

Bonneville Power  
Administration

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# **Slice of the System Product**

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Product Description  
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## **I. Introduction**

The Slice product is defined in more detail than other Subscription products. This level of detail is necessary because the Slice is a new product concept and much different from products BPA historically has offered. Other processes are developing requirements, procedures, and policies that will further define the Slice product. These processes include BPA's 2002 Rate Case, the Slice contract negotiation and development process, and BPA's Section 5(b)/9(c) policy development process. The Slice product will conform to the eventual outcomes of these other processes.

The details provided in this product description are, to a great extent, examples. This Product Description, and the underlying Slice Product, itself, are works in progress.

## **II. Nature of Slice Product**

### **A. General Description**

The Slice of the System Product (Slice) is a power sale that is based upon a customer's annual net firm requirements load and mapped to provide power in the shape of BPA's generation from Federal System Resources over the year. Slice has been developed so as to avoid a cost shift to or from other customers.

Although the calculated percentage of a Slice purchase would not exceed a customer's net firm load on an annual basis, in certain periods of the year and dependent upon water conditions the total amount of megawatt hours provided in those periods might exceed the customer's planned loads.

Slice has firm and nonfirm components. The firm component is based on critical water firm load carrying capability. Because the timing of loads and firm output of Federal System Resources do not match perfectly within the year, the entire firm component may not be available in a shape that can meet the customer's regional consumer loads. Likewise, at other times part of the firm component may be surplus to the customer's regional consumer loads. The surplus firm component is likely to occur in spring months, when water conditions are high and far exceed BPA's planned firm requirements loads in the region. The nonfirm component is surplus power above critical water firm load carrying capability. Nonfirm power is delivered as available in other periods of an operating year.

### **B. Slice Product as a Requirements Product**

Eligibility for the Slice Product is limited to Pacific Northwest public preference customers who request to place their net firm regional load on BPA pursuant to Section 5(b) of the Northwest Power Act. These preference customers have the statutory right to request that BPA offer a contract for the sale of electric power to

serve their net firm regional loads that are not served by such customers' declared firm resources, regardless of the magnitude or duration of such firm loads.

By electing to take service under the Slice Product, these preference customers will agree to have BPA serve a portion of their net requirements load by the Slice Product, and agree to accept power from BPA as it is generated by the Federal System Resources. Under this arrangement, Federal power under the Slice Product will not match consumer load by occasionally exceeding or being less than the net requirement loads of a Slice purchaser. Therefore, the Slice purchaser will declare sufficient firm resources to meet its load in those periods in which the Slice power delivery is less than an annual average net requirement delivered in all months would provide. The Slice Product will provide power in excess of load in other periods within the year and be an advance sale of planned surplus power.

The advance sale of surplus power on a planning basis, within the region to preference customers under the Slice Product, is consistent with BPA's statutory obligations. During any period that BPA is delivering surplus power to any Slice purchaser, BPA will have met its firm power obligations on a planning basis to all regional customer loads that it is obligated to serve. As a consequence, power delivered to a Slice purchaser in excess of its net requirements load at any point in time will be in excess of that customer's and other customers' loads. Pacific Northwest preference customers have a priority in purchasing BPA nonfirm and surplus firm power when it is available.

A customer may make periodic sales of excess power from their own non-Federal resources when a customer displaces its own resources with BPA surplus power purchased under Slice. Power from its non-Federal resources excess to a customer's load may be sold within or outside the region, under the Slice Product. Such non-Federal hydro power that cannot reasonably be conserved or kept available for the utility's use can be sold outside the region if such sale does not increase the firm energy requirements of the Slice purchaser or any other customers of BPA. Sales of such non-Federal power outside the region are not anticipated to increase the net firm load requirements of any Slice purchaser or other BPA customer under BPA's Section 5 contracts.

The Slice contract will only be offered within the 120-day window after the 2002 Rates Record of Decision (ROD) is published. It may or may not be offered in future rate periods.

### **III. Term**

A. Duration

10 to 20 years.

B. No Off-Ramps

There will be no off-ramps to Slice Contracts.

C. Commencement Date

The Slice Contracts will become effective on October 1, 2001.

### **IV. Eligibility**

Only BPA Pacific Northwest public preference customers that have a Northwest Power Act Section 5(b)(1) Net Requirements regional firm load are eligible to purchase Slice ("Eligible Customer"). Slice may be purchased only during the Subscription window.

### **V. Slice Entitlement**

A. Composition of the Slice Entitlement

Slice is a combined requirements and surplus product. That is, the power a Slice Participant receives is a combination of net firm requirements service, surplus firm power, and surplus nonfirm energy.

The Slice Entitlement is not a fixed number, but will depend on water conditions that occur in any given year. The Slice Entitlement is, however, a fixed percentage of the actual output of the Slice System Resources. If critical streamflows (currently 1937 water year) were to reoccur, Slice Entitlement would approximately equal the megawatt-hours of a Participant's net firm requirements over the course of an entire year. However, that amount of firm energy is not guaranteed to be produced or delivered to the Participant, nor is the timing of power deliveries likely to match the Participant's actual net firm requirements over the course of a year. In reality, part of the firm energy will be produced at times and in amounts that make it surplus to the Participant's actual net requirements. This portion is surplus firm power, and is likely to be present during Spring months, when streamflows and reservoir releases are high and loads are moderate.

Surplus nonfirm energy will be produced when streamflows are more abundant than those that would occur with a reoccurrence of critical streamflows. Nonfirm energy may be produced during any month and its occurrence is not predictable, from year to year. The production of nonfirm energy increases the annual megawatthours of Slice Entitlement above those needed to meet a Participants actual annual net firm requirements.

B. Amount of Entitlement

The annual amount of firm net load requirements power that a Participant is entitled to receive is the "Slice Entitlement." Slice Entitlement is a function of applying the Participant's Slice Percentage to the Slice System Generation and assuming no change in storage. Moreover, the exact amount of a Participant's Slice Entitlement on each hour will be influenced by such Participant's on-going use of Slice Entitlement, as reflected in the Participant's Slice System Storage Account. (See section XII. Accounting and section XIII. Scheduling Provisions.)

The Participant may vary the rate of its Slice Entitlement so long as the rate of delivery of Slice is between the maximum and minimum bounds established by BPA. BPA will calculate these bounds by multiplying the maximum and minimum generation of the Slice System by the Participant's Slice Percentage. The Participant's Slice System Storage Account will be used to track the accumulated difference between the power received and the Participant's Slice Entitlement.

A Participant is not required to take delivery of its full Slice Entitlement on any hour. Instead, a Participant has the flexibility to schedule within the maximum and minimum operating limits of the Slice System, which is indexed to the actual capability of the Federal System. When the Participant's request of its Slice Entitlement is below its maximum Slice Entitlement, BPA may use any portion of the unused maximum Slice Entitlement so long as BPA does not restrict the Participant's access to such Slice Entitlement if called upon.

## VI. Slice Percentage

A. Determination of Maximum Percentage

The maximum percentage of the Slice System Capability that an Eligible Customer may purchase ("Maximum Percentage") shall be determined by the following formula:

$$\text{Max Percent} = \text{Net Entitlement} / \text{Total Inventory}$$

Where,



Max Percent = The Maximum Percentage of the Slice System Capability that an Eligible Customer may purchase

Net Entitlement = The annual average quantity of the Eligible Customer's regional net firm load Requirement (measured in average megawatts of energy) calculated for such Eligible Customer in the Subscription Process (using the same methodology and operating year as used to determine entitlements to purchase Partial Block Service)<sup>1</sup> and

Total Inventory = The annual average firm energy load carrying capability (measured in average megawatts of energy) calculated in the 2002 Rate Case for "PNCA-Identified" Federal System Resources, adjusted by System Obligations of the Federal Columbia River Power System (FCRPS) as defined below in Section VI. For this purpose "PNCA-Identified" Federal System Resources are those FCRPS resources identified in BPA's Pacific Northwest Coordination Agreement ("PNCA") 1998-99 data submittal.<sup>2</sup>

Determining an Eligible Customer's Maximum Percentage is a calculation made prior to the execution of a Slice Contract, and its sole purpose is to set the Maximum Percentage available to such customer.

## B. Slice Percentage

An Eligible Customer may purchase a Slice Percentage in an amount up to its Maximum Percentage. The percentage will be fixed for the term of the Slice Contract regardless of whether the Participant subsequently acquires or loses resources or has unexpected temporary load increases or decreases during an operating year or years.<sup>3</sup>

For any Participant, the sum of the net requirements loads used to calculate the Slice eligibility and any other Partial Block Service product shall not exceed the total net firm load requirements of such Participant as determined by BPA under Section 5(b)(1) of the Northwest Power Act.

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<sup>1</sup> To the extent possible, Slice should be consistent with decisions coming out of the Subscription process.

<sup>2</sup> The energy associated with BPA's Inventory Solution is not included in the Total Inventory; Participants pay their proportionate share of the net cost of the Inventory Solution but do not receive any of the increased capability resulting from the Inventory Solution.

<sup>3</sup> The provisions that consider a Participant's loss, on a planning basis, of net firm load requirement are contained in section IX. Load Loss Provisions.

C. Process to Select Slice Percentage

BPA shall identify the Maximum Percentage for an Eligible Customer at the time the Slice Contract is executed. A blank "Selected Slice Percentage Exhibit" will be attached to the contract. Within 120 days following the publishing of the 2002 Rate Case Record of Decision (ROD), the Eligible Customer will notify BPA of whether it wishes to purchase its power service as a Slice. The Eligible Customer must also state its selected Slice Percentage and there will be a one-time revision to the Selected Slice Percentage Exhibit to show the selected percentage. If the Eligible Customer states zero percent, the Slice Contract will terminate.

## VII. Slice System Capability

The Slice Product is a power sale and not a sale of Federal System Resources. The power sale is indexed to and follows the capabilities of an agreed-upon and specific set of Federal System Resources.

A. Slice System Resources<sup>4</sup>

The Federal system resources that comprise the "Slice System" include the Federal System Resources identified by BPA in its 1998-99 Pacific Northwest Coordination Agreement data submittal. Those resources are reflected on Attachment 1.

B. Capability of "Slice System"

The capability of the "Slice System" is the actual energy capability of the "Slice System Resources", after adjusting for all non-power requirements and unit outages.

Energy capabilities of the "Slice System" will be monitored by the BPA Power Business Line (PBL) and will be updated as necessary.

C. System Obligations

System Obligations are the net power obligations of BPA that support the FCRPS and other Federal commitments related to the Federal System. Net power obligations, as used in this context, mean the accumulated increases and decreases in energy capability as well as generation. BPA will adjust the Slice System

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<sup>4</sup> BPA has used the term Slice System Resources to denote those Federal resources upon which BPA will base the Slice Product. This is done to recognize the fact that during the contract BPA may add by purchase or acquisition new resources to the Federal System Resources which, except as provided under section VI.D. Upgrades, Adjustments, Acquisitions and Replacements, may not be included as a part of the Federal System Resources upon which the Slice is based.

Capabilities as well as the Slice Entitlement for any net power obligations that are energy transactions either into or out of the Federal system. For net power obligations that do not change the amount of energy production, BPA will adjust the Slice System Capabilities but not the Slice Entitlement. For example, if a system obligation was an obligation to hold an amount of generating capability for reserves the maximum and minimum Slice System Capabilities would be adjusted but not the Slice Entitlement.

Some obligations are BPA obligations, only, and not System Obligations. The test for determining whether an energy obligation is a System Obligation or only an obligation of BPA is whether the system would still have the commitment if 100 percent of Federal net firm requirements load obligation in the region was served through Slice purchases.

System Obligations that are currently known include the net of all transactions associated with:

1. Canadian Entitlement obligations;
2. Hourly Coordination obligations;
3. Pacific Northwest Coordination Agreement (“PNCA”) obligations<sup>5</sup>;
4. Non-Treaty Storage obligations;
5. Biological Opinion obligations; and
6. System commitments to BPA’s Transmission Business Line (TBL), including reserves and generation dropping under the remedial action scheme (“RAS”)<sup>6</sup>. A complete list of these commitments will be developed in the Slice Contract negotiation.

D. Upgrades, Adjustments, Acquisitions, and Replacements

The composition and generating characteristics of the “Slice System Resources” shall remain constant over the term of the Slice Contract, with the exceptions listed

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<sup>5</sup> All PNCA energy transactions will be accommodated prior to BPA calculating the Slice System Capabilities. BPA will not adjust its resource declarations under the PNCA for Slice. Other Participants will reflect their Slice Entitlement as a firm transfer in PNCA firm planning. Parties to the current PNCA at the time of execution of the Slice Contract will be required to execute the 1997 PNCA.

<sup>6</sup> At this time, PBL will treat the obligations it owes to TBL as System Obligations. For example, a Participant will be affected the same as PBL when a RAS is put in place (generation capability will be dropped). To the extent PBL receives revenues for these System Obligations, it will credit such revenues to the Slice Revenue Requirement. Notwithstanding this, PBL expressly reserves the right to choose to supply these System Obligations out of its “Slice”. Such determination shall be made before the Slice Contract is finalized.

below. Generating characteristics, for this purpose, are the physical generating characteristics of a project before operational limits are applied. The capabilities of the “Slice System Resources” are expected to vary as operating requirements change.

The exceptions are:

(1) Physical Upgrades or Adjustments

Any physical upgrade or adjustment (increase or decrease) to a “Slice System Resource” or to a unit of a “Slice System Resource” will be included in the “Slice System” and, as such, the Participants shall be responsible for their proportionate share of the associated costs of such upgrade or adjustment. Adjustments may also include the removal or diminishment of a “Slice System Resource” (for example the removal of a dam or a generating unit). BPA shall provide Participants with advance notice of the upgrade or adjustment.

(2) Public Purpose Resource Acquisitions

Any Public Purpose Resource Acquisition made by BPA will be included in the “Slice System” and, as such, the Participants will be responsible for their proportionate share of the associated costs of such Public Purpose Resource Acquisition. The capability of the “Slice System” will be adjusted to reflect such addition to the “Slice System.” BPA will provide Participants with advance notice of any Public Purpose Resource Acquisition.

(3) Resource Acquisition by BPA

BPA will not be obligated by the Slice Contract to acquire resources for any reason, including the replacement of resources that are part of the Slice System. Nothing in the Slice Product will affect the respective rights and obligations of the parties pursuant to section 6(m) of the Pacific Northwest Electric Power Planning and Conservation Act (NW Power Act). Any BPA offer of participation under section 6(m) made to a Slice Participant will be made by a separate purchase contract.

(4) Federal Base System Replacement Resources

If BPA acquires a resource that it designates as a Federal Base System replacement resource, a Slice Participant may elect to participate in such resource. If that is the case, the contract governing the new resource will set forth the conditions for such purchase and may include terms under which the Slice Participant’s share of such resource may be coordinated with its Slice share.

(5) Protection for “Dry Hole” Risk

If the Slice Entitlement drops to zero (the capability of the Slice Resources drops to zero), then the Participant may request that BPA purchase energy on its behalf to the extent such power is available to BPA. The Purchaser will pay for all costs associated with such purchase.

E. Economic Displacement of WNP2

Each Slice Participant will decide annually whether to participate in economic reductions of WNP2 to levels other than zero. Once the decision has been made, the Participant will abide by that decision for the year. When BPA reduces the WNP2 generation for economic reasons to a level other than zero, the PBL will give the Participant notice of such reduction three days before the reduction will begin.

For economic reductions in the plant that take the plant’s generation to zero, the same 3-day notice will apply. For these reductions, Participants will not have to make annual commitments on whether or not to participate in the reduction to zero. Rather, Participants will make determinations on a case by case basis.

Under either case, if a Participant takes energy based on the full output from WNP2 instead of the reduced output, the Participant will purchase that additional energy from BPA at the incremental price of WNP2.

F. Declared Resources

The Participant’s declared resources at the time of the Subscription window, as defined by the 5(b)/9(c) policy, will be termed the Initial Declared Resources (IDR). The Participant may add to the IDR to complement its Slice Entitlement by declaring additional resources. A Participant may reduce the IDR only as allowed in the 5(b)/9(c) policy.

If the Participant’s IDR, Slice share, and PF Block are not sufficient to cover its Requirements load for the coming year, the Participant shall place market purchases into the Declared Resources to cover the deficit. Once declared, such market resources will remain in effect for the duration of the rate period. BPA will consent, on an annual basis, to reduce the Participant’s market resources to the extent the current level of market resources cause the sum of the IDR, Slice share, PF Block, and market resources exceed the Participant’s Requirement load.

## VIII. Payments

The Slice Revenue Requirement is being decided in the 2002 Rate Case. The Slice product will be modified to conform to the outcome of the 2002 Rate Case. BPA is proposing that the Federal Energy Regulatory Commission (FERC) approve the Slice rate for five years and approve the Slice rate design for 10 years. If the FERC does not grant such approval, the Slice Participants may convert to another form of requirements service, and conversion will be the Participants' only remedy.

A. Components of the Slice Revenue Requirement

(1) Power Business Line's (PBL) Revenue Requirement

The Slice Revenue Requirement will be comprised of all of the line items in PBL's revenue requirement as identified in all of PBL's rate cases for the years that are within the term of the Participant's Slice Contract, with the following exceptions:

- a. Transmission costs (other than those associated with the fulfillment of System Obligations);
- b. Power purchase costs (with the exception of those net costs incurred as part of the Inventory Solution discussed below); and
- c. Net Revenues for Risk

(2) Depreciation of Costs within the Term of the Slice Contract

Recovery of capital investments shall be through depreciation expense as reflected in PBL revenue requirements. Similarly, if BPA incurs a cost that is eligible for inclusion in the PBL revenue requirement and chooses to depreciate its payment obligation over a multi-year period, BPA will correspondingly depreciate the payment obligation in the Slice Revenue Requirement.

(3) Costs Depreciated Beyond the Term of the Slice Contract

The Participants shall be treated consistently with other rate-payers. If the other rate-payers will be responsible for the depreciation costs during the current rate period then Participants also will be fully responsible. If other rate-payers will be responsible only for a portion of such depreciated costs then the Participants also will be only responsible for their proportionate share of such portion.

(4) Previously Unidentified Costs

If a BPA cost arises that was not previously identified, it is included in the Slice Revenue Requirement in the same manner as in PBL's rate case

revenue requirements. The cost is included to the extent it would exist if 100 percent of Federal net firm requirements load obligation were met through Slice or if it is related to a system obligation as described in section VI, above.

(5) Inventory Solution

(a) General

It is anticipated that as a result of BPA's current Subscription process, BPA may take steps to supplement the capability of Federal System Resources. This supplementation is referred to as the "Inventory Solution". The Participants will share in the estimated net cost of the Inventory Solution, although the capability of their "Slice Systems" will not be adjusted. Although the form of the Inventory Solution it is not currently known, the governing Slice principle is that whatever is agreed to in Subscription will carry over into the Slice Contracts.

(b) Calculation of the Net Cost of the Inventory Solution on a Projected Basis

The estimated net cost of the Inventory Solution will be placed in the Slice Revenue Requirement. The 2002 Rate Case will address whether or not the Inventory Solution should be trued-up for actual costs of inventory augmentation.

(c) Inclusion of Net Cost of Inventory Solution in the Slice Revenue Requirement

1) First Rate Case five-year Period (2002 through 2006)

The estimated net cost for the Inventory Solution identified in the 2002 Rate Case (including the Inventory Solution for both short- and long-term power sales contracts) will be included in the Slice Revenue Requirement on a uniform monthly basis during 2002 through 2006. The estimated net cost will be calculated as the projected expense for the Inventory Solution less the expected revenues for the sale of such inventory enhancement as assumed in the Rate Case. The net cost could be a positive or negative number.

For example, if the 2002 Rate Case assumes the Inventory Solution will cost \$30 million for power purchases to serve load that will pay \$20 million for the power, the net cost to

be added to the Slice Revenue Requirement will be \$10 million.

2) Subsequent Rate-Case Periods

Prior to publishing the 2002 Rate Case ROD, BPA will hold a public process to determine whether to clearly define the amount of Inventory Solution that the Slice Participants will be obligated to participate in after 2006. There should be reasonably equitable treatment of Slice Revenue Requirements and other 10-year (or longer) Subscription requirements contracts regarding payment for the net cost of any "Inventory Solution". Exclusion of the net costs of resources to replace FBS resource degradation is an example of adjustments that may be needed to achieve such equitable treatment.

(6) Physical Upgrades or Adjustments

The costs of any physical upgrade or adjustment (increase or decrease) to a "Slice System Resource" or to a unit of a "Slice System Resource" will be included in the Slice Revenue Requirement.

(7) Public Purpose Resource Acquisitions

The costs of any Public Purpose Resource Acquisition will be included in the Slice Revenue Requirement.

(8) Federal Base System Resource Replacements Included in the "Slice System Resources" upon mutual agreement between BPA and a Participant

If BPA acquires a resource that it designates as a Federal Base System replacement resource, a Slice Participant may elect to participate in that resource. The Participant may have the resource included in its "Slice System Resources," in which case the contract governing the new resource will set forth the terms for inclusion of its costs in the Slice Participant's share.

(9) Credits

Any monetary credits that the PBL receives for items in the Slice Revenue Requirement will be credited to such Revenue Requirement. Such credits include Treasury credit for the PBL's settlement payment to the Colville Tribe, credits under NW Power Act section 4(h)(10)(c), and Fish Cost Contingency Fund (FCCF) credits. The effect of crediting the Slice



Revenue Requirement will be that the benefits of such credit are shared proportionately by BPA and all Participants.

If BPA receives revenues in payment for fulfilling System Obligations, the revenues that are attributable to the sale of capability included in the “Slice System” will be credited to the Slice Revenue Requirement. Any revenues attributable to a Federal Base System Resource replacement that the Participant chose not to participate in will not be credited back to that Participant’s Slice Revenue Requirement. Any revenues BPA receives from remarketing power under a Slice Contract will be credited back to the Participant’s Slice Revenue Requirement.

Since the Participant will be entitled to its share of the conservation funds provided by BPA, it will also be responsible to pay its appropriate share of such funds.

(10) Inapplicability of Cost Recovery Adjustment Clause (CRAC)

Participants will pay a percent of the Slice System’s actual, as opposed to forecast, costs through the Slice true-up mechanism. Therefore, Participants will not be subject to application of the CRAC on their Slice purchases. If a Participant also purchases a flat block under Partial Requirements, that block will be subject to application of the CRAC.

B. Additional Payment Obligations

(1) Slice Administrative Expenses

The Participants will pay all overhead costs incurred by BPA that are attributable to implementing Slice. The detailed costs, enhancement costs, and line items will be noted in an exhibit prior to a final Slice Contract being offered for execution. These costs will be categorized into general costs (payable by all Participants in proportion to their Slice Percentages) and specific costs (attributable to individual Participants as incurred specifically for the benefit of such Participants.) An example of specific costs is the cost of direct signaling.

(2) Unauthorized Increased Charge

A Participant that takes energy from BPA in excess of the sum of its Slice Entitlement and all other contracts with BPA, will be charged for such excess at the Unauthorized Increase Charge under the Priority Firm Power Rate.

(3) Transmission Costs

The Participant is responsible for acquiring and paying for all transmission services required for its Slice Entitlement.

C. Payment Obligation

A Participant will pay its annual share of the costs of its “Slice System.” The amount of a Participant’s annual obligation will be calculated by multiplying the sum of all the costs described in subsection A., above, by the Participant’s Slice Percentage. In addition, each Participant will pay its share of the Slice administrative expenses as described in subsection B.(1) above.

D. Payment Schedule

(1) Periodic Payments

A Participant will pay its annual Slice payment in 12 equal monthly payments.

(2) True-Up for Actual Expenses

By March of each year, BPA will calculate the difference between the forecasted Slice Revenue Requirement and actual expenses for Slice Revenue Requirement Items, to the extent they are known at that time, for the previous fiscal year. . The April payment then will be adjusted by the difference. If a previously unidentified cost arises during the year, it will be included in the true-up costs. Slice administrative costs also will be included in the true-up costs.

The estimated net cost of the Inventory Solution will not be subject to the true-up mechanism. Such costs will be paid by the Participants on an estimated basis.

The true up payment may be spread over more months. Cost data for the previous fiscal year will be reviewed as it is available in November and an estimated true up calculated. Payments of this estimate would be spread evenly over the months of January, February and March. A final true up payment based on the actual costs and adjusted for true up payments made over those three months would be due in April.

## **IX. Deliveries of Power**

A. Participants' Acceptance of the Operating Decisions of the Federal Government

The Participants are obtaining a right to purchase power mapped to the Federal system's generating resource capability. The Participants are not buying any right to operate or control the Federal system resources by purchasing Slice. Participants' "Slice System" does not convey any right in the Federal system other than the right to take power from the Federal system in specified amounts at various times as calculated by the principles stated herein. Participants will agree to accept and not contest, challenge or litigate the results of the operating decisions of the Federal government (acting through relevant Federal agencies and other entities) regarding the Federal system, including decisions relating to any non-power requirement being added to or deleted from the Federal System obligations. Examples of non-power constraints on the Federal System could include: (i) the Biological Opinion ("BO"), (ii) maximum and minimum rates of change on a forebay, tailwater, or discharge at a project, or (iii) BPA's decision to operate conservatively in January and February to ensure that the Federal System will meet the flood control requirements in April under the BO.

#### B. Scheduling

Power will be scheduled hourly within the (pro rata) limits of the energy capabilities of the "Slice System," calculated for each Participant. (See Section XIII. Scheduling Provisions below for daily scheduling details.) When everyone is satisfied that the algorithm developed to determine "Slice System Capability" is satisfactory, interested Participants will be able to work with the PBL to develop a strategy for sending a dynamic schedule to schedule their Slice Entitlement. The ability to dynamic schedule is subject to the final approval of the BPA Transmission Business Line (TBL). All costs to do this will be borne solely by those Participants wanting to schedule by dynamic schedule. It is recognized that there will be special issues for Participants in BPA's load control area that schedule Slice and who purchase dynamic load service from BPA. This will be one of the items worked out in developing a strategy for sending a dynamic schedule. For example, with appropriate metering and communications facilities, it is technically feasible to treat such a customer as a nested control area. The PBL is not committing to this approach since the final decision would rest with TBL.

### X. Load Loss Provisions

#### A. Need for Provisions

In the event that, on a prospective (annual planning) basis, the requirements portion of the Participant's Slice Entitlement exceeds the Participant's net annual firm load requirement, BPA may need to take corrective action. The treatment for Slice should parallel the treatment of a customer facing similar net annual firm load reduction circumstances with a Block requirements product. However, the treatment cannot be exactly the same since the Slice Product has unique

characteristics. Slice is a combined requirement and surplus product, and the firm energy portion is not guaranteed to be delivered.

B. Procedures<sup>7</sup>

Upon the Participant's notice to BPA that its firm consumer load is expected to fall below the level assumed in the determination of the Maximum Slice Percentage, the Participant and BPA shall take the following actions:

(1) Declaration of the Participant's Net Requirement

On an annual basis, the Participant shall submit a forecast of its annual<sup>8</sup> net firm load requirement using a revised load forecast and the updated Declared Resources Exhibit. The Participant also shall submit monthly consumer load, as adjusted by power exchanges with other entities to provide service to the Participant's consumer load. From these submittals BPA will estimate the requirement portion of the customer's Slice for the next operating year.

(2) Calculation of Participant's Critical Slice Entitlement

BPA will calculate the Participant's annual Slice Entitlement using the critical water condition that was used for the previous Rate Case.

(3) Comparison of Net Requirement to Critical Slice

BPA shall subtract the Participant's annual average Critical Slice Entitlement from the Participant's annual average Net Requirement. If greater than or equal to zero, no action is required. If negative, the Participant shall reduce the market purchases in its Declared Resources Exhibit as needed to bring the difference to zero. If the difference is still negative, BPA shall take the following actions:

(a) Convert to Surplus

If BPA is able to meet its total firm load obligations on a critical water basis, (including the Participant's Critical Slice Entitlement) then BPA shall deem that portion of the difference between the Critical Slice Entitlement and the Participant's net firm load requirement as being converted to surplus power. The portion will be deemed to be offered at the Slice price, under the contract, with no further action or adjustment in price needed (for that portion). Since the Slice payment is for the total of the requirements and

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<sup>7</sup> This procedure would be modified to conform the treatment of load loss under Slice to that applied to the Block product.

<sup>8</sup> The scope of the examination of a Participant's net requirement would be adjusted to match the procedure used in the Block product. An annual determination was assumed for illustrative purposes only.

surplus power portions of the product, any adjustment that increases one by decreasing the other would not affect the total price.

(b) Withheld and Sold

That portion of the excess Critical Slice Entitlement that is not excess to BPA's regional firm load and cannot be converted to surplus shall not be supplied to the Participant but will be withheld and will be used by BPA to meet its other firm load. The annual quantity withheld shall be calculated as monthly quantities shaped to the same monthly distribution as the Critical Slice Entitlement. The reduction shall be uniform within each month (100 percent load factor) and shall reduce the Participant's Slice Entitlement, Maximum Slice Entitlement, and Minimum Slice Entitlement. The Participant's Slice payment shall be credited with the amount received by BPA's Power Business Line resulting from the sale of the energy, less any BPA re-marketing fees.

## **XI. General Contract Provisions**

A. Uniform Terms and Conditions

All Slice Contracts will have the same basic terms and conditions for each Participant with some exceptions. Exceptions will include: the selected Slice Percentage, the combination of Slice and other BPA products, the election to participate or not in a Federal Base System (FBS) Resource replacements, elections as to the type of scheduling, the type and detail of system information and other administrative choices made or negotiated between BPA and the customer, appropriate billing based on the choices made, and information pertaining to the Participant. Over time, if a Participant elects to purchase power from resources that BPA acquires as replacements for the FBS, the Federal System Resources considered as part of a Purchaser's "Slice System Resources" and included in its "Slice System" may vary.

B. Contract Implementation Group

(1) General

BPA and each Participant shall designate a representative to a Contract Implementation Group ("CIG"), which will meet on an as-needed basis. The CIG will be responsible for formulating and establishing implementation details not defined by the Slice Contracts. The CIG will be the main forum for Participants to discuss their concerns and issues. The

CIG will not have the authority to make binding decisions or amend any Slice Contract provisions.

(2) Voting Procedures

Changes or additions to implementation details proposed to the CIG will be adopted when approved by BPA and a two-thirds majority of the Participant representatives. Any modification of contract terms will require mutual consent between BPA and the Slice Purchaser.

C. Renewal Provision

There will be no renewal provision in the Slice Contracts.

D. Assignment Provisions

The Slice Contracts will contain an assignment provision similar to current BPA contracts that allow assignments to Federal Agencies and, subject to the consent of BPA, to qualified purchasers.

E. Conversion

Upon the occurrence of any of the following events, a Slice Participant may request and receive other power products from BPA to serve its net requirements load. These products would be under the same rates, terms, and conditions as other preference customer requirements loads that had continuously received service from BPA commencing on October 1, 2001.

- (1) If, by the action of a party that is not a Participant, the Slice Contract, or the performance of such contract, is held to be invalid or unenforceable, or enjoined by a final order of a court, and such order is not stayed, pending any appeals, then the Slice Participant may terminate and request replacement of the Slice Contract upon 30 days' written notice to BPA;
- (2) The Slice Contract expires according to its terms; or
- (3) If, at the conclusion of a transmission rate case, there is no transmission service available for the Slice Product, then the Slice Participant may

terminate and request replacement of the Slice Contract upon 30 days' written notice to BPA<sup>9</sup>.

- (4) If the Federal Energy Regulatory Commission (FERC) does not approve the Slice rate design through 2011, the Slice Participant may terminate and request replacement of the Slice Contract upon 30 days' written notice to BPA.

If a Participant needs to convert to another Subscription product based on (1), (3), or (4) above, the Participant must either take the entire amount of megawatts signed up under Slice, or add enough firm resources to its Declared Resources Exhibit to cover the entire amount of megawatts signed up under Slice.

## **XII. Dispute Resolution**

### **A. Slice Dispute Resolution Process**

Any Participant wishing to invoke dispute resolution shall first bring the matter in dispute to the CIG. The CIG shall take prompt steps to seek a mutually agreeable resolution of the dispute. Such steps may include the appointment of a technical panel to help resolve the dispute. The actions of the CIG regarding any dispute shall not be introduced as evidence in any subsequent dispute resolution process.

The dispute resolution provisions for Participants will be different than the general dispute resolution provision for other Subscription Contracts since the Slice Product is indexed to Slice System Capabilities and is not load dependent. For purposes of dispute resolution, BPA will agree to mediation of any dispute. BPA will agree to a one-time election by the Slice customer of either litigation or binding arbitration. If binding arbitration is selected, the arbitration provision will limit the arbitration to specific topics such as mistakes in the provision of information to the Participant, errors in the billing or true up charges, as stated below. It will also specify the manner, timing, initiation, and recourse for the arbitration. Litigation will be in federal court having jurisdiction.

### **B. Federal Operational Decisions Not Subject to Arbitration**

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<sup>9</sup> The Slice Product is different from other products being offered by BPA in that the power delivered to the purchaser is indexed to the generation of the Federal System Resources. Due to the nature of the Slice Product, the Participant will not be able to predict with certainty either the quantity of power that may be delivered, nor the Federal resources actually used to generate such power. The delivery of the Slice Product presents transmission issues that are currently unresolved. To deal with this uncertainty, the contract for the Slice Product will include a provision that allows the Participants to convert to other subscription products in the above-described situations.

Federal agencies' decisions and actions relating to any matter described in section VIII.A. or relating to the operations of Federal System Resources that are also Slice System Resources are not subject to dispute resolution and are not topics to be discussed by the CIG.<sup>10</sup>

C. Scope of Dispute Resolution

The Participants may only address the following matters in dispute resolution: (i) what items were or were not included in the true-up, (ii) Slice System Storage Account errors, and (iii) errors in the amount of power that was scheduled (including whether there was intentional misrepresentation of operating requirements that resulted in unnecessary limitation in power deliveries). A Participant may not raise errors in forecasts of Federal generation or of customer load as a subject for dispute resolution.

### **XIII. Accounting**

A. Development and Testing of Slice System Storage Accounting (SSA) Algorithm

*(The following subsections set forth a method for implementing the technical aspects of the Slice Product. BPA and the parties will continue their efforts during the Subscription process and set-up phase to streamline and simplify the methodology for implementing the Slice Product. Flexibility will be provided in the contract to allow BPA and the Participants to alter the algorithms for computing Slice Entitlements and the accounting of the Slice System Storage Account (“SSA”).)*

BPA will establish and maintain for each Participant a SSA in order to determine if each Participant is staying within the limits of the “Slice System Capability” to store energy and later release stored energy. Given the unique nature and application of this storage account, BPA will work with the Participants to determine the best approach and application of a storage accounting system. Given that, BPA proposes, as a starting point the following methodology.

The SSA, unlike a normal storage account, will not be measured in absolute terms (from full or empty). Instead, the SSA will be measured in terms of the energy (megawatt-days) deviation from the Federal System operation on each day. A megawatt-day is the amount of energy equal to delivery of one megawatt of energy during each hour of a 24-hour period. Therefore, if a Participant requests (and receives) its percent share of the energy produced by the Federal System during a day, there is no change to its SSA.

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<sup>10</sup> The Corps of Engineers and the Bureau of Reclamation are in charge of operating the reservoirs and they are not interested in having arbitrations based on reservoir operations.



The algorithm for the SSA will be developed and tested prior to October 1, 2001. The Participants will participate in this process. The cost of developing the algorithm for the SSA will be an administrative cost of Slice to be borne by the Participants. Accordingly, the algorithm may be as complex or as simple as desired by the Participants. In any event, the algorithm cannot produce results that indicate Participants should receive more than their percentage share of the Slice System. BPA will correct the algorithm if it produces such results.

B. Maintenance of Slice System Storage Account Activity

BPA will maintain each Participant's SSA and update it each normal weekday. BPA will send the update to the Participants each time the account is updated. The following paragraphs describe the maintenance and updating procedures.

(1) Account Balance at the Start and Finish of the Contract

At the start of the Slice Contracts, BPA will initialize each Participant's SSA to zero. Each Participant will be responsible for returning its account balance to zero by the end of the Contract unless actual system requirements (non-power requirements) force a deviation from zero.

(2) Measurements for Account Balance

BPA will maintain for each Participant (including the PBL) and the aggregate "Slice System" a SSA in terms of megawatt-days. The aggregate system shall be used to calculate the storage limits that will then be imposed on each Participant's SSA. BPA will start each Participant's SSA at zero and calculate a change in each Participant's SSA for each day based on the difference between the generation from the Federal System and the Participant's requested energy. The SSA is subject to adjustments for water-to-energy conversion efficiencies, spill, and other operational considerations.

(3) Maintenance of Slice System Storage Account (SSA) Within Maximum and Minimum Storage Limit

The SSA must always be within the maximum and minimum storage limits that BPA will continually update. Each Participant's SSA maximum and minimum storage limits will be the product of the Federal System's limits and the Participant's Slice Percentage.

(4) Updates of Maximum and Minimum Hourly Entitlements

BPA will update each Participant's hourly maximum and minimum entitlement for the next preschedule day(s). The average Heavy Load Hour (HLH) and Light Load Hour (LLH) entitlement will be projected out

for 7 days and will be based on the then-known power and non-power requirements.

(5) Balances Outside of the Maximum and Minimum Bounds

If a Participant's SSA goes above the maximum bounds on a day, BPA will keep the account at the maximum limit and any excess will be considered spilled (even if no physical spill takes place). If the SSA goes below the minimum bounds, the Participant will pay an Unauthorized Increase Charge (to be developed in the relevant rate case). If a Participant's SSA is out of bounds as a result of a BPA forecasting error, there will be a grace period allowing the Participant to manage its account and get it back within bounds without penalty.

(6) Slice System Storage Account to Handle Physical Energy Transactions Associated with "Slice System Resources"

The SSA is based only on the Federal hydro resources. All other energy from other Federal resources (including PNCA, Non-treaty storage, and WNP2) will be handled by adjusting the maximum and the minimum hourly and daily entitlements by the Participants share of the energy production.

(7) The Slice Participants will be able to store in each other's Slice accounts.

Participants will need to notify BPA prior to the storage transaction taking place. Such storage will be with the stipulation that the Participant receiving the storage will not generate energy from the storage, but will, instead, hold it until the original Participant requests it back. In this way, the Participants will not be pooling their Slice shares.

C. Determination of Slice System Energy Capabilities

(1) Hydro-Energy Capabilities Based on Individual Slice System Storage Account Balances

For purposes of taking delivery of energy, the "Slice System's" hydro-energy capability for each Participant will be based on the Federal System's capability at that time.

(2) For Purposes of this Subsection, Power Business Line (PBL) Considered Participant

For purposes of determining "Slice System" energy capabilities, BPA's PBL will be considered a Participant.

(3) Calculation of Participant's Slice Entitlement

For each hour, BPA will calculate for each Participant its Slice Entitlement, based upon a percentage of the total "Slice System" energy capability less all System Obligations.

(a) Use of Slice Entitlement to Be Determined with Reference to "Slice System"

BPA shall set the "Slice System" initial storage condition equal to where the Federal System is at that time. The capabilities of the "Slice System" shall be ratably reduced to reflect the Participant's percent share. This means that if a Participant with a 10 percent share wants to increase the next hour's schedule by 50 megawatts, then the Federal System will need to be able to increase by 500 megawatts for the next hour to accommodate the change. The hourly rates of change will also be based on the hourly ability of the Federal System to increase or decrease.

(b) Distribution of Storage

The Slice Participant receives energy as a share of the Federal System, not a share of any individual project. Therefore, the SSA will be based on conditions of the Federal System, not on those of individual projects.

(c) Calibration of Energy Capabilities

BPA will calibrate the forecasts of energy capabilities so that the sum of the parts equals the whole. BPA will ratably adjust the forecast of each Participant's Slice energy capabilities (generation from natural flows, maximum generation, minimum generation, maximum and minimum rate of generation change) so that the sum of all of the Participant's Slice capabilities equals the forecasted actual capabilities of the "Slice System."

(d) Initial Methodology of Calculating Energy Capabilities; Subsequent Efforts

In the initial stages of implementing Slice, BPA will calculate "Slice System" energy capabilities on a conservative basis, with a minimum of effort, in a manner agreed to by all Participants. The non-BPA Participants will decide jointly if additional effort and expense will be expended to get more precise forecasts of capabilities. Since the Participants pay for implementation costs, they will determine the degree of additional precision they desire.

Never-the-less, BPA must agree that whatever methodology is ultimately used results in sound forecasts for the “Slice System” Capabilities.

(4) Estimation of HLH and LLH Entitlements

BPA will estimate the average HLH and LLH entitlements for the 7-day projections in 8-hour blocks using a hydro-regulation simulation that BPA uses to create 30-day Forecasts or their replacements.

(5) Hourly Estimates

BPA will use the 30-day model in combination with an hourly hydroregulation model known as SH-1, or its replacement, to determine hourly estimates for the preschedule day(s).

#### **XIV. Scheduling Provisions**

A. Communication of Slice System Capabilities

The PBL will keep the Participants updated via E-mail on current non-power constraints on the “Slice System Resources”. BPA’s real-time scheduler will also notify the Participants of anything that impacts their rights on real-time and it will be up to the Participant to change their preschedule if needed to stay within the new maximum and minimum bounds.

The specific data that BPA will provide to the Participant will be specified in an exhibit to the contract. The data will include information that the Participant needs to manage the Slice Product. BPA may make additional useful data available to the Participant so long as BPA does not consider the information market sensitive. The list of data will be established as soon as possible after the method of computing the Slice Entitlement and the method for maintaining the SSA is established. The contract will have provisions that will allow BPA and the Participants to revise the exhibit as changes to the methodology come about.

B. Prescheduling/Direct Scheduling

The Participant is limited to prescheduling its Slice Entitlement until such time as all parties are satisfied that the algorithm is running properly. At that point, those Participants that want to have their Slice Entitlement delivered by a direct schedule will work with PBL to set that up. Using a direct schedule will be solely at the direct scheduling Participants’ cost.

C. Changes to Preschedules

A Participant may change its Slice Entitlement preschedule for any reason up to 30 minutes prior to delivery of such Entitlement. However, the changed preschedule must stay within the “Slice System” limits (rate of change, maximum and minimum bounds) established for that hour.

D. Permissible Real-Time Changes

A Participant may make real-time changes to its Slice Entitlement preschedule less than 30 minutes before the hour for the following limited reasons:

(1) Outage of a “Slice System Resource” Unit

A “Slice System Resource” unit that was actually generating energy has an outage;

(2) Outage of a Participant’s Resource or Force Majeure of Firm Contract

A nonfederal Participant’s system unit that was actually generating energy has an outage or a Participant is not able to take energy pursuant to a firm contract given a force majeure situation;

(3) Limits on Real-Time Changes

The outage of a resource on either the “Slice System” or an individual Participant’s system is not intended to allow carte blanche changes to the preschedule. The maximum change allowed in the hour will be the Participant’s share of the “Slice System” outage or the magnitude of the outage on the Participant’s system that the Participant was actually getting generation from at the time of the outage. Such change must also stay within the maximum and minimum bounds (as adjusted for any unit changes on the “Slice System”) available to the Participant.

E. Reserves for Participants

Providing reserves and Remedial Action Scheme (RAS) for the Federal System out of its Slice share will be a System Obligation for the Participants. The Participant will receive a share of the revenue PBL receives for providing energy to the BPA Transmission Business Line (TBL) for reserves and will pay a share of the reserve expenses in the revenue requirement. The Participant’s share of access to the FCRPS capability will be reduced by the amount of reserves provided.

F. Transmission Requirements

The Slice Participant must take the requirement portion of its Slice energy to its load. If the Participant does not schedule at least this amount of energy, penalties (that are yet to be determined) will be applied.

## **XV. Combining Slice With Other Subscription Products**

### **A. Blocks of PF Energy**

In combination with Slice, the Participant can purchase an annual flat or shaped block of PF energy from BPA at 100 percent monthly load factor. The Participant also may negotiate for monthly blocks of energy under the Firm Power Products and Services rate. The Participant may not purchase, in combination with Slice, inclined blocks, Factoring, Capacity, or any other staple-on product that shapes the Slice or Block products. These products may, however, be purchased at market prices from the PBL outside of Subscription.

### **B. Slice Cannot be Combined with Actual Partial Service Product Purchases**

A Participant may not combine a Slice purchase with an actual partial service product purchase.

### **C. Limit of the Total Requirements Purchased**

For any Slice purchaser, the sum of the net requirements loads used to calculate the Slice eligibility and eligibility for any other block requirements product shall not exceed the total net requirements of such Participant.

Participants may experience load growth over the term of the Slice Contract. Load growth is not covered by the Slice Product. The Participant may supplement Slice with a PF Block product in a future Subscription process to cover load growth. The PF block product can be flat or a shaped block where the delivery rates vary by month, but with each month's delivery at a 100percent load factor. Factoring, Capacity, or any other staple-on product that shapes the block product will not be allowed in combination with Slice. There is no guarantee that the Participant will be entitled to the lowest PF rate for block purchases to serve load growth.

The Participant may not buy a PF Block product to cover the loss of Federal System capability during the term of the contract. This loss is one of the risks that the Participant takes on through Slice.

D. Required Purchase of Energy Imbalance Services

Since the Slice Contract does not guarantee to follow a Participant's load, a Participant in BPA's load control area must insure that energy imbalance services, or equivalent products, are provided for the duration of the Slice Contract.

## **XVI. Joint Management of Slice Entitlement**

The Slice Product is a sale of firm power to meet a customer's net firm consumer load on an annual planning basis. Therefore, BPA will apply the same sale policy to the Slice Product as BPA has applied to its other firm requirements products. BPA will understand its net firm load obligation to a customer, whether sold as Slice or not, as individual to that customer and sold for use in meeting that customer's load. Net firm load requirement power is intended to meet the Participant's consumer load and it must be used by the customer to meet that load. It is not power to be resold at wholesale on the market, although it may be exchanged and later taken into load.

## **XVII. Stay flexible!**

BPA Transmission Business Line requirements, or actions by other parties such as the FERC, could result in requiring Slice accounting to be reservoir specific, and could require generation to be delivered to the Participant from each "Slice System Resource" instead of the "Slice System". We do not know what may happen in the next 13 years, so we must build the accounting system to handle the various possibilities.

Other processes are developing requirements, procedures, and policies that will further define the Slice product. These processes include, the 2002 BPA Rate Case, the Slice contract negotiation and development process, and BPA's Section 5(b)/9(c) policy

development process. The Slice product will conform to the eventual outcomes of these other processes.



## **Resources Under Slice**

All units of the resources listed below will be assumed to be included in Slice unless otherwise noted. The actual hour to hour capability of the resources listed below will be a function of a number of factors such as nonpower constraints, streamflows and unit capability. Such capability will be calculated as described in the body of this agreement.

### **Hydro Resources**

Detroit	Lookout Point	Hill Creek
Cougar	Green Peter	Foster
Lost Creek	Black Canyon	Boise Diversion
Minidoka	Palisades	Anderson Ranch
Roza	Chandler	Big Cliff
Dexter	Hungry Horse	Albeni Falls
Libby	Grand Coulee	Chief Joseph
		Dworshak
Lower Granite	Little Goose	Lower Monumental
Ice Harbor	McNary	John Day
The Dalles	Bonneville	Cowlitz Falls
Idaho Falls	Chief Joseph Encroachment	Mica (only the Treaty storage rights, no energy)
Arrow (only the Treaty storage rights, no energy)	Duncan (only the Treaty storage rights, no energy)	Non-Treaty Storage

### **Thermal and Miscellaneous**

WNP2	(Wyoming Wind Project)	Wauna
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