

# Regional Dialogue Service to Publics Framework Overview August 7, 2007



# Framework Overview



# The Business Construct for Regional Dialogue

**Objective** - This Presentation lays out the framework for Regional Dialogue Products and Rates.

**Key Concept** - To reduce complexity, the construct is based where appropriate on existing approaches to rates, contracts and products.

**Products Similar** - Customers that like their existing business relationship will find something similar in Regional Dialogue.

**Maintains Product and Power Rate Unbundling** - The Marketing plan of 1994-1995 unbundled BPA products. Customers that choose to take additional services from BPA pay for those services. The Regional Dialogue products reaffirm this concept.

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# Business Construct continued...

**Establishes Cost Pools** - Under the proposed pricing construct the group of customers that chooses a particular product will bear the aggregate cost of the services that need to be added to the Federal Base System (FBS) based on 1937 water to provide their product.

- Examples: (1) Since the load following product allows loads to vary from forecast, this customer group will bear the costs of providing this service through a load variance charge. (2) This presentation also shows three other potential cost pools for the block product: shaped to critical water, flat annual, shaped to customer net requirement.

**Specific Rate Design** - How costs will be allocated within the cost pool will be the subject of discussion in future rate cases and potentially the Tiered Rates Methodology (TRM).

- Examples: (1) Continuing the load variance example – A given rate case could decide to establish load variance at an equal amount per kWh or to have load variance vary by month. (2) Shaping costs for the block product could be a single mill/kWh charge in the pool or vary monthly by cost causation.

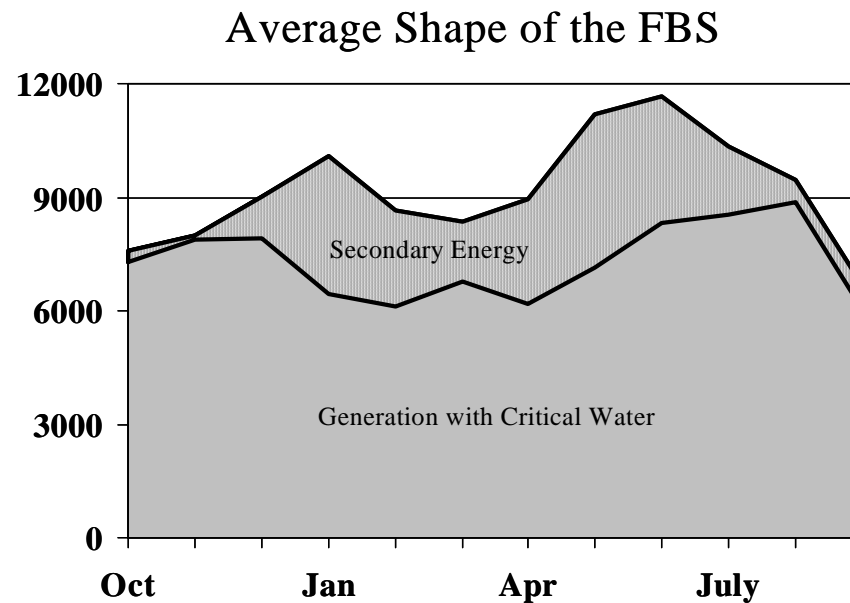


**The Key Change is Tiering** - To the existing business relationships BPA adds a specific Tiered Rate construct using a High Water Mark (HWM) which establishes a customer's access to power at the Tier 1 rate and then creates choices for loads beyond this amount.



# BPA Product Offerings

- Starts with shape of the FBS under critical water
- Public utility customers Tier 1 service provided from this resource
- A customer's product choice can be viewed as a decision on the additional services offered by BPA to shape and convert the FBS into energy deliveries that meet the customer's net requirement



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# What Products will BPA Offer?

- BPA will work collaboratively with customers and interested parties and make a good faith effort to offer usable products
- BPA intends to offer contracts for three general products:
  - **Slice** – Provides power based on the actual generation shape of the Federal system.
  - **Block** – Provides a predefined amount of power to meet a customer's net requirement load.
  - **Load Following** – Provides all power needed to meet a customer's actual load minus declared resource amounts.




# Slice

- BPA will continue to offer a Slice product as firm power for a customer's net requirements load and an advanced sale of surplus energy based on the generation shape of the Federal system
- Slice will be available to serve net requirement load below a customer's HWM, on a planning basis
- Aggregate Slice amounts will be limited to 25% of the Federal system
- Compared to the current product, the post FY11 Slice will have modest reductions in operational flexibility and/or clarification of capacity rights and flexibility
- Slice must be paired with a Tier 1 Block product to fill in up to the remainder of what the HWM provides
  - Whether BPA will require this Tier 1 block to be flat, or allow other shapes (at a different price), is yet to be determined
- Tier 2 will be available for load beyond the HWM in the shape of a flat block



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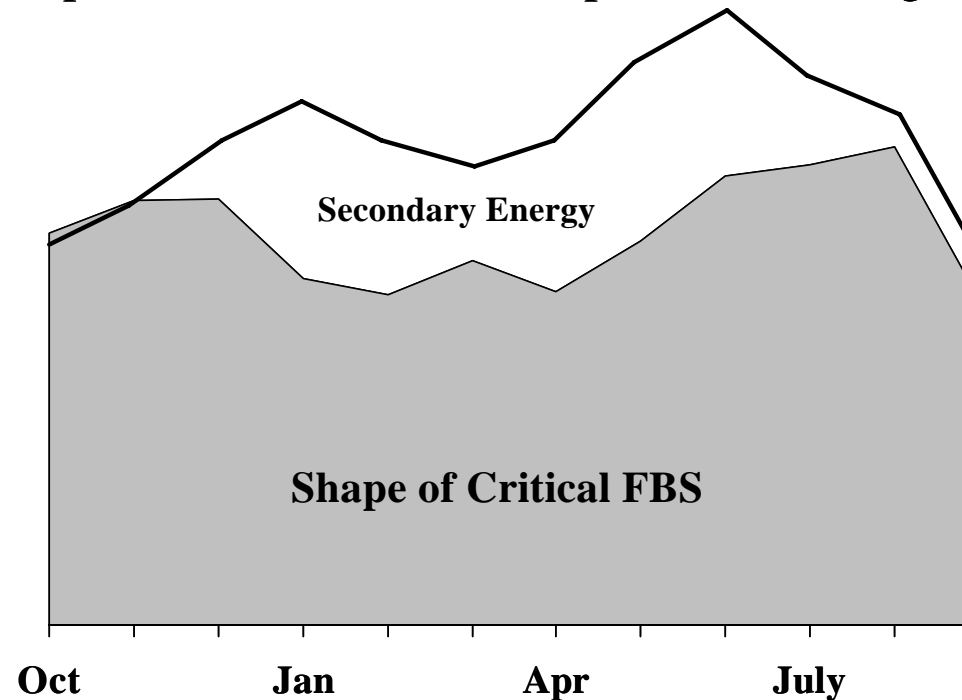
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## Slice continued...

- Slice provides a specific amount of power based on the actual generation shape of the Federal system
- A customer purchasing Slice will be responsible for following their own hourly load

Shape of the FBS resources provided through Slice



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# Block – Flat and Shaped

- Provides a predefined amount of power to meet a customer's net requirement load
- Energy and demand shaping charges for the Block product will reflect the projected cost to convert the shape of the critical FBS into the predefined block shape
- The shape of the blocks will have limitations that have not yet been established
- Amounts served at a Tier 1 rate will include credits for the value of the secondary energy



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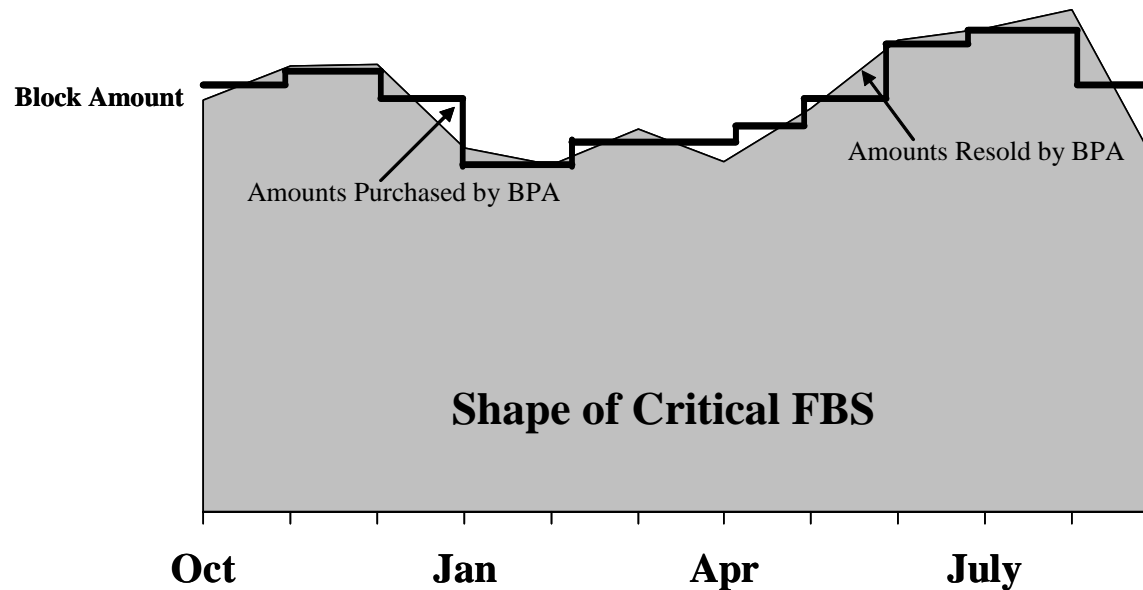


# Block continued...

## Block shaped like critical water

- A shaped block that closely resembles the shape of critical water would incur only basic shaping charges included in all block products.
- Like a Slice customer, a Block customer is responsible for meeting their hourly load shape

## Shaping Critical FBS Into a Shaped Block



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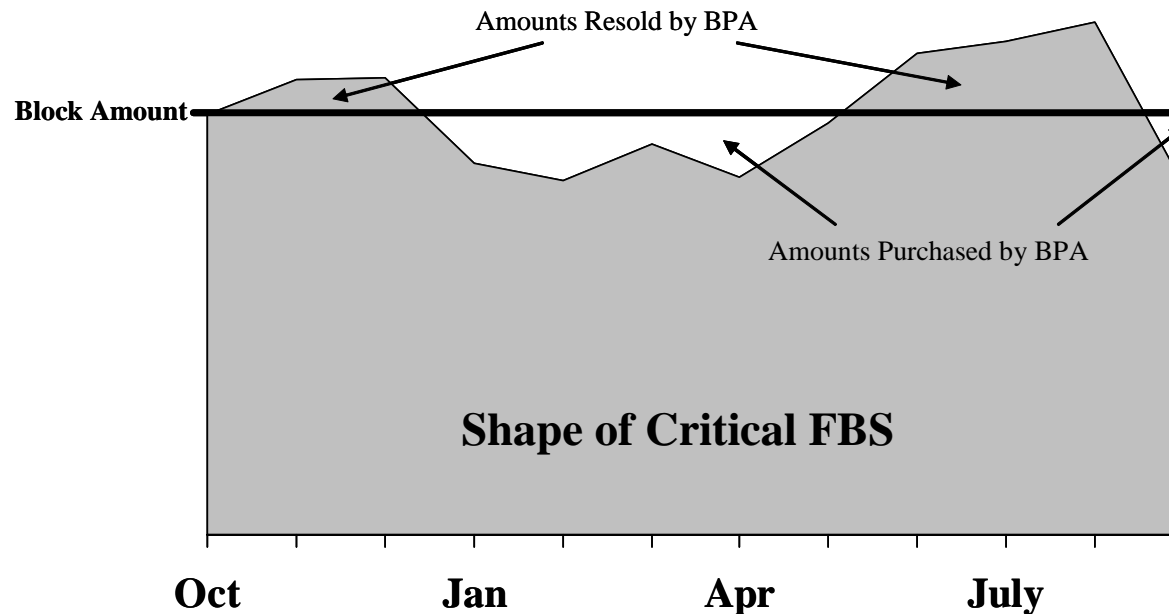


# Block continued...

## Flat shaped block

- Charges to convert from the shape of the FBS to a flat block will reflect the difference in value between the flat block and the shape of the FBS
- A flat block would likely incur more shaping charges than a critical-water-like shaped block.

## Shaping Critical FBS Into a Flat Block



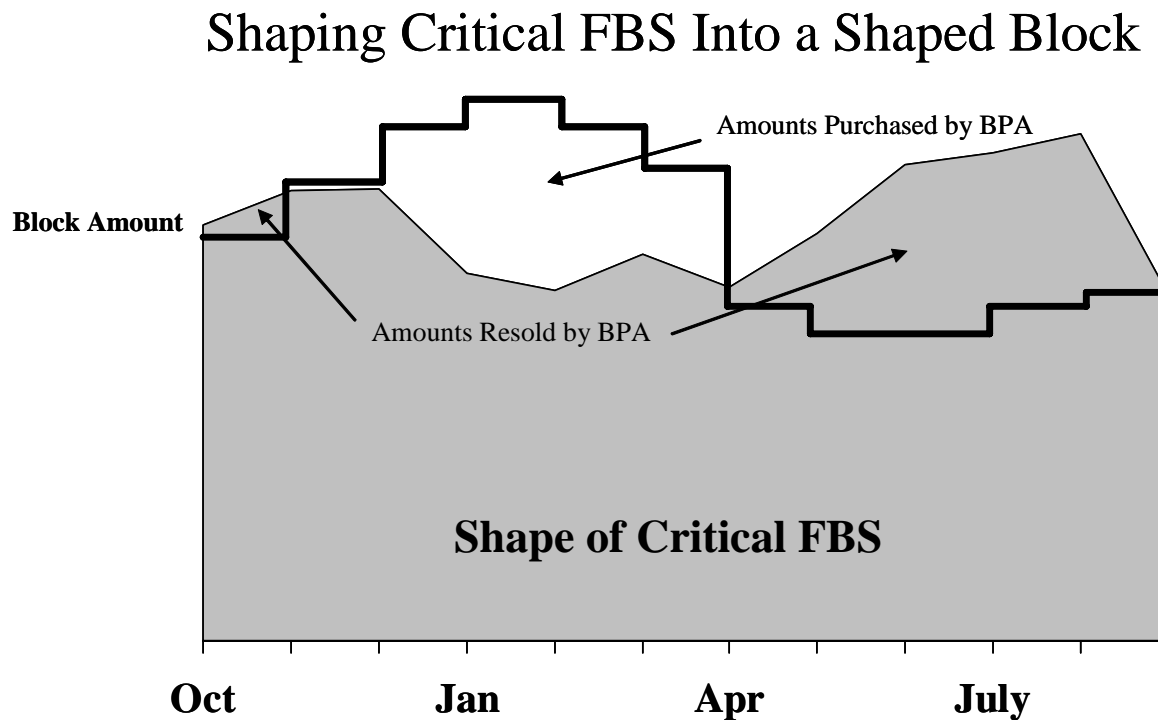
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# Block continued...

## Block shaped to a winter-peaking customer's load

- A shaped block that more closely resembles a winter-peaking customer's load, and does not resemble critical water, would likely peak in higher value months and incur larger shaping charges.



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# Load Following

- Would provide all power needed to meet a customer's hourly load minus customer's non-Federal resource amounts
- Load Following will include:
  - Reshaping of the FBS to the forecasted monthly shape of the customer's load, minus committed non-Federal resources (same as a shaped Block)
  - Additional load variance charges to cover costs associated with:
    - Customer loads being greater and/or less than forecast during the rate period
    - Serving the hourly variation of customer load
- Amounts served at a Tier 1 rate will include credits for the value of the secondary energy
- Upon notice, a customer may commit new non-Federal resources to serve its load, and like today, BPA will establish rules for these resources. Additional charges or credits will apply to meet the "no material cross-subsidization" principle.

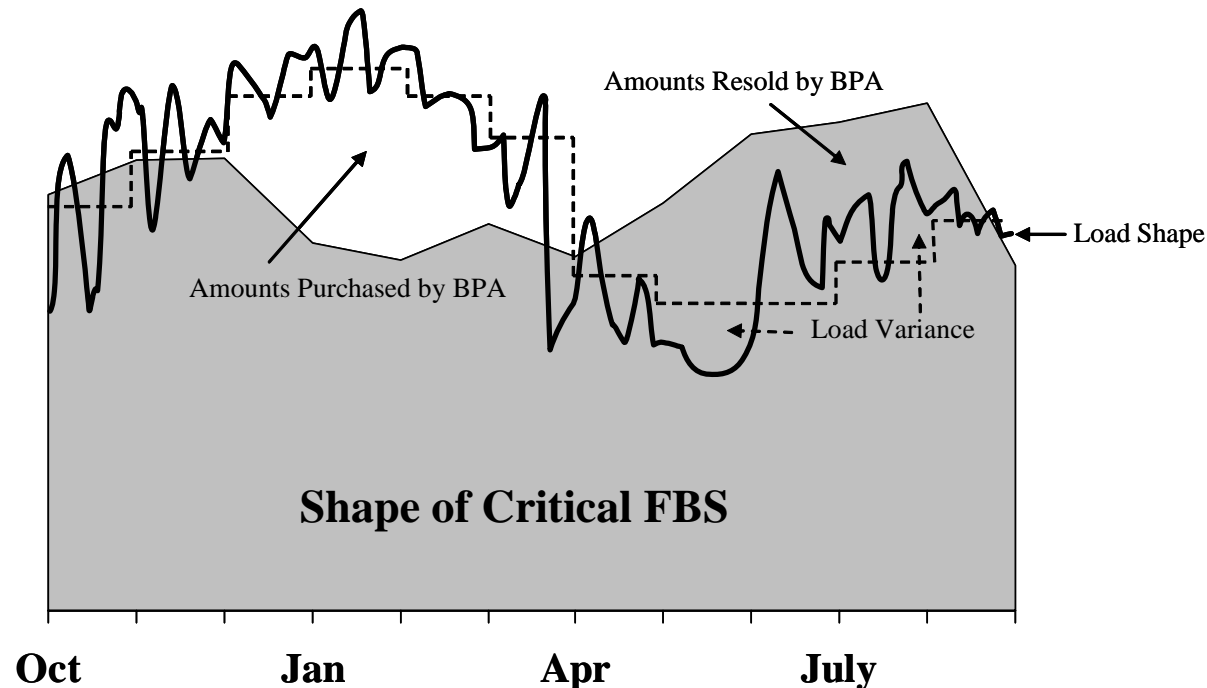


# Load Following continued...

## Shaping Critical FBS to Load Following Product

- The Load Following Product includes load variance charges, in addition to the shaping charges incurred by the block product
- BPA is responsible for meeting the customer's hourly load shape

## Shaping Critical FBS to Load Following Product



# Load Following – Non-Federal Resources

- BPA has worked with customers to develop principles for a load following product that accommodates non-Federal resources (see appendix for principles). BPA will continue to work collaboratively with customers during product development. What follows is an attempt to describe an approach for implementing those principles.
- Load Following customers may apply non-Federal resources to meet part of their load
- Because resources could affect BPA's Load Following obligation, these resources will be tracked and additional charges or credits may apply
- The Load Following Product will be structured to accommodate the following resource types:
  - **Metered** – A resource located within a customer's service territory (i.e. behind the customer's meter) and is **not** dispatchable
  - **Scheduled** - A resource located outside of a customer's service territory and can be applied to load in a pre-established, scheduled amount, and is **not** dispatchable
  - **Dispatchable** – A resource with adjustable output



# Load Following – Non-Federal Resources continued...

## Metered Resource

- If metered resources produce less than established output limits per resource and per utility in total (currently 3 MW per resource, 6 MW total, based on nameplate rating), then no charges are required and their operation simply reduces load BPA must serve
- Different limits may apply for different resource types
- When metered resources exceed the output limits, BPA would apply a resource support charge for this additional service to compensate BPA for absorbing the output and to make BPA's other customers whole. There may be a cap on the amount of resources for which a customer could use this service (for example 15 MW per resource, 50 MW total, based on nameplate rating).

## Scheduled Resource

- The customer will commit annually to hourly schedules to its load
- Except within specified rules, these scheduled amounts will not be allowed to change within a year (i.e. resource must be non-dispatchable)
- Any changes outside of a year will be subject to notice provisions





# Load Following – Non-Federal Resources continued...

## Dispatchable

- Customers with dispatchable resources retain flexibility and control for how they operate their resources
- Additional service will need to be purchased from BPA if customer wishes to alter the schedules of its non-federal resource more frequently than annually, as doing so alters BPA's load serving obligation and may create a monetary impact on BPA's other customers
- During Subscription this service took the form of "factoring"
- Another concept that will be explored would be to have customers commit hourly scheduled amounts of power to serve their load on an annual basis. Beyond providing this scheduled hourly amount, customers could operate their resources as they desire—selling hourly excess power into the market and meeting hourly power deficits with market purchases
- There may be other ways to accommodate dispatchable resources.



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# Support Services for Customer Resources

- BPA currently offers its customers a variety of services to support their resources and BPA will continue to do so in the future
- Wind firming / shaping - BPA has decided to offer wind integration services to customers committing these resources to serve their requirements load
  - Pricing for this service will account for the costs associated with short notice demands on the federal system, much like costs attributed to load following customers, and will be determined in a comparable manner to how BPA calculates the pricing for services needed to support wind projects that meet federal load
  - The specifics of what this service will entail will be informed by the Wind Integration Action Plan follow-on studies
  - For customers acquiring new renewable resources to serve requirements load, that resource must be firmed and shaped
- BPA may decide to offer its preference customers additional Resource Support Services for resources committed to serve requirements load. BPA would offer these services comparable to how BPA would acquire and support new Federal resources. Apart from BPA Transmission ancillary services, additional Power services *could* include:
  - Forced outage reserves
  - Planned outage reserves
  - Transmission curtailment reserves
  - Service and Exchange Agreements
  - ???
- Shorter term non-requirements products may be available from BPA's Trading Floor at a market based rate




# Unauthorized Increase Charge (UAI Charge)

- If a customer does not purchase these types of resource support services from BPA or from non-federal sources, and/or the customer does not follow through on its contractual commitments to resources and takes an amount of power from BPA in excess of what is contractually allowed, that amount will be subject to the UAI Charge for energy and demand, or in dire circumstances, curtailment.
- Current UAI charges are designed as penalty rates, and as conditions change, BPA will need to reexamine how it calculates its UAI Charge so that no incentive exists to lean on the system (BPA will need to consider new resource adequacy standards in this light).
  - Current UAI charges for demand are computed based on the **GREATER** of: a) the sum of hourly CAISO HLH Spinning Reserve Capacity prices at COB in the month, b) the sum of hourly CAISO HLH Spinning Reserve Capacity prices at NOB in the month, or, c) 3 x BPA's applicable monthly demand charge
  - Current UAI charges for energy are computed based on the **GREATER** of: a) highest hourly California ISO Supplemental Energy price (NP15) for the month, b) highest diurnal DJ Mid-C Index price for the month, or, c) 100 mills/kWh
  - March 2007 UAI charges: Demand = \$5.25 / kW, Energy = \$338 / MWh



# How do Tiered Rates Work?

- Tiered rates add a new dimension to a customer's business relationship with BPA, providing options for service beyond lowest cost FBS power
- BPA will establish a HWM that will be the dividing line between the lowest cost Tier 1 rates and Tier 2 rates
- Power sold at the Tier 2 rates will be in the shape of a flat annual block of energy. Therefore, BPA is not constructing Tier 2 to precisely match the shape of a customer's load growth.
- Pricing of power provided at a Tier 2 rate will be based on the marginal cost of new BPA purchases and resource acquisitions to supply above HWM customer load
- The Tiered Rates construct is designed to position BPA as a neutral provider of power needed to meet utility load above their HWM
- At contract signing customers will commit to how load above their HWM will be served through at least 2016
-  After 2016, customers will be able to change how their load above the HWM is served as long as they have not otherwise committed to a longer-term Tier 2 rate. This ability to change how load above the HWM is served will be subject to notice provisions and minimum commitment terms that reflect the principle that BPA must be able to acquire power to meet resource adequacy standards in an efficient and effective manner.



# Two Key HWM Concepts



## Contract HWM

- Established in 2011 (6 step process) and based on metered 2010 load and 2010 resources as currently declared in Subscription Contracts (with adjustments as noted in Policy); a more detailed calculation process will be established in the TRM
- Will be incorporated into a customer's contract and does not change over time, except for annexation
- Will not be calculated until a few months prior to deliveries (customers will have a "forecast" HWM available prior to contract signing)

## Rate Period HWM

- Calculated prior to each rate period
- Establishes the amount of Tier 1 priced power available to a customer during a rate period (limited by their net requirement)
- Based on an approach established in the TRM and reflects forecast critical FBS, including augmentation, for upcoming rate period



# How Existing FBS Value is Preserved in Tier 1

Rates for Tier 1 are based on the costs associated with the current FBS plus:

- Costs of limited augmentation (300 MW, total FBS not to exceed 7,400 MW)
- Costs of services necessary to provide load shaping and load variance

How FBS capacity value is preserved:

- Slice: Value is directly included in the product
- Block and Load Following: Value is provided through revenue from the marketing of surplus energy
- There is a tradeoff between managing capacity to create value for secondary marketing, and using capacity to serve load and/or to offer resource support services to serve load
- The equity issues associated with this tradeoff will be further discussed in the contracts, products, and TRM process and subsequent rate cases



# Condition Forecast at Start-up in FY 2012

- Current Forecast of 2012 Rate Period HWM and Load:
  - 2012 Rate Period HWM: 7300 aMW
  - 2012 Net Requirements Load: 7550 aMW
  - Deficit: 250 aMW
- Note: Given these assumptions, headroom is no longer projected in FY 2012, meaning almost all customers will be above their HWM at start-up. As load and FBS forecasts change, the forecast load above the HWMs will also change.
- Based on 2006 when customers purchasing the Load Following product consisted of 49% of BPA load, BPA anticipates that 1/3 to 1/2 of load above the HWM will initially purchase Tier 2 from BPA
  - Anticipated Tier 2 Service: 80-125 aMW
  - There is also likely to be an impact on how BPA meets the capacity needs for Block and Load Following customers which would be reflected in Tier 1 rates.



# Commitments for Service Beyond the HWM



- BPA's Intended Tier 2 Business Strategy
  - Neither to compete aggressively to serve its customers' load growth, nor to push customers toward non-federal sources
  - Do an excellent job of meeting customers' requests for service at the Tier 2 rate, but without using Tier 1 to subsidize Tier 2 sales to the maximum extent possible
  - Maintain a level playing field so that BPA Tier 2 power is not positioned with advantages over non-Federal options, and in doing so, offer resource support services for non-Federal resources that are comparable to the services BPA must use to support comparable Federal resources used to meet Tier 2 loads
  - Maintain a reasonable set of Tier 2 rate alternatives to keep implementation costs at a low level
- Commitments to Supplier
  - When the Customer signs its RD Contract in FY 2008 the customer will establish how its load beyond its HWM will be served through FY 2016. It will have 3 supplier options:
    - A. BPA at a Tier 2 rate priced at the marginal cost of supplying the power
    - B. Non-BPA supply or resource
    - C. Defined combination of A or B.  
(e.g. First 5 aMW from A, all other B)





# Commitments for Service Beyond the HWM



## When Commitments are Made for Tier 2 Amounts

- **Load Following Customers** – Responsibility for providing service above the HWM will be known at contract signing (likely 2008), but precise amounts of power at Tier 2 rates or customer resources needed will be finalized each rate case based on a customer's Rate Period HWM, supplier commitment, and Net Requirement forecast. Amounts for FY 2012 and 2013 will not be precisely known until late FY 2011. Based on forecasts at contract signing, BPA and customers may decide to begin acquiring power before precise Tier 2 amounts are known.
- **Slice or Block Customers** - At signing, customer commits to an amount of Tier 2 it will buy during each year of the commitment period (initially through FY 2016) consistent with its net requirement. To the extent a Block or Slice/Block customer's net requirement is lower than the amount projected for the rate period, "unused" Tier 2 amounts will be remarketed and credits or charges will apply.



# Commitments for Service Above the HWM

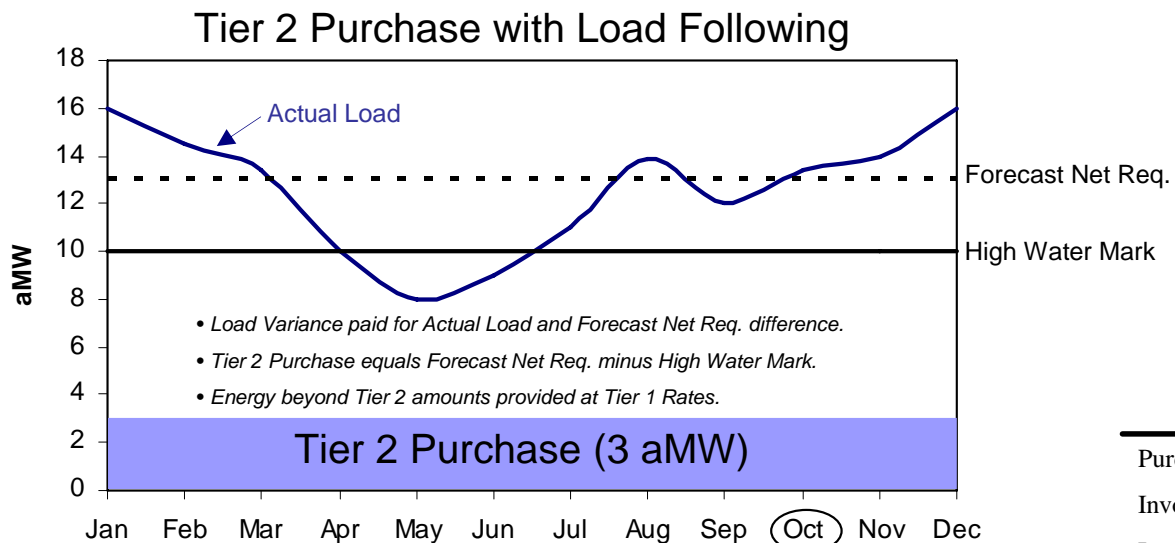


## When Purchasing Power at BPA's Tier 2 Rates

- Priced at cost of new BPA purchases and resource acquisitions. To the extent power is provided from the current FBS, it will be priced at the marginal cost of providing the service.
- The only shape offered by BPA is a flat annual block. This is significant for ease of implementation and relies on product and rate design to link rates and cost causation.
- For each rate period, amounts of Tier 2 will be established by forecast of net requirement
- Take-or-pay
  - Power sold at Tier 2 rates would be take-or-pay for the duration of the commitment period
  - In the event of customer load loss, BPA will remarket the excess power purchased at the Tier 2 rate and the value will be credited back to the customer



# Tier 2 Example – Load Following

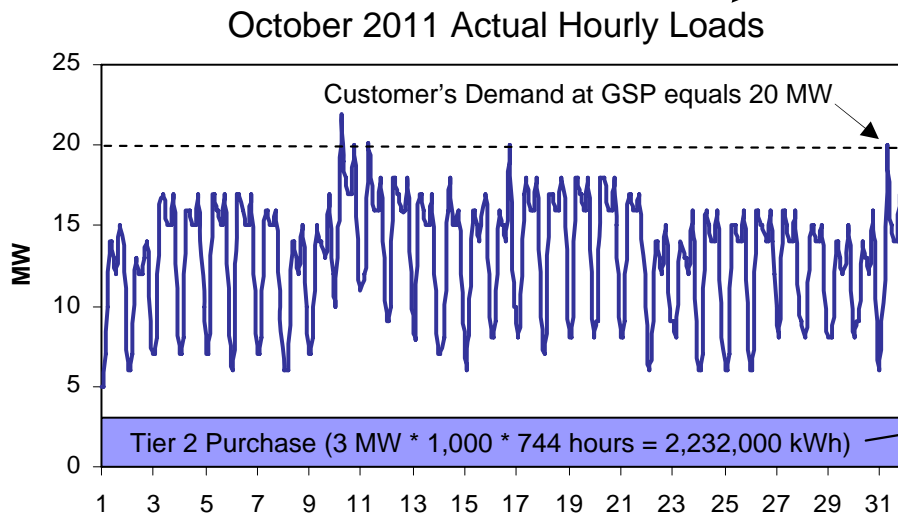


- In the example October 2011 power bill below, the customer's total demand as of BPA's Generation System Peak equals 20,000 kW. Of that, 17,000 kW is priced at a Tier 1 rate and the remaining 3,000 kW is included in the Tier 2 rate.
- The charges for load shaping from critical water are currently reflected in the Tier 1 HLH Energy and Demand rates. In the future they may be applied on a separate rate schedule.

## POWER BILL

Purchaser:	Public Utility #1	Billing Period:	October 2011
Invoice Number:	OCT12-EXAMPLE	Period Ending:	October 31, 2011
Issue Date:	November 12, 2011		

Sched	Service Desc	Amount	Unit	Rate	Revenue
Tier 1	Energy HLH	5,000,000	kWh @	0.02970	\$148,500
Tier 1	Energy LLH	2,700,000	kWh @	0.02176	\$58,752
Tier 1	Load Variance	9,932,000	kWh @	0.00047	\$4,668
Tier 1	Demand	17,000	kW @	1.94000	\$32,980
Tier 2	Flat Block	2,232,000	kWh @	0.05500	\$122,760
<b>Total</b>					<b>\$367,660</b>



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# BPA Tier 2 Alternatives



- Tier 2 rate alternatives will require different commitment periods and will be priced based on the cost of the resources used to meet the load. If the rate is based on the output of resources that are not already purchased as a flat annual block, the costs of shaping and/or firming the resource to a flat block will be included in the Tier 2 rate.
- Four options currently proposed for Tier 2:
  - **Short-term:** Rate alternative based on the costs of market purchases and/or resource acquisitions, and requiring a shorter-term commitment than other Tier 2 alternatives but sufficiently long enough to meet resource adequacy standards.
  - **Renewables Rate:** A contract-term rate alternative offered at contract signing and based on the costs of renewable resources.
  - **Load-Growth Rate:** Rate alternative offered at contract signing for Load Following customers who sign up for the term of the contract to have their above-HWM load served by BPA.
  - **Specific Vintaged Rates:** Periodically offered rate alternatives based on the costs of a specific resource or groups of resources.

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# Practical Considerations for Tier 2



- **Load Following** – Purchasing Tier 2 from BPA does not change the fundamental premise of the load following business relationship that BPA will meet a customer's hourly load.
  - The load variance charge will be designed to cover the risks inherent in this service
  - Tier 2 purchases are predefined hourly amounts established each year and are not affected by changes in the customer's load
  - Power needed beyond predefined Tier 2 amounts will be priced at Tier 1 rates
  - If a customer's load growth occurs in a more expensive shape than a flat block, BPA may incur additional shaping costs that would be recovered in the customer's load following rate. Depending on rate design, these additional shaping costs may be recovered broadly or directed at specific shapes.
- **Block or Slice** – The customer is responsible for meeting all load and load variation beyond its HWM and the flat annual blocks of Tier 2 they commit to purchase. Its choice on how to serve load beyond its HWM has no effect on the power priced at the Tier 1 rate.



# Serving Load Above the HWM with Non-Federal Resources



- **Customer Choice** - Customers may choose to meet load beyond their HWM with non-federal resources. Annual energy amounts required will be the same whether the amount is a Tier 2 purchase or a non-federal resource.
- **Block and Slice Considerations** - These customers will contractually agree to meet any load above their Rate Period HWM and their Tier 2 purchases. Their resource choices for load beyond their HWM will not affect the amounts or shape of the power they purchase from BPA.



# Serving Load Above the HWM with Non-Federal Resources



- **Load Following** – Because BPA meets the hourly load of this type of customer the shape of any nonfederal resources applied to meet load beyond its HWM could have an impact on the costs to other customers. To avoid this BPA has established a benchmark shape for non-federal purchases.
- **The Benchmark Shape for Load Following Customers** - The flat annual block required for purchases at the Tier 2 rate is used to establish the value BPA will require from any resources a customer uses to meet its load beyond its HWM. Customer resources that are not scheduled to its load in the benchmark shape will receive a Resource Shaping Adjustment.
- **Resource Shaping Adjustment for Load Following Customers** - Each rate case BPA will assess the value of a customer's resource compared to the benchmark shape to assess what additional charges or credits might apply. Some resource shapes may not be allowed, and the rate design for this may change over time.

*Generic Example: If a customer chooses to serve its load with an intermittent light load hour resource it would have a significant Resource Shaping Adjustment because BPA would charge firming costs plus the differential between a flat annual power and LLH power.*

*NOTE: numeric examples available too.*



# Serving Load Above the HWM with a Combination of Non-Federal Resources and Tier 2



- Any customer can elect to combine power from non-federal resources with power from BPA at Tier 2 rates, in a pre-established megawatt amount.
- Load Following customers that choose a combination may fix either the amount of power from a non-federal resource and have BPA meet the additional above-HWM load or fix the amount of power served at Tier 2 rates and meet the additional above-HWM load with non-federal resources.
- Block amounts determined by the level of purchase commitment to Tier 2 they make.

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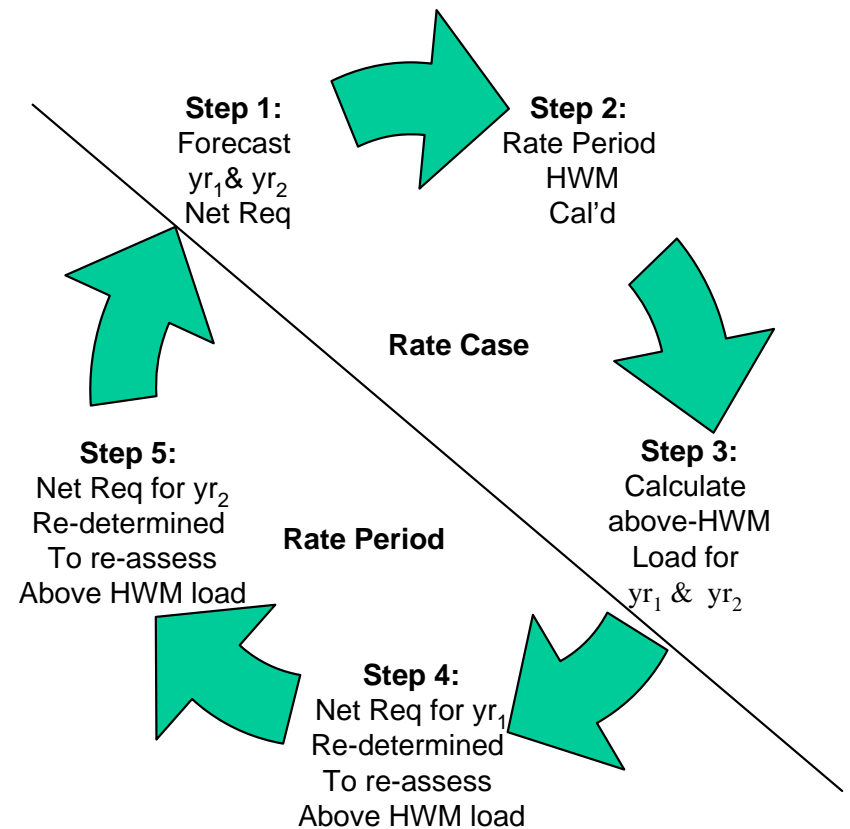


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# Process Timeline Example - Tier 2 and Load Following

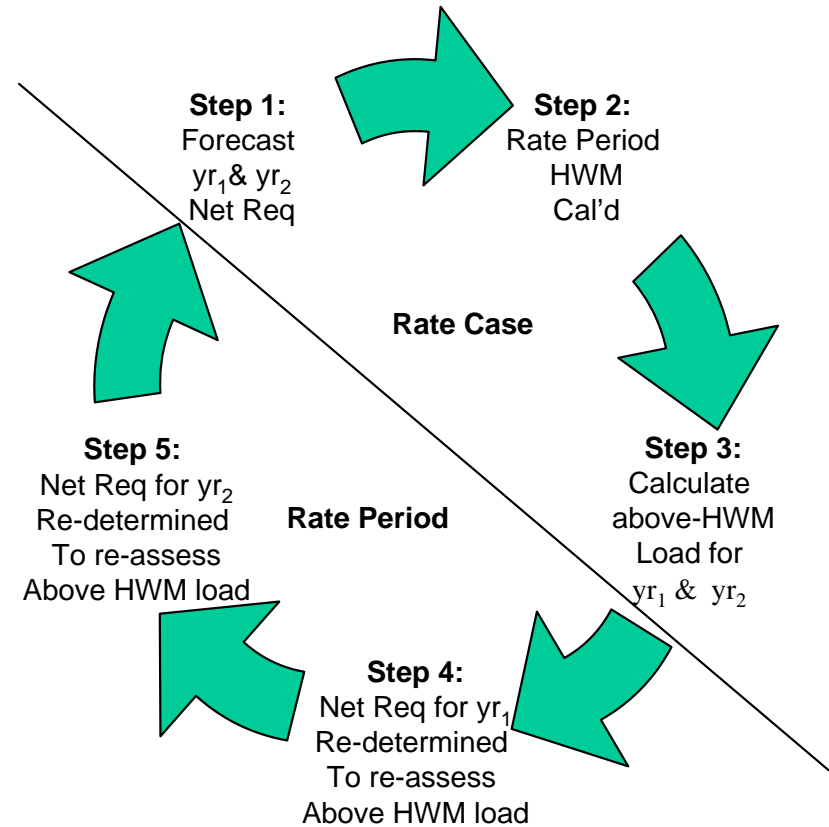
- A Load Following customer may elect to have its entire load served by BPA (at Tier 1 and Tier 2 rates).
- Each rate case:
  - BPA will forecast the amount of power charged at Tier 2 rates, by comparing the customer's net requirement forecasts for the rate period to its rate period HWM (**Steps 1 and 2**)
  - The amount forecast for each fiscal year becomes the customer's established Tier 2 take-or-pay obligations for the rate period (**Step 3**)
  - For certain Tier 2 rate treatments, BPA may require a customer to commit to a specific amount of power charged at that Tier 2 rate for longer than the rate period



# Process Timeline for Tier 2 and Load Following continued...

Prior to each year of the rate period (**Steps 4 and 5**):

- BPA will update the customer's net requirement forecast for the next year
- If the forecast net requirement is greater than the forecast in the rate case, the Tier 2 purchase remains unchanged.
- If the forecast net requirement is less than the forecast in the rate case, the Tier 2 purchase obligation remains unchanged.
  - BPA will remarket an amount of Tier 2 power equal to the difference in the annual net requirement forecasts and pass through the difference in value to the customer. This could result in a charge or a credit.



# Timeline – Customer Choice

FY 2008 (late) – TRM 7(i) Concludes (HWM calculation methodology set)

FY 2009 – Contract signing

FY 2011 (early) – Initial Rate Case Starts

FY 2011 (mid) – Contract HWM Calculated (is equal to first Rate Period HWM)

FY 2011 (late) – Initial Rate Case Ends

FY 2012 – Power delivery begins



# APPENDIX:

## Load Following Principles

We are seeking a load following product that:

- Makes it feasible and practical for customers to develop their own resources to meet their load.
- Leaves operational control of customer-owned resources with customers, not BPA.
- Does not create material cross-subsidization among classes of BPA customers.
- Is reasonably simple to implement.
- Gives BPA and customers a reasonable amount of certainty and predictability about their rights and obligations in operating their systems.
- Ensures BPA and customers meet their commitments to provide planned firm energy and capacity.
- Facilitates, with appropriate notice to BPA, transition by a utility among the services offered under this product to accommodate changes in the utility's resource portfolio.
- Provides any needed resource services (as might be required for resources such as wind) on a comparable economic basis whether such resource is a tier 2 purchase, or utility developed.

