

Bonneville Power
Administration

Slice of the System Product

Final Detailed Product Description
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I. Nature of Slice Product

A. General Description

The Slice of the System Product (Slice) is a power sale which 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. 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 a component that is firm power to meet part of the customer's regional consumer loads, the portion based on critical water firm load carrying capability, and a nonfirm or surplus firm component. The surplus firm component will occur on a planning basis in spring months when water conditions are high due to several factors and far exceed BPA's planned firm requirements loads in the region. Other surplus power above critical may be delivered as available in other periods of an operating year. BPA will develop Slice so as to avoid a cost shift to or from other customers.

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 which 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. Since, 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, the Slice purchaser will declare sufficient firm resources to meet its load in those periods in which the Slice power delivery is less than what 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 it 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 being 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.

Customers 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 nonfederal resources excess to a customer's load may be sold within or without 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.

II. 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.

III. 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 only be purchased during the Subscription window.

BPA has assumed that Slice would not be used to serve new Public Utility loads or newly annexed loads. The pricing construct in Slice has no way to deal with the possibility that the cost of serving the new or annexed loads may exceed the planned revenue recovery of BPA for these new costs in a melded rate. If the customer wishes to use Slice to serve these new or annexed loads, BPA might have to modify the Slice Product to provide treatment similar to the Block product.

IV. Slice Entitlement

The annual amount of firm net load requirements power that a Participant is entitled to receive is a function of applying the Participant's Slice Percentage to the Slice System generation assuming no change in storage ("Slice Entitlement"), *provided* 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; rather a Participant has the flexibility to schedule within the maximum and minimum operating limits of the Slice System. The Participant agrees that 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.

V. 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,

$$\text{Max Percent} = \text{The Maximum Percentage of the Slice System Capability that an Eligible Customer may purchase}$$

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)¹ and

Total Inventory = The annual average firm energy load carrying capability (measured in average megawatts of energy) calculated in the Rate Case for "PNCA-Identified" Federal System Resources, adjusted by System Obligations of the 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.²

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 purchased must remain constant throughout each year of the Slice Contract. Once selected, a Slice Percentage is fixed regardless of whether the Participant subsequently acquires or loses resources or has unexpected temporary load increases or decreases during an operating year or years.³

For any Slice purchaser, the sum of the net requirements loads used to calculate the Slice eligibility and any other block requirements 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.

C. Process to Select Slice Percentage

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

² 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.

³ 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.

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 (this duration is meant to be consistent with the selection window available for other Subscription Products) following the end of the Rate Case, the Eligible Customer will notify BPA of whether it wishes to purchase its power service as a Slice and if so its selected Slice Percentage (including zero percent, in which case the Slice Contract would terminate), and there will be a one-time revision to the Selected Slice Percentage Exhibit to show the selected percentage.

VI. Slice System Capability

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

A. Slice System Resources⁴

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

B. Capability of "Slice System"

The capability of the "Slice System" is the 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 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

⁴ 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 have no energy component, 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 (reserves) the maximum and minimum Slice System Capabilities would be adjusted but not the Slice Entitlement.

The test for determining whether a BPA energy obligation is a System Obligation or an obligation of BPA is whether BPA would still have had the commitment if 100% of its Federal net firm requirements load obligation in the region had been satisfied 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 (all PNCA energy transactions will be accommodated prior to BPA calculating the Slice System Capabilities; BPA will not adjust its resources declaration 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 shall be required to execute the 1997 PNCA);
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”)⁵. 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,” with the following exceptions, shall remain constant over the term of the Slice

⁵ 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.

Contract. 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.

(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 shall be responsible for their proportionate share of the associated costs of such Public Purpose Resource Acquisition. The capability of the “Slice System” shall be adjusted to reflect such addition to the “Slice System.” BPA shall provide Participants with advance notice of any Public Purpose Resource Acquisition.

(3) Resource Acquisition by BPA

BPA shall 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 shall 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 purchaser shall be made by a separate purchase contract.

(4) Federal Base System Replacement Resources

Should BPA acquire a resource that it designates as a Federal Base System replacement resource, and a Slice participant elects to participate in such resource, the contract governing the new resource shall 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

When BPA reduces the WNP2 generation for economic reasons to a level other than zero, PBL will give the Participants notice of such reduction the later of (a) the time the decision to displace is made or (b) 48 hours before the reduction. The Participants must then decide whether to participate in such reduction or to continue to receive the current level of energy attributed to the plant. This decision will be for the duration of the economic reduction. The decision must be received by PBL not less than 24 hours before the start of the reduction so that the appropriate generation level can be requested at the plant to accommodate both the economic reduction and those requests for energy deliveries based on the unreduced generation level.

For economic reductions in the plant that take the plant’s generation to zero, the same notice period will apply. The Participants will not have an option to take power from the plant but will have the option of purchasing energy at an indexed price from BPA in the amount that is being displaced.

VII. Payments

A. Slice Revenue Requirement

(1) Components of the Slice Revenue Requirement

(a) Power Business Line’s Revenue Requirement

The Slice Revenue Requirement shall 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:

1. Transmission costs (other than those associated with the fulfillment of System Obligations);

2. Power purchase costs (with the exception of those net costs incurred as part of the Inventory Solution discussed below); and
3. Net Revenues for Risk

(b) 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.

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

The Participants shall be treated consistently with other ratepayers – if the other ratepayers will be responsible for the depreciation costs during the current rate period then Participants would also be fully responsible; if other ratepayers were only responsible for a portion of such depreciated costs then the Participants would also only be responsible for their proportionate share of such portion.

(d) 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 and to the extent that it is a cost that BPA would still have if 100% of its Federal net firm requirements load obligation had been satisfied through Slice purchases or if it is related to a system obligation as described in section VI, above.

(e) Inventory Solution

1) 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 ("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 it is not currently known whether an Inventory Solution will be necessary or what form the Inventory Solution will take, the

governing Slice principle is that whatever is agreed to in Subscription will carry over into the Slice Contracts.

2) 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 as set out below. These costs will not be subject to a true up to reflect the actual net cost of the Inventory Solution.

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

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

The estimated net cost identified in the Rate Case for the Inventory Solution (including the Inventory Solution for both short- and long-term power sales contracts) shall be included in the Slice Revenue Requirement on a uniform monthly basis during 2002 through 2006. The estimated net cost shall 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, and could be a positive or negative number.

For example, if the Rate Case assumes the Inventory Solution costs \$30 million in power purchases to serve load that would pay expected revenues of \$20 million, the net cost to be added to the Slice Revenue Requirement would be \$10 million.

b) Subsequent Rate-Case Periods

In the rates process for subsequent rate periods, BPA will set the Slice Revenue Requirements with regards to the net cost of any "Inventory Solution" in a manner that is reasonably equitable to the treatment of such costs in rates for other 10 year (or longer) Subscription requirements contracts. Exclusion of the net costs of the resources to replace FBS resource degradations is an example of adjustments needed to achieve such equitable treatment.

- c) *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.
- d) *Public Purpose Resource Acquisitions*
- The costs of any Public Purpose Resource Acquisition will be included in the Slice Revenue Requirement.
- e) *Federal Base System Resource Replacements Included in the "Slice System Resources" upon mutual agreement between BPA and a Participant*
- Should BPA acquire a resource that it designates as a Federal Base System replacement resource, and a Slice Participant elects to participate in such resource by having the resource included in its "Slice System Resources," the contract governing the new resource shall set forth the terms for inclusion of its costs in the Slice Participant's share.
- f) *Credits*
- Any monetary credits that PBL receives for items in the Slice Revenue Requirement shall be credited to such Revenue Requirement, including Treasury credit for PBL's settlement payment to the Colville Tribe, 4(h)(10)(c) and FCCF credits, with the effect that the benefits of such credit shall be 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 of the Federal System Resources that are included in the "Slice System" will be credited back 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 the remarketing of power under a Slice Contract will be credited back to the customer's Slice Revenue Requirement up to the amount of the sale.

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.

g) Inapplicability of CRAC

A Participant's responsibility for costs of the Slice System will not be subject to CRAC since irrespective of CRAC a Participant will already be paying a portion of the Slice System's actual costs. If a Participant were also taking a flat block under Partial Requirements, that block would be subject to CRAC.

h) Transmission Surcharge

The revenue raised through Transmission surcharges levied by the TBL will be credited towards PBL's total revenue requirement and reflected in the Participant's true up adjustment. Repayment to TBL, if any, will be included in PBL's total revenue requirement and the Participant will pay their proportionate share.

B. Additional Payment Obligations

(1) Slice Administrative Expenses

The Participants shall 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 they were incurred specifically for the benefit of such Participants, for example, costs of direct signaling).

(2) Unauthorized Increased Charge

A Participant that takes energy from BPA in excess of its Slice Entitlement and any other contracts with BPA will be charged for such excess at the Unauthorized Increase Charge under the PF 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 shall pay its share of the costs of its "Slice System" on an annual basis. The amount of a Participant's annual obligation shall 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 shall pay for their share of the Slice administrative expenses as described above in subsection B(1) above.

D. Payment Schedule

(1) Periodic Payments

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

(2) True-Up for Actual Expenses

By August 1 of each year BPA will calculate the difference between the Slice Revenue Requirement's forecasted and actual expenses (that are known at that time) and the October payment will be adjusted by the difference. An unusual or unanticipated expense fluctuation (either positive or negative) of more than one million dollars to BPA [\$1,000,000] will be dealt with as an adjustment to the next month's payment. If a previously unidentified cost discussed in subsection A(1)(c) above arises during the year, it will be adjusted by to the true up. Slice administrative costs are adjusted by the true up. The estimated net cost of the Inventory Solution will not be subject to the true-up mechanism. Such costs shall be paid by the Participants on an estimated basis.

The more often during a year that true up occurs, the smaller the adjustment will be to the Participants and the less the cash flow concerns to BPA. BPA will work to provide true-up adjustments on a basis that meets BPA's cash flow and U.S. Treasury needs.

VIII. 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 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 nonpower requirement being added to or deleted from the Federal System obligations. Examples of nonpower 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, (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). Once 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 signal to schedule their Slice Entitlement subject to the final approval of the TBL in doing a dynamic signal for the Participants. All costs to do this will be borne solely by those Participants wanting to schedule by dynamic signal. 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 signal. 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.

IX. Load Loss 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 can not be exactly the same since the Slice Product has unique characteristics. If the Block amounts are reducible within the contract term to reflect a load loss, then a similar adjustment would be made under the Slice purchase. If on the other hand, BPA and the customer take into account the probability of load loss (such as retail access load loss) by using other means when determining the amount the customers may purchase, then the same consideration will be applied to the Slice customer.

On the other hand, if the Block product requires an adjustment to the delivered energy obligation, then similar (but not necessarily identical) provisions for adjustments will be applied to the Slice Product. The following procedure is an example of the provisions that would be used for Slice. Further modification may need to be applied to conform the treatment under Slice to that applied to the Block product.

A. Composition of the Slice Entitlement

Slice is a combined requirements and surplus product. The requirements portion of Slice is defined on an annual basis as the Slice Entitlement given a reoccurrence of critical streamflows (currently the 1937 water year). This requirement portion (“Critical Slice”) is the anticipated firm energy delivered to meet the purchaser’s requirements loads but is not guaranteed to be delivered. Since water conditions vary from year to year the difference between the Slice Entitlement and Critical Slice is the surplus power portion of Slice.

B. Example Procedures⁶

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 annual⁷ net firm load requirement using a revised load forecast and the declared resources used in the initial determination of the Participant’s maximum Slice Percentage. The Participant also shall submit monthly consumer load, as adjusted by exchanges, and BPA will estimate the requirement portion of the customer’s Slice for the next operating year.

⁶ This procedure would be modified to conform the treatment of load loss under Slice to that applied to the Block product.

⁷ 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.

(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, BPA shall take the following actions:

(a) Convert to Surplus

To the extent, on a critical water basis, BPA is able to meet its total firm load obligations (including the Participant's Critical Slice Entitlement) then BPA shall deem that portion of the difference between the Participant's net firm load requirement and the Critical Slice Entitlement as being converted to surplus power 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 surplus power portions of the product (capped by the percentage), any adjustment that increases one by decreasing the other would not affect the total price.

(b) Resell

That portion of the excess Critical Slice Entitlement that is not excess to BPA's regional firm load and can not be converted to surplus shall not be supplied to the Participant 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 of the Critical Slice Entitlement. The reduction shall be uniform within each month (100% load factor) and shall be applied to 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 PBL resulting from the sale of the energy less any BPA re-marketing fees.

X. General Contract Provisions

A. Uniform Terms and Conditions

All Slice Contracts will have the same basic terms and conditions for each Participant except for the selected Slice Percentage, the combination of the Slice

with a firm block purchase, the election to participate or not in a Federal Base System Resource replacement, elections made 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 the combination of this service with other BPA products, and information pertaining to the Participant. Over time, if a Participant elects to purchase power from resources which BPA acquires as replacements for the FBS as described in subsection VI.D. above, what Federal System Resources are considered as part of a Purchaser's "Slice System Resources" and are 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 2/3 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 not be a 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

A Slice Participant may request and receive other power products from BPA to serve its net requirements load under the same rates, terms, and conditions as other

preference customer requirements loads which had continuously received service from BPA commencing on October 1, 2001 upon the occurrence of any of the following events:

- (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 BPA⁸.

XI. 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.

⁸ 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.

B. Federal Operational Decisions Not Subject to Arbitration

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.⁹

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.

XII. Accounting

A. Development and Testing of Slice System Storage Accounting Algorithm

The following sections 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 would propose 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), rather, the SSA will be measured in energy (MW-Months) relative to a pass inflow condition. For example, if a Participant requests (and

⁹ 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.

receives) energy that can be produced from its "Slice System" given natural streamflows only, then there is no change to its SSA.

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 can be as complex or as simple as desired by the Participants. In any event, the algorithm can not produce results that indicate Participants should receive more than the benefit of 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 as follows. BPA will send the update to the Participants each time the account is updated.

(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. It will be each Participant's responsibility to return its account balance to zero by the end of the Contract unless actual system requirements (nonpower requirements) force a deviation from zero.

(2) Measurements for Account Balance

BPA will maintain for each Participant and the aggregate "Slice System" (for all Participants as well as PBL) a SSA in terms of MW-months. 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 forecasted natural streamflows 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. BPA will calculate the storage limits using the aggregate Slice System's SSA and translate the storage limits to each Participant's SSA using an algorithm to be developed in the future.

(4) Updates of Maximum and Minimum Balances

BPA will update each Participant's hourly maximum and minimum SSA balances for the next preschedule day(s). HLH and LLH maximum and minimum limits will be projected out for 7 to 10 days and will be based on the then-known power and nonpower requirements.

(5) Balances Outside of the Maximum and Minimum Bounds

If a Participant's SSA goes above the maximum bounds, BPA will keep the account at the maximum limit and any excess will be considered spilled (even if no physical spill takes place). If it 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 shall be a grace period for the purpose of the Participant managing its account and getting it back within bounds without penalty.

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

In addition to the energy resulting from the resource operation, the Participant's SSA will also handle the physical energy transactions associated with the Federal System Resources that are also "Slice System Resources" such as provisional draft energy and NTS.

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 that Participant's SSA balance. This takes into consideration head gains or losses that result from each Participant's operation of its SSA and allows the effects of energy purchases and sales to be isolated to the responsible Participant.

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

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

(3) Calculation of Participant's Slice Entitlement

For each hour, BPA shall 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 based on each Participant's SSA balance. 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% share wants to increase the next hour's schedule by 50 MW, then the "Slice System" will need to be able to increase by 500 MW for the next hour to accommodate the change. The hourly rates of change shall also be based on each Participant's SSA balance.

(b) Distribution of Storage

Distribution of storage among the "Slice System Resources" is set to the actual distribution of storage. For example, if a Participant had in its SSA 50% of the storage that the corresponding actual system had in the composite SSA, then each "Slice System Resource" initial content would be reduced to 50% of its actual storage content.

(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

BPA will initially calculate "Slice System" energy capabilities on a conservative basis with a minimum of effort in a manner agreed to by all of the Participants. The non-BPA Participants will decide jointly if additional effort and expense will be expended to get more accurate forecasts of capabilities. Since the Participants pay for this they will be the ones to determine the point of diminishing returns

of additional precision; *provided* BPA agrees 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 HLH and LLH entitlements for the 7 to 10 days using the 8-hour block forecasts using a hydro-regulation simulation used to create BPA's 30-day Forecast.

(5) Hourly Estimates

BPA will use the 30-day model in combination with an HOSS-type adjustment to determine hourly estimates for the preschedule day(s).

XIII. Scheduling Provisions

A. Communication of Slice System Capabilities

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 identification of specific data that BPA shall provide to the Participant shall be specified in an exhibit to the contract. The data shall 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 Signaling

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 signal will work with PBL to set that up. Using a signal will be solely at the signaling 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 but 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

PBL reserves the right to determine whether it will provide reserves and RAS for the Federal System out of its Slice share or whether it will be a System Obligation for the Participants. Such a determination will be given by a date that will be decided in the Slice Contract negotiations. If reserves and RAS are a System Obligation, the Participant will receive a share of the revenue PBL receives for providing energy to TBL for reserves and will pay a share of the reserve expenses in the revenue requirement. The Participant's share of the FCRPS will be reduced by the amount of reserves provided. If the PBL provides the reserves and RAS out of its Slice share, the Participant will be responsible for providing the reserves

and RAS associated with their Slice share. They must arrange for these reserves through their transmission provider.

XIV. Combining Slice With Other Subscription Products

A. Blocks of PF Energy

The Participant can also purchase an annual flat or shaped block of PF energy from BPA and/or negotiate for monthly blocks of energy (under the FPS rate). The Participant may not add Factoring, Capacity or any other staple on product that shapes the Slice or Block products. These products can, however, be purchased at market prices from 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 any other block requirements product shall not exceed the total net requirements of such Participant.

It is anticipated that the customer 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 and each month's delivery is at a 100% load factor. Factoring, Capacity or any other staple-on product that shapes the block product will not be allowed. The Participant will pay the prevailing PF rate for the block product purchased. There is no guarantee that the Participant will be entitled to the lowest PF rate for the block product.

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 an equivalent product are provided for the duration of the Slice Contract.

XV. Joint Management of Slice Entitlement

Because the Slice Product is a sale of firm power to meet a customer's net firm consumer load on an annual planning basis, BPA will apply the same policy to the Slice Product regarding its sale 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 that customer's load. Net firm load requirement power is intended and must be used by the customer to meet its consumer load. It is not power to be resold at wholesale on the market but it may be exchanged and later taken into load.

XVI. Stay flexible!

TBL requirements or actions by other parties (i.e., FERC) could result in the Slice accounting being reservoir specific and generation being delivered to the Participant from each "Slice System Resource" instead of the "Slice System". We don't know what may happen in the next 13 years so we must build the accounting system to handle the various possibilities.

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
Wanapum (only the share associated with the Service and Exchange Contracts)	Priest Rapids (only the share associated with the Service and Exchange Contracts)	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	GEM State	Wauna
CARES Columbia Wind #1		