generation from the resource than its forecast energy, then a charge would be due to account for the under-generation. The charges and credits would be based on the forecast market value of the energy.

Q. Would all resources be subject to the Resource Shaping Charge Adjustment?

A. No. Only resources purchasing the DFS from BPA would be subject to the Resource Shaping Charge Adjustment. This is because only resources purchasing the DFS would be allowed to change from planned output to actual resource generation. All other resources must meet their contract-defined schedule or be subject to a penalty rate.

Q. What is the purpose of the Resource Shaping Charge Adjustment?

A. The purpose of the Resource Shaping Charge Adjustment is to keep the DFS energy-neutral within each monthly/diurnal period of the year. For the DFS to remain an energy-

1 neutral service, an end-of-month adjustment would have to be made when the resource
2 schedules are more or less than the amount of energy that was expected when the service
3 was priced. Customers purchasing the DFS would have paid for the ability to change
4 scheduled generation for natural variations in output (e.g., ambient temperature, quality
5 of fuel, wind speed, cloud cover). This ability to change scheduled generation would
6 cause a resource to provide more or less energy during a month (heavy load hours and
7 light load hours differentiated) than what BPA would be expecting when the service was
8 priced.

9 Q. *Would BPA apply actual scheduled generation or planned generation against a*
10 *customer's load for purposes of billing the Load Shaping and Demand charges?*

11 A. BPA would apply planned generation against a customer's load for purposes of billing.
12 BPA would do this so that all customers would see a flat annual block of power being
13 delivered to serve load above their RHW. Credits or charges that occurred when the
14 actual scheduled output of a resource was different from the Rate Period forecast
15 scheduled output would be handled through the Resource Shaping Charge Adjustment.
16 Double counting would occur if BPA applied the actual generation against load to
17 determine both the amount purchased from BPA and the Resource Shaping Charge
18 Adjustment.

19
20 **Section 5.5: Forced Outage Reserves**

21 Q. *What would the proposed Forced Outage Reserves (FOR) provide for a resource?*

22 A. The RSS FOR would be a service that backs up the firm portion of a resource. FOR
23 would supplement Operating Reserves Services provided under the Open Access
24 Transmission Tariff (OATT). FOR would apply when Operating Reserves expire.
25 Contracts for FOR would establish notification requirements and limits on energy

1 amounts that would be provided under this product. The definition of Forced Outages
2 would be consistent with the definition of the Western Electricity Coordinating Council.

3 Q. *Would Forced Outage Reserves be required for resources?*

4 A. No. However, if a resource did not schedule its declared firm generation, a penalty rate
5 would apply. FOR would help a customer avoid incurring penalty rates in the event of
6 one of the circumstances under which the customer may call on the service.

7 Q. *Would BPA apply FOR to its Tier 2 System Resources whose costs are allocated to Tier 2
8 Cost Pools?*

9 A. Yes. In order to make BPA's Tier 2 Rates comparable to costs of Non-Federal
10 Resources, the cost of applying FOR would be included in the determination of specific
11 Tier 2 Rates. In addition, without this service there would be a practical issue of BPA
12 charging itself a penalty rate and allocating those costs to the Tier 2 Cost Pool where they
13 belong.

14
15 **Section 5.6: Secondary Crediting Service**

16 Q. *What is the proposed Secondary Crediting Service?*

17 A. This service would allow Load Following customers that dedicate the entire output of an
18 Existing Resource (metered or scheduled hydro) to receive a credit for the amount of
19 energy produced by the resource in excess of its firm critical output (whether
20 dispatchable or non-dispatchable) as long as the resource has both firm critical and
21 secondary energy generation. This service is currently intended to apply to hydro
22 resources but could apply to other Existing Resources if it could be established that the
23 resource has a secondary energy component.

24 Q. *What about new resources that have a secondary component?*

1 A. A Load Following customer with a new dedicated specified resource that has a secondary
2 energy component could purchase DFS from BPA. The credit for secondary energy
3 would be reflected through the Resource Shaping Charge Adjustment.

4 Q. *Why would BPA treat new resources with a secondary component differently than*
5 *Existing Resources with a secondary component?*

6 A. Load Following customers applying new resources with a variable component to load
7 would be required to purchase the DFS, unless the customer committed to an allowable
8 hourly schedule in its contract. The combination of the DFS and the Resource Shaping
9 Charge Adjustment is designed to return to the resource owner a credit for scheduled
10 generation in excess of the resource's planned generation. This mechanism for returning
11 value would capture the benefit of secondary energy. The DFS service is designed so
12 that new resources could comport with different shape requirements that some Existing
13 Resources are not subject to. In addition, the DFS service would not include an ability to
14 apply the resource to the Customer System Peak, similar to what was required under the
15 Subscription contract product Complex Partial with Dedicated Resource. Consequently,
16 we propose to offer Secondary Crediting Service for Existing Resources, so that
17 customers could have a service under the Regional Dialogue Contracts similar to what
18 they have under the Subscription Contracts.

19 Q. *Why would BPA credit secondary energy at a discount from the index market price?*

20 A. The discount from the index market price is intended to capture a combination of
21 transaction costs incurred by BPA for providing this service. These include but are not
22 limited to overhead, odd lot sizes, transmission losses, scheduling, and transmission
23 costs.

24 Q. *Does this mean that the secondary credit for Existing Resources would be smaller than*
25 *the credit provided to new resources?*

1 A. No, the secondary credit for Existing Resources would be different than, but not
2 necessarily smaller than, the credit provided to new resources. It is uncertain whether the
3 secondary credit would be smaller or larger. The credit provided to Existing Resources
4 would be calculated using a discounted actual market price, while new resources would
5 receive a credit equal to BPA's forecast market price minus the rate of the energy
6 component of the DFS. The DFS would need to be purchased for a new resource to be
7 eligible for this credit through the Resource Shaping Charge Adjustment, a service not
8 needed for Existing Resources. Existing Resources would have a choice to purchase the
9 DFS and have the Resource Shaping Charge applied and receive the same treatment, but
10 with that choice the resource would lose added flexibilities that come with its status as an
11 Existing Resource.

12 Q. *Does this conclude your testimony?*

13 A. Yes.
14
15

Attachment A

ANALYSIS OF SLICE REVENUE CHANGE IF TOCA IS LESS THAN 100 PERCENT AT \$60 MARKET PRICE							
Slice percent	Critical System Generation aMW	Tier 1 Net Requirement Total aMW	TOCA total	Effective %	Monthly Rev Reqt	Monthly rate/percent	Total Slice Revenues
22.6278	7400	7400	100	22.6278%	\$ 187,705,407.11	\$ 1,877,054.07	\$ 42,473,604.11
22.6278	7400	7250	97.9730	23.0960%	\$ 187,705,407.11	\$ 1,915,889.67	\$ 43,352,368.33
22.6278	7400	7250	97.9730	23.0960%	\$ 181,135,407.11	\$ 1,848,830.36	\$ 41,834,963.67
					Adjustment to Monthly Rev Reqt		
					\$ 6,570,000.00		
					Unused HWM aMW	Market price	Value @market
					150	\$ 60.00	\$ 78,840,000.00

TRM-12-E-BPA-06

Page A-1

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