

Background on Non-Federal Resource Treatment under Regional Dialogue Contracts

June 8, 2021





Agenda

- Intro
- Northwest Power Act Background
- Non-Federal Resources under Regional Dialogue Contract
- Next Steps



Non-Federal Resource Treatment

Today's Background session focuses on the terms and conditions associated with customer application of non-Federal resources under Regional Dialogue contracts. It will also start to outline some of the related issues, as we've heard from customers, to be explored in future discussions.

Background sessions

Steps 1 and 2

Step 1: Introduction & Education

Step 2: Description of the Issue

> Today's Session

Discussion sessions

Steps 3 and 4

Step 3: Analyze the Issue

Step 4: Discuss Alternatives

> July 27 Session

Feedback

 Will carve out time each session to address feedback (Step 5) from prior session.

Step 5: Discuss Customer Feedback

Step 6: Staff Proposal – Culminating in Concept Paper



Customer Resource Concerns

- Adapt products to provide non-Federal resource flexibility
 - Consider risks and minimize cost shifts
- Commonly raised customer concerns:
 - Size thresholds
 - Notice provisions
 - Support services requirements
- Other customer concerns:
 - New technologies (e.g. batteries)
 - New State/Federal legislation (e.g. CETA)



Look for this symbol throughout the slide deck. This indicates an area we have heard customers are interested in exploring opportunities to find flexibilities, changes, and efficiencies.

 Related Transfer Service and Transmission topics/questions will be discussed in the Transfer Service and Transmission sessions



Northwest Power Act Background





Relevant Statutory Authority

- Section 5(b)(1) of the Northwest Power Act
 - "Whenever requested, the Administrator shall offer to sell to each requesting public body and cooperative entitled to preference and priority under the Bonneville Project Act of 1937 and to each requesting investor-owned utility electric power to meet the firm power load of such public body, cooperative or investor-owned utility in the Region to the extent that such firm power load exceeds—"

Customer Resources

- 5(b)(1) provides that Bonneville serves a customer's firm power load net of its resources.
- Section 5(b)(1) calls out two categories of non-Federal resources that a customer is required to take to load.

"Firm power load . . . To the extent that such firm power load exceeds—

(5)(b)(1)(A): "the capability of such entity's peaking and energy resources used in the year prior to December 5, 1980, to serve its firm load in the region, and

Examples:

- 1. Customer resource (Mid-C hydro) with a 50 year FERC license;
- 2. Customer 50-year contract right to purchase hydro output

(5)(b)(1)(B): "such other resources as such entity determines, pursuant to contracts under this chapter, will be used to serve its firm load in the region."

Examples:

- 1. A customer resource (gas plant) with a projected 40 year life;
- 2. A customer contracts to purchase non-federal power for the period of the contract



Permanent Resource Removal

- 5(b)(1)(A) and (B) resources must continue to be used to serve firm load unless they are permanently removed through one of the following:
 - (1) Administrator's consent,
 - (2) Discontinued because of obsolescence, retirement, loss of resource,
 - (3) Loss of contract right.
- For more information see Bonneville's 5(b)/9(c) policy on determining Net Requirements.



Temporary Resource Removal Revised 5(b)/9(c) Policy

- Due to year-to-year variance such as a loss of load, a customer's Above-RHWM Load could result in the customer having purchase obligations in excess of its Net Requirement or Above-RHWM Resources.
- Under the Regional Dialogue contracts, customers may temporarily remove Above-RHWM Resources from serving their regional firm load, or elect to have BPA remarket purchase obligations at Tier 2 rates, or both.



Net Requirements

- BPA's obligation under section 5(b) of the NW Power Act:
 - BPA is obligated to sell a customer power (Net Requirements) equal to a customer's load (Total Retail Load) minus a customer's resources (Dedicated Resources).
 - Section 5(b)(1)A resources were those dedicated prior to the NW Power Act
 - Section 5(b)(1)B resources were dedicated after the NW Power Act
- Net Requirement = Total Retail Load minus Dedicated Resources
- The FY 2012 FY 2028 "Regional Dialogue" Power Sales Contracts implement BPA's Net Requirement obligation to supply Firm Requirements power to preference customers.
- The Regional Dialogue contracts include a Net Requirements exhibit (Exhibit A) that lists a customer's Dedicated Resources, if any.



Regional Dialogue Contract





Regional Dialogue Core Products

Load Following

- Provides load-following service for metered load less non-Federal resources applied to load.
- A Load Following customer's Net Requirement is actual hourly amounts.
- Load Following customers can apply their resources to load in their choice of several pre-defined allowable shapes, or as the resource generates if they agree to purchase Resource Support Services (RSS) from BPA.

Block

 Provides an amount of power to meet a customer's planned annual net requirement; can be flat or shaped; can be paired with shaping capacity.

Slice/Block

 Provides for the combined sale of two distinct power products for service to a customer's planned annual Net Requirement.

Note: Block and Slice/Block customers agree to follow their loads with non-Federal resources beyond what their BPA purchase supplies.



Take-or-Pay

- Firm Requirements Power is sold on a 'Take-or-Pay' basis
- 'Take-or-Pay' means customers must pay for the amount of power the customer is obligated to purchase from BPA:
 - 'Take-or-Pay' amounts depend on actual customer loads and the type of product (Load-Following vs Slice/Block or Block).
 - Customers cannot decrease their contractual purchase at the Tier 1 rate by adding non-Federal resources.
 - This prevents 'stranding' Federal System costs.
- Take-or-Pay provision provides assurance to the U.S. Treasury that BPA will be able to meet its repayment obligations
- Generally, customers only can add resources to serve Above-RHWM Load
 - There are policy exceptions for adding small renewable resources.



Tiered Rates

- Regional Dialogue discussions led to the Tiered Rate Methodology (TRM).
- TRM preserved the cost of the existing Federal System by distinguishing between the
 existing system (at the Tier 1 Rate) and resource additions for customers with load
 growth (Tier 2 Rate).
- Each customer received a Contract High Water Mark quantifying how much Firm Requirements power it can purchase at the Tier 1 Rate.
- This 'Rate Tiering' does not meld in new higher cost resources, and prevents 'diluting' the benefits of the existing System.
- 'Tiering' gave customers the choice of how to serve load growth.



Above-RHWM Load

- The Rate Period High Water Mark (RHWM) determines the maximum amount of Tier 1-priced power available to the customer during a given <u>Rate Period</u>.
 - Calculated prior to each rate period as a scaled amount of CHWM for changes in the Federal System.
- Above Rate Period High Water Mark Load (Above-RHWM Load) is forecasted load in excess of a customer's RHWM as determined in the RHWM Process.
 - Forecasted Total Retail Load Existing Resources NLSLs RHWM = Above-RHWM Load

Serving Above-RHWM Load

Customers have three options for serving Above-RHWM Load:

- 1) Non-Federal Resource (Specified or Unspecified)
- 2) BPA Flat Block Purchase at a Tier 2 rate
- 3) Combination of the two above

Above-RHWM Load Election Dates

Notice Deadline		Purchase Period
November 1, 2009	for	FY 2012 – FY 2014
September 30, 2011	for	FY 2015 – FY 2019
September 30, 2016	for	FY 2020 – FY 2024
September 30, 2021	for	FY 2025 – FY 2028

Notice Deadlines and Purchase Periods

A key interest for Regional Dialogue contracts and the TRM was the development of resources (by BPA or customers) to serve load.

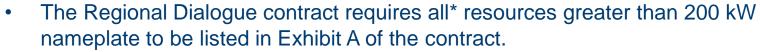
Notice Deadlines and Purchase Periods:



- Needed to create certainty necessary for development of new resources.
- It was estimated that the 3-year notice and 5-year commitment are the minimum needed to make development of new resources by customers or BPA feasible.
- BPA has a statutory obligation to not only serve the load placed on it under section 5(b)(1), but to make cost-effective choices on resource acquisitions (consistent with the Council's Power Plan, as determined by the Administrator).
- Customers need to follow BPA's OATT and Business Practices to request NT or PTP transmission for non-Federal resources.



Non-Federal Resource Thresholds





- They must be metered with data accessible to BPA.
- This allows enforcement of the 'Take-or-Pay' concept.
- The Power Sales Contracts and Transmission Contracts have similar size thresholds for resources to be included in the contracts.
- 200 kW Threshold
 - BPA Power believed 200 kW was the minimum threshold to provide BPA resource visibility and certainty for serving customer loads.

*This refers to all resources within a customer's distribution territory that are either owned by the customer or a consumer, and/or contract resources of which the customer purchases the output. 'Merchant' resources developed solely for sale to unrelated entities are metered, but not listed in a customer's Exhibit A, even when physically connected to the customer's distribution system.



Dedicated Resources





Regional Dialogue Contract Dedicated Resource Terms

- Dedicated Resource a Specified Resource or Unspecified Resource Amount that a customer is either required by statute to provide or obligates itself to provide to serve its Total Retail Load.
- Specified Resource a named generating or contract resource that has a nameplate capability greater than 200kW, that is obligated by contract or statute to serve Total Retail Load.
- Existing Resource a Specified Resource listed in Exhibit A that was obligated by contract or statute to serve Total Retail Load prior to October 1, 2006. (Existing Resources reduce load that otherwise would be served at Tier 1 Rates) See Appendix A for Existing Resource treatment example.

Dedicated Resource terms continued...

- **New Resource** (1) a Specified Resource listed in Exhibit A, obligated by contract or statute after October 1, 2006 to serve Total Retail Load, or, (2) any Unspecified Resource Amounts listed in Exhibit A. (New Resources serve Above-RHWM Loads.) See Appendix B for New Resource treatment example.
- Unspecified Resource Amounts an amount of firm energy that a customer has agreed to use to serve its Total Retail Load. This amount is not attributed to a specific resource. (Unspecified Resource Amounts are considered New Resources). See Appendix C for Unspecified Resource treatment example.

Dedicated Resource Amounts

- Nameplate Capability and Critical Generation:
 - "Nameplate" is the rated output of the resource; for our purposes, it is an indication of how much power a resource can produce.
 - "Critical Generation" is an expected reliable amount of power production from a resource with variable 'fuel' availability. For hydro, it is based on a historically low streamflow. For wind or solar, it can be based on historically low periods of wind or sunshine.
- Power Services Planning generally uses "Critical Generation" amounts for Dedicated Resources.
- Critical Generation amounts are used for:
 - Net Requirement calculations
 - The resource amount serving Above-RHWM load
 - As a benchmark for Resource Support Services
 - As the amount a customer is required to schedule to its load



Adding and Removing Dedicated Resources

- Customers may add a New Resource to serve load in the following circumstances:
 - to meet Above-RHWM Load for the upcoming rate period or meet future (within 5 years) Above-RHWM Load
 - a small renewable resource in its service territory (Load Following 'SNEER Exception')
 - a resource less than 200 kW nameplate (no contract requirement for resources under 200 kW nameplate)
- Customers may permanently remove a Specified Resource if the resource's use is permanently discontinued due to obsolescence, retirement, or loss (consistent with the 5(b)/9(c) policy).

Load Following Dedicated Resource Application

- A Load Following customer's Net Requirement is determined on an hourly basis.
- Load Following customers may apply their Dedicated Resource Amounts to load in the following manner:



- Supported with Resource Support Service (RSS). See Appendix D for RSS
 Details.
- Scheduled to load in hourly predetermined amounts
 - hourly predetermined amounts are determined by June 30th of a Rate Case Year for both years of the upcoming Rate Period,
 - the hourly amounts add up to the Monthly/Diurnal amounts dedicated to load in Exhibit A.
- A Small Non-Dispatchable Resource may be applied to load without RSS if it is located within a customer's service territory and an:
 - Existing Resource less than or equal to 3 MW Nameplate; or a
 - New Resource less than or equal to 1 MW Nameplate.
- If a customer has multiple New Resources that are Small and Non-Dispatchable, BPA may determine that Resource Support Services are necessary if their aggregate nameplates are greater than 1 MW.



Slice/Block and Block Dedicated Resource Application

- A Slice/Block or Block customer's Net Requirement is determined on a planned annual basis.
- Each year Dedicated Resource Amounts are updated prior to calculating Net Requirements for the following reasons:
 - Adding new Specified Resources or Unspecified Resource Amounts to serve Above-RHWM Load
 - Updating resources serving NLSLs to match NLSL forecasts
 - Temporary removal of New Resources due to lack of Above-RHWM Load
 - Temporary removal of Existing Resources in the second year of a Rate Period, limited to the amount that increases a customer's net requirement in the second year up to its net requirement in the first year

Other Non-Federal Resources





Consumer-Owned Resources

- Consumer-Owned Resource terms:
 - Consumer Owned Resource a generating resource owned by a retail consumer and connected to the BPA customer's distribution system. The resource is greater than 200 kW nameplate and is not used only as a back-up energy source.
 - Onsite Consumer Load the electric load of a BPA customer's retail consumer that is directly connected with its Consumer-Owned Resource. See Appendix E for Consumer-Owned Resource treatment example.
- Consumer-Owned Resources may be added to a customer's contract at any time, but the customer must make a one time designation of how the consumer owned resource will be used:
 - Serving onsite load
 - Serving load other than onsite
 - Serving load both onsite and other than onsite



Resources serving NLSL

- Dedicated Resource Amounts for Serving an NLSL
 - Customers may add Dedicated Resources to serve NLSLs.
- Consumer-Owned Resources Serving an NLSL
 - Renewable Resource/Cogeneration Exception An end-use consumer with a facility whose load is, in whole or in part, an NLSL, may reduce its NLSL to less than ten Average Megawatts in a consecutive 12-month period by applying an onsite renewable resource or onsite cogeneration to its facility load. The resource must be continuously applied to serve the NLSL*
 - Consumer-Owned Resources that are not Renewable Resources/Cogeneration

^{*}Consistent with BPA's "Renewables and On-Site Cogeneration Option under the NLSL Policy" portion of its Policy for Power Supply Role for Fiscal Years 2007-2011, adopted February 4, 2005, and the NLSL policy included in BPA's Long Term Regional Dialogue Final Policy, July 2007, as amended or replaced.



Other Resource Terms

- PURPA* Resources A key distinction between PURPA and other customer resources is that the customer is required by law to take the output from the resource.
 - BPA does not enforce take-or-pay for PURPA Resources
 - PURPA resources require the purchase of RSS (specifically Diurnal Flattening Service – Load Following only)
- Resources Not Dedicated to Load resources owned by a BPA customer that the customer has not used, or contractually committed, to serve its load. These include resources the customer sells to other entities.
- 'Merchant' or Independent Power Producer Resources >200 kW are not included in customer's Power Contracts (as long as the utility is not purchasing the output)
 - Resources developed for sale outside the utility distribution system, and sold to an entity other than the host utility
 - Metering accessible to BPA still is required.

^{*}PURPA - (Public Utilities Regulatory Practices Act, enacted November 9, 1978) is a Federal law that requires utilities to purchase electricity from qualified independent power producers at a price that reflects what the utilities would otherwise have to pay for the construction of new generating resources. The Act was intended in part to encourage the development of small-scale cogeneration and renewable resources.



Additional Sources of Information

- Your Power AEs! They are a wealth of knowledge and have a toolbox of educational PowerPoint presentations on a variety of topics including RD contracts, the TRM, and Above-RHWM Load and Tier 2.
- BPA's 5(b)/9(c) policy and Record of Decision.
- Provider of Choice <u>Fact Sheets</u> and BPA fact sheet search tool.
- Regional Dialogue <u>Concept Paper</u> and <u>Policy</u>—good resources for understanding how the conversation/elements evolved, and they provide bite-size explanations of the building blocks.
- <u>Tiered Rate Methodology</u> and TRM <u>2020 fact sheet</u> and TRM <u>2012 fact sheet</u>



Looking Forward





Framing the Non-Federal Resource discussion

At the July 27th meeting*, we would like to discuss the following concepts BPA has heard from customers in our request for feedback on the current contract:

- Non-Federal resource flexibility:
 - Consider risks and minimize cost shifts
 - Transmission considerations
- Topics for further discussion:
 - Size thresholds
 - Notice provisions
 - Support services requirements
 - New technologies
 - New legislation
- Additional concerns?

*July 27, 2021 is currently reserved for the non-Federal resource discussion; subject to change.



Next Steps

- Please provide feedback and ideas on treatment of non-Federal resources to post2028@bpa.gov, via discussions with Power AE, or through your trade organizations as applicable by June 22, 2021.
- The next session on non-Federal resources is on July 27, 2021
 - BPA alternatives for concerns we have heard so far discussing possibilities



Next Steps

	4-6 Weeks Between Background and Discussion
May 27, 10am-noon	HWM & Tier 1 System Background
June 8, 1-3pm	Non-Federal Resources Background
June 22, 1-3	BPA's Statutes, Capacity & Resource Adequacy Background
July 13, 1-3	HWM & Tier 1 System Discussion
July 27, 1-3	Non-Federal Resource Discussion
August 10, 1-3	Carbon Background, Term/Cost Control Background
August 24, 1-3	Capacity & Resource Adequacy Discussion
September 14, 1-3	Transfer & Transmission Background, EE Background
September 28, 1-3	Carbon Discussion
October 12, 1-3	Transfer & Transmission Discussion
October 26, 1-3	Term/Cost Control Discussion and revisit Interests
November 9, 1-3	EE Discussion
Mid-November	REP Background
December 14	



APPENDIX





APPENDIX A Existing Resource Example

Resource profile in Exhibit A:

Fuel Type	Date Resource	Date of	Percent of	Nameplate
	Dedicated to	Resource	Resource Used to	Capability
	Load	Removal	Serve Load	(MW)
Hydro	1979	N/A	100.0%	15.0

	atutory Status	Resourc	e Status		S or S?	Dispate	chable?	PN	CA?	If PNCA Upda		
5b1	5b1B	Existing	New	Yes	No	Yes	No	Yes	No	Yes	No	
X		X X X										
Note	Note: Fill in the table above with "X"s.											

Resource amounts in Exhibit A:

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	annual aMW
Fiscal Year 2016													
Total (MWh)	6,622	9,373	9,672	8,705	5,846	5,201	5,328	6,845	5,400	3,274	595	3,672	8.030
HLH (MWh)	HLH (MWh) 3,845 4,992 5,408 4,680 3,360 3,024 3,078 3,680 3,120 1,760 346 2,040 7.982												
LLH (MWh)	2,777	4,381	4,264	4,025	2,486	2,177	2,250	3,165	2,280	1,514	249	1,632	8.091

Resource treatment:

Existing Resource that is Dedicated to Serve Load

(in aMW)

()	
TRL	60.000
Exisiting Resource	8.030
RHWM	50.000
Above-RHWM Load	1.970
Above-RHWM Load	1.970
Tier 2 purchase from BPA	1.970
Remaining Above-RHWM Load	0.000



APPENDIX B New Resource - Specified Resource Example

Resource profile in Exhibit A:

Fuel Type	Date Resource	Date of	Percent of	Nameplate
	Dedicated to	Resource	Resource Used to	Capability
	Load	Removal	Serve Load	(MW)
Landfill Gas	10/01/2015	N/A	100%	1.6

	utory itus	Resourc	e Status	DF:	S or S?	Dispato	hable?	PN	CA?	If PNCA Upda	
5b1A	5b1B	Existing	New	Yes	No	Yes	No	Yes	No	Yes	No
	X X X X X										
Note:	Note: Fill in the table above with "X"s.										

Resource amounts in Exhibit A:

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	annual aMW
Fiscal Year 2016													
Total (MWh)	801	777	801	801	750	800	775	801	775	801	801	775	1.077
HLH (MWh)	HLH (MWh) 465 414 448 431 431 465 448 431 448 431 465 431 1.077												1.077
LLH (MWh)	336	363	353	370	319	335	327	370	327	370	336	344	1.076

Resource treatment:

New Resource that is Dedicated to Serve Load
(in aMW)

TRL 60.000
RHWM 50.000
Above-RHWM Load 10.000

Above-RHWM Load 10.000
New Resource 1.077
Tier 2 purchase from BPA 8.923
Remaining Above-RHWM Load 0.000



APPENDIX C

New Resource - Unspecified Resource Amounts Example

Resource profile in Exhibit A:

5	Shape of Unspecified Resource Amounts										
	Monthly Sh	ape Choice	Diurnal Shape Choice								
Purchase Period	Total Retail Load Monthly Shape	Flat Annual Shape	HLH Diurnal Shape	Flat Within- Month Shape							
FY 2012 - FY 2014		X		X							
FY 2015 - FY 2019		X		X							
FY 2020 - FY 2024		X		X							
FY 2025 - FY 2028		X		X							

Resource amounts in Exhibit A:

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	annual aMW
	Fiscal Year 2016												
Total (MWh)	744	721	744	744	696	743	720	744	720	744	744	720	1.000
HLH (MWh)	HLH (MWh) 432 384 416 400 400 432 416 400 416 400 432 400 1.000												
LLH (MWh)	312	337	328	344	296	311	304	344	304	344	312	320	1.000

Resource treatment:

New Resource that is Dedicated to Serve Load
(in aMW)

TRL 60.000
RHWM 50.000
Above-RHWM Load 10.000

Above-RHWM Load 10.000
New Resource 1.000
Tier 2 purchase from BPA 9.000
Remaining Above-RHWM Load 0.000



APPENDIX D RSS and other Resource Related Services

- Diurnal Flattening Service (DFS)*- a service that makes a resource that is variable
 or intermittent, or that portion of such resource that is variable or intermittent,
 equivalent to a resource that is flat within each Monthly/Diurnal period. DFS is
 combined with the Resource Shaping Charge to benchmark against a flat annual
 block of power.
- Forced Outage Reserves Service (FORS) a service that provides an agreed-to amount of capacity and energy to load during forced outages of a qualifying resource.
- Secondary Crediting Service (SCS) and Grandfathered Generation Management Service (GMS) – services that provide a monetary credit for the secondary output from an Existing Resource that is hydro based, with a firm critical energy component and a secondary energy component. BPA also provides forced outage energy when necessary. These services are intended to replace products (Service and Exchange and GMS) from the Subscription contracts for Load Following customers.

RSS-Related Services

- Transmission Scheduling Service (TSS)
 - TSS Full BPA creates the schedule (E-tag) for the customer and manages it through real-time using information provided by the customer. The customer is still obligated to provide energy quantities, transmission pathing, and transmission product types to Power Services.
 - TSS Partial The customer (or its agent) takes on all scheduling and tagging functions for its Non-Federal resources, creates all E-Tags with a 'CC' to BPA Power Services on each tag.
- Transmission Curtailment Management Service (TCMS)* If a customer's scheduled resource cannot make it to the customer's load due to congestion or a transmission outage, BPA will either provide replacement energy (for a curtailment) or replacement transmission (for an outage) and pass the cost on to the customer.
 - TCMS is available for resources supported by TSS that have firm transmission, resources that qualify as Mid-C Resource Over Non-Firm, or in limited circumstances, are in the process of acquiring firm transmission.
 - TCMS reduces the risk of a customer incurring a UAI due to transmission events.



APPENDIX E

Consumer-Owned Resource Serving Onsite Consumer Load Example

Resource profile in Exhibit A:

Resource Owner	Fuel Type	Nameplate Capability (MW)
Cascadia	Wood Waste	1.5

Resource amounts in Exhibit A:

Expected Output - Energy (aMW)									
Fiscal Year	2012	2013	2014	2015	2016	2017	2018	2019	2020
Annual aMW	0.522	0.522	0.522	0.522	0.522	0.522	0.522	0.522	0.522
Fiscal Year	2021	2022	2023	2024	2025	2026	2027	2028	
Annual aMW	0.522	0.522	0.522	0.522	0.522	0.522	0.522	0.522	

Resource treatment:

Consumer-Owned Resource Serving Onsite Consumer Load (in aMW)

TRL 60.000
Consumer-Owned Resource Serving Onsite Load 0.522
RHWM 50.000
Above-RHWM Load 9.478
Above-RHWM Load 9.478
Tier 2 purchase from BPA 9.478
Remaining Above-RHWM Load 0.000

