From: Lacambra,Jared M (BPA) - TPCF-MEAD-GOB

Sent: Wed Aug 25 13:29:06 2021

To: Vierck,Alexandra L (CONTR) - TPCC-TPP-4; Galbraith,Brian T (BPA) - TPCC-TPP-4; Harris,Adelle L (TFE)(BPA) - TSES-TPP-2; Wick,Martin A (BPA) - TPCV-TPP-4; Cosola,Anna M (BPA) - TPCC-TPP-4; Huntington,Joseph J (TFE)(BPA) - TSES-TPP-2; Mendez-Sierra,Akira M (BPA) - TPPC-OPP-3; Ngoy,Prachthearat (BPA) - TPMC-OPP-3; cwillenbrock@popud.org; David Hodder:

Subject: RE: L0494 Ponderay Renewable Fiber and Blockchain Project LLIR Kickoff Meeting Minutes FINAL

Importance: Normal

Thanks Murphy. I will review and report back.

J

From: Vierck,Alexandra L (CONTR) - TPCC-TPP-4 <alwitbrodt@bpa.gov>
Sent: Wednesday, August 25, 2021 1:27 PM
To: Galbraith,Brian T (BPA) - TPCC-TPP-4 <btgalbraith@bpa.gov>; Harris,Adelle L (TFE)(BPA) - TSES-TPP-2 <alharris@bpa.gov>; Lacambra,Jared M (BPA) - TPCF-MEAD-GOB <jmlacambra@bpa.gov>; Wick,Martin A (BPA) - TPCV-TPP-4 <mawickjr@bpa.gov>; Cosola,Anna M (BPA) - TPCC-TPP-4 <amcosola@bpa.gov>; Huntington,Joseph J (TFE)(BPA) - TSES-TPP-2 <jjhuntington@bpa.gov>; Mendez-Sierra,Akira M (BPA) - TPPC-OPP-3 <ammendezsierra@bpa.gov>; Ngoy,Prachthearat (BPA) - TPMC-OPP-3 <pxngoy@bpa.gov>; cwillenbrock@popud.org; David Hodder: <dhodder@popud.org>
Subject: RE: L0494 Ponderay Renewable Fiber and Blockchain Project LLIR Kickoff Meeting Minutes FINAL

Please see the attached finalized meeting minutes for L0494.

Thank you.

Alexandra (Murphy) Vierck
(ContR)

Program Support Specialist

Customer Service Engineering, Contract Administration

Bonneville Power Administration
bpa.gov | P 360-418-2551

-----Original Appointment-----
From: Vierck,Alexandra L (CONTR) - TPCC-TPP-4 **On Behalf Of** Galbraith,Brian T (BPA) - TPCC-TPP-4
Sent: Monday, July 19, 2021 09:34
To: Harris,Adelle L (TFE)(BPA) - TSES-TPP-2; Lacambra,Jared M (BPA) - TPCF-MEAD-GOB; Wick,Martin A (BPA) - TPCV-TPP-4; Cosola,Anna M (BPA) - TPCC-TPP-4; Vierck,Alexandra L (CONTR) - TPCC-TPP-4; Huntington,Joseph J (TFE)(BPA) - TSES-TPP-2; Mendez-Sierra,Akira M (BPA) - TPPC-OPP-3; Ngoy,Prachthearat (BPA) - TPMC-OPP-3; cwillenbrock@popud.org; David Hodder:
Subject: L0494 Ponderay Renewable Fiber and Blockchain Project LLIR Kickoff Meeting
When: Wednesday, August 18, 2021 08:30-09:30 (UTC-08:00) Pacific Time (US & Canada).
Where: Phone Conference: 509-822-4485 (b)(6)

Good morning,

Please see attached agenda for the Line and Load Kickoff meeting regarding L0494 occurring August 18th, 2021 from 8:30 to 9:30am.

For those of you that are calling in, the phone bridge information is listed in the attached agenda as well as here below:

Telephone Bridge

509-822-4485

Call ID: (b)(6)

Thank you.

From: Harris,Adelle L (TFE)(BPA) - TSES-TPP-2

Sent: Thu Aug 26 16:45:44 2021

To: April Owen

Subject: RE: Your message

Importance: Normal

Hi April,

That would be great!

Gives me some time to do some more digging. I'm fairly certain Pend Oreille will need to purchase transmission in the short-term market, however I want to make sure I give you the best information possible.

Adelle

From: April Owen <aowen@popud.org>
Sent: Thursday, August 26, 2021 4:20 PM
To: Harris,Adelle L (TFE)(BPA) - TSES-TPP-2 <alharris@bpa.gov>
Subject: [EXTERNAL] RE: Your message

Hi Adelle,

Do you mind if we set up a call Monday or Tuesday to discuss? It might be easier as a verbal discussion, plus I would like to invite Tyler Whitney to join so that we can both learn at the same time.

I also have an additional question for you (so sorry to throw these all on!). We have 2 separate customers that would like to increase their loads by approximately 8 MW each. They are cryptominers, so they can do this rather quickly. The additional load wouldn't be transmitted over BPA transmission, but would obviously be an increase in energy transmission for our overall system. Would this need a system impact study? I want to make sure we are not overstepping any bounds in our communications with customers.

Thanks Adelle!

April.

April Owen

Director, Audit, Finance & Power Supply

Public Utility District No. 1 of Pend Oreille County

P.O. Box 190 | 130 N. Washington | Newport, WA 99156

509.447.9321 | aowen@popud.org | www.popud.org

From: Harris,Adelle L (TFE)(BPA) - TSES-TPP-2 <alharris@bpa.gov>
Sent: Thursday, August 26, 2021 8:26 AM
To: April Owen <aowen@popud.org>
Subject: Your message

Hi April,

I wanted to drop a quick note to let you know I got your message and I am doing some research. When I pull up Pend Oreille's Point to Point contract history, it appears only 8MW was delivered over our system since 2017, but I know that can't be correct. The prior AE Angela DeClerck left me some notes that say:

"56 MW out of Boundary

8 MW from Box Canyon

Pend Oreille was purchasing transmission from Snohomish”

I was able to match up the 56 MW to a TSR in our system labeled as a Grandfathered LTF TSR (73532821) that is associated with a Boundary Transformer Agreement between Pend Oreille PUD, Seattle City Light, and BPA.

I need to make a few phone calls to try and figure this out so stay tuned. J

Adelle L. Harris

Transmission Account Executive

Dark Fiber / Commercial Wireless Program Manager

TSE/TPP-2

'(360) 619-6090 | ' (b)(6) |y alharris@bpa.gov

Bonneville Power Administration

referenced recipient. Any review, copying, printing, disclosure, distribution, or any other use, is strictly prohibited. If you are not the intended recipient, and believe that you have received this email in error, please notify the sender and delete the copy you received.

Pend Oreille County Public Utility District #1

From: TPCC_Contracts

Sent: Mon Aug 30 07:38:46 2021

To: cwillenbrock@popud.org

Cc: Galbraith,Brian T (BPA) - TPCC-TPP-4

Subject: IMPORTANT: FOR SIGNATURE: L0494_21TP-12420 Pend Oreille County PUD LLISIS

Importance: Normal

Attachments: L0494_21TP-12420_SIS Letter Final.pdf; L0494_21TP-12420_SIS Agreement Final.pdf; BPA Payment Instructions April 2019.pdf

The attached contract document requires Pend Oreille County PUD No. 1 signature (E-signature) by Close of Business on **09/20/2021**.

Please E-sign, type your title in the space provided and return to BPA by replying to this email and attaching the E-signed contract document.

Instructions:

ü Click the flagged signature field throughout the contract document, insert your E-signature and type in your title.

ü Save the PDF file for your records (saving is required prior to returning by email to capture your E-signature).

ü Reply to this email (tpcc_contracts@bpa.gov) by the date stated above and attach your E-signed contract document.

The enclosed cover letter provides further instructions and alternatives. If you have any questions, please contact Adelle Harris at (360) 619-6090.

Note: BPA Portland and Vancouver offices are closed for an undetermined time due to the COVID-19 virus. In order to avoid delay of payments made to BPA, please submit via electronic payment methods described in the attached Payment Instructions. Thank you for your understanding.

Thank you.

Department of Energy

Bonneville Power Administration
P.O. Box 61409
Vancouver, WA 98666-1409

TRANSMISSION SERVICES

August 30, 2021

In reply refer to: TSE/TPP-2

Mr. F. Colin Willenbrock, General Manager
Pend Oreille County PUD No. 1
PO Box 190
Newport, WA 99156-0190

Dear Mr. Willenbrock:

Pend Oreille County PUD No. 1 (Pend Oreille) submitted a Line and Load Interconnection Request to the Bonneville Power Administration (BPA), dated July 12, 2021, proposing to interconnect 85 MW paper mill load and additional data center load of 215 MW (300 MW total) at the Ponderay newsprint site that connects to BPA's Usk 230 kV Substation. BPA entered the request into its Interconnection Queue as Request No. L0494 (Request). A Line and Load Interconnection System Impact Study (LLISIS) is required to identify any system constraints, additional network facilities, and direct assignment facilities required to serve the proposed interconnection.

Enclosed is a signed original of Agreement No. 21TP-12420 between Pend Oreille and BPA, which provides for the LLISIS. Please have Pend Oreille's authorizing official electronically sign the flagged signature field in the Agreement and return by email to tpcc_contracts@bpa.gov by Close of Business (COB) on September 20, 2021. Alternatively, Pend Oreille may print, sign and scan the Agreement into a PDF file and return to BPA by email, or send a signed paper copy to one of the following addresses:

First Class Mail
U. S. Department of Energy
Bonneville Power Administration
ATTN: Brian Galbraith - TPCC/TPP-4
P.O. Box 61409
Vancouver, WA 98666

Overnight Delivery Service
U. S. Department of Energy
Bonneville Power Administration
ATTN: Brian Galbraith - TPCC/TPP-4
905 NE 11th Avenue
Portland, OR 97232
Phone: (503) 230-5912

The required advance payment of $30,000 can be made by wire transfer or ACH credit (payment instructions enclosed). Please reference Agreement No. 21TP-12420 when remitting payment. The executed Agreement and payment must be received by COB on September 20, 2021, or this offer will be withdrawn.

If you have any questions concerning this matter, please contact me at (360) 619-6090, or Brian Galbraith, Line and Load Interconnection Administrator at (503) 230-5912.

Sincerely,

(b)(6)

Adelle L. Harris
2021.08.30 07:32:26
-07'00'

Transmission Account Executive
Transmission Sales

2 Enclosures

U.S. DEPARTMENT OF ENERGY
BONNEVILLE POWER ADMINISTRATION

AGREEMENT

1. AGREEMENT NUMBER	2. AGREEMENT EFFECTIVE FROM DATE IN BLOCK 4 UNTIL	3. AMENDMENT NO.	4. EFFECTIVE DATE
21TP-12420	**See Block #11**	**-0-**	**Same as Block #17**

ISSUED TO	ISSUED BY
5. ORGANIZATION AND ADDRESS **Pend Oreille County PUD No. 1** **ATTN: Mr. F. Colin Willenbrock, General Manager** **PO Box 190** **Newport, WA 99156-0190**	6. ORGANIZATION AND ADDRESS **U.S. Department of Energy** **Bonneville Power Administration** **ATTN: Brian Galbraith – TPCC/TPP-4** **P.O. Box 61409** **Vancouver, WA 98666**
7. TECHNICAL CONTACT: **David Hodder** — PHONE NUMBER: **(509) 447-9343**	8. TECHNICAL CONTACT: **Jared Lacambra** — PHONE NUMBER: **(509) 822-4605**
9. ADMINISTRATIVE CONTACT: **David Hodder** — PHONE NUMBER: **(509) 447-9343**	10. ADMINISTRATIVE CONTACT: **Martin Wick** — PHONE NUMBER: **(360) 619-6818**

11. TITLE/BRIEF DESCRIPTION OF WORK TO BE PERFORMED UNDER THIS AGREEMENT

LINE AND LOAD INTERCONNECTION SYSTEM IMPACT STUDY AND ASSOCIATED TASKS FOR INTERCONNECTION REQUEST NO. L0494 – PONDERAY RENEWABLE FIBER AND BLOCKCHAIN PROJECT

Pend Oreille County PUD No. 1 (Pend Oreille) submitted a Line and Load Interconnection request on July 12, 2021, proposing to interconnect 85 MW paper mill load and additional data center load of 215 MW (300 MW total) at the Ponderay newsprint site that connects to BPA's Usk 230 kV Substation. The request has been entered into BPA's Interconnection Queue as Request No. L0494.

In order to assess the impact of this request, the Bonneville Power Administration (BPA) will, at Pend Oreille's expense, perform a Line and Load Interconnection System Impact Study (LLISIS) to assess the impact of the proposed interconnection of Pend Oreille's facilities on BPA's transmission system, and on the transmission systems of any third parties. The LLISIS will identify any system constraints, additional network facilities, and direct assignment facilities required to provide the requested interconnection. The LLISIS evaluation will include, but not be limited to: (i) facility thermal overloads; (ii) voltage support and control problems; (iii) voltage stability problems; (iv) transient stability problems; and (v) dynamic stability problems. The LLISIS will be based upon the results of previously performed studies, where applicable.

The Point of Interconnection to be studied will be BPA's Usk Substation.

BPA estimates that the LLISIS and associated tasks will require 60 days to complete, following BPA's receipt of this fully executed Agreement and associated payment from Pend Oreille.

Termination: This Agreement shall become effective upon execution by both parties and shall terminate upon full performance by both parties of their respective obligations set forth herein, but in no event shall the term of this Agreement exceed five years from its effective date.

The following document is attached to and becomes a part of this Agreement:

- Financial Terms and Conditions Statement

12. AMOUNT TO BE PAID BY BPA	13. AMOUNT TO BE PAID TO BPA
$	**$30,000 (estimated)**
14. SUBMIT SIGNED AGREEMENT TO **U.S. Department of Energy** **Bonneville Power Administration** **ATTN: Brian Galbraith – TPCC/TPP-4** **P.O. Box 61409** **Vancouver, WA 98666**	15. ACCOUNTING INFORMATION *(For BPA Use Only)* 16. SUBMIT INVOICE TO *(Name and Address)*

PARTICIPANT	BPA
17. APPROVED BY *(Signature)* — DATE *(MM/DD/YY)*	18. APPROVED BY *(Signature)*: (b)(6) Adelle L. Harris 2021.08.30 07:32:55 -07'00' — DATE *(MM/DD/YY)*
NAME AND TITLE	NAME AND TITLE **Transmission Account Executive** **Transmission Sales**

BPA's cost of performing the study at Pend Oreille's expense shall be the actual cost of doing the work specified in this Agreement, plus an overhead rate of 35%, representing the indirect costs of the study office plus the contractual support costs of contract negotiation, billing and accounting functions, and contract management.

Pend Oreille hereby agrees to advance $30,000, the estimated study cost, to BPA upon execution of this Agreement. Payments made to BPA shall be held in an account established for this Agreement.

If BPA needs additional funds to complete the work at any time during performance of the study, BPA may request, in writing, for Pend Oreille to advance such additional funds to BPA for deposit in the account. Pend Oreille shall advance such additional funds within 30 days of BPA's written request, and BPA may temporarily stop work until Pend Oreille supplies the requested funds. If Pend Oreille does not advance such additional funds by the due date or, if at any time before completion of the study Pend Oreille elects to stop work under this Agreement, BPA has the right to cease all work and restore, as a cost to the study at Pend Oreille's expense, government facilities and/or records to their condition prior to the beginning of work under this Agreement.

Within a reasonable time after completion of the study, BPA shall make a full accounting to Pend Oreille showing the actual costs charged against the account. BPA shall either remit any unexpended balance in the account to Pend Oreille or bill for any costs in excess of the deposits in the account. Pend Oreille shall pay any excess costs within 30 days of the invoice date (due date).

Payments not received by the due date will accrue interest on the amount due beginning the first calendar day after the due date to the date paid, at an annual interest rate equal to the higher of i) the prime rate (as reported in the Wall Street Journal in the first issue published during the month in which payment by Pend Oreille is due) plus 4 percent; or ii) such prime rate multiplied by 1.5.

BPA Payment Instructions

1. Wire Transfer (FEDWIRE) Payment Instructions

Check with your bank for wire transfer deadlines and associated wire fees. You may contact us after your first wire payment, and we will verify that it transferred accurately.

Necessary Information to Complete Process:

1) **ABA Number: 021030004**
2) **Receiving Bank: "TREAS NYC"**
3) **Product Code: "TREAS NYC / CTR"**
4) **Account: 89001401**
5) **Third Party Information After "OBI=" Provide pertinent information to insure correct application of payment. (i.e.: the BPA invoice number you are paying, the contract number, or other information specific to your payment)**

2. Automated Clearing House (ACH) Credit Instructions

Payments must be submitted no later than the day before payment is due since ACH is processed overnight. You may contact us at (503) 230-5788, after your first ACH payment, and we will verify that it transferred accurately.

Necessary Information to Complete Process:

1) **ABA Number: 051036706**
2) **Account Number: 312013**
3) **Receiving Bank: Federal Reserve Bank**
4) **Bank Address: 701 E. Byrd Street, Richmond, VA 23219**
5) **Bank Phone Number: 804-697-8000**
6) **Receiver Name: BPA**
7) **Identification Number: This field may be used instead of the addenda record to identify the payment.**

3. Direct Debit Payment

This option authorizes the Bonneville Power Administration (BPA) to automatically withdraw payments from a bank account. It is free and only requires registration. Submit the direct debit form.

4. Payment by Credit Card or Checking Account (Pay.gov)

BPA accepts VISA, MasterCard, American Express, Discover, and Diners for invoices under $25,000 (limited to one credit card transaction per invoice) or electronic payments from a checking account for any dollar amount. Go to Pay.gov.

5. Payment by Check (only if permitted by agreement or contract terms)

U.S. Postal Service

BONNEVILLE POWER ADMINISTRATION
ATTN: LOCKBOX
P.O. BOX 3621
PORTLAND, OR 97208-3621

FedEx

BONNEVILLE POWER ADMINISTRATION
ATTN: LOCKBOX
905 NE 11th AVE
PORTLAND, OR 97232

For more information: visit HowtoPay, email ar@bpa.gov or call 503-230-5788.

This information is being provided to you upon your request. It contains sensitive account and banking information. It should be used for its intended purpose only.

Updated April 2019

From: April Owen

Sent: Mon Aug 30 11:30:24 2021

To: Patton,Kathryn B (BPA) - PSS-SEATTLE

Subject: [EXTERNAL] RE: Pend Oreille FY2022 Forecast Breakout 2021-8-18.xlsx

Importance: Normal

Thank you!

From: Patton,Kathryn B (BPA) - PSS-SEATTLE <kbpatton@bpa.gov>
Sent: Monday, August 30, 2021 11:11 AM
To: April Owen <aowen@popud.org>
Cc: Normandeau,Mike (BPA) - PSE-RONAN <mrnormandeau@bpa.gov>; Babaidhan,Sami A (BPA) - PSSE-MEAD-GOB <sababaidhan@bpa.gov>
Subject: RE: Pend Oreille FY2022 Forecast Breakout 2021-8-18.xlsx

Hello April,

The attached has Scenario 3.

Annual Net Requirement: 16.633

Monthly Block Amounts:

October

November

December

January

February

March

April

May

June

July

August

September

5,208

21,630

19,344

27,528

24,192

23,033

1,440

0

0

5,208

5,952

11,520

Monthly Power Costs:

$234,228

$635,830

$604,528

$895,720

$866,362

$723,074

$235,772

$203,352

$202,879

$155,062

$189,470

$410,300

Kathryn Patton

Public Utility Specialist | Power Account Services

Bonneville Power Administration
bpa.gov | P 206-403-8034 |

cid:image001.jpg@01D52C3E.DF0B9390cid:image008.jpg@01D52C3E.09FCE1E0cid:image009.jpg@01D52C3E.09FCE1E0cid:image010.jpg@01D52C3E.09FCE1E0cid:image011.jpg@01D52C3E.09FCE1E0cid:image012.jpg@01D52C3E.09FCE1E0

From: April Owen <aowen@popud.org>
Sent: Monday, August 30, 2021 10:45 AM
To: Patton,Kathryn B (BPA) - PSS-SEATTLE <kbpatton@bpa.gov>

Cc: Normandeau,Mike (BPA) - PSE-RONAN <mrnormandeau@bpa.gov>; Babaidhan,Sami A (BPA) - PSSE-MEAD-GOB <sababaidhan@bpa.gov>
Subject: [EXTERNAL] RE: Pend Oreille FY2022 Forecast Breakout 2021-8-18.xlsx

Good morning Kate,

I was wondering where to go next when I got the notification from Andres, so thank you for running the numbers! That was very helpful, as I was not correctly incorporating in my estimates how the months with zero NLSL reduced the overall Net Requirements annual average. Could you run one more scenario for me?

Oct

Nov

Dec

Jan

Feb

Mar

Apr

May

June

July	Aug	Sept
Mill Operations (NLSL)		
0		
0		
85		
85		
85		
85		
85		
85		
85		
85		
85		
85		

Cryptomining (New NLSL)

0

20

20

20

20

59

59

59

59

59

59

59

Total additional load

0

20

105

105

105

144

144

144

144

144

144

144

144

We are meeting with the customer this afternoon, so I am hoping to be able to get back to everyone on our final number tomorrow. Thanks for all the help!

April.

From: Patton,Kathryn B (BPA) - PSS-SEATTLE <kbpatton@bpa.gov>

Sent: Monday, August 30, 2021 10:16 AM
To: April Owen <aowen@popud.org>; Cicarelli,Andres A (BPA) - KSL-BELL-1 <aacicarelli@bpa.gov>
Cc: Normandeau,Mike (BPA) - PSE-RONAN <mrnormandeau@bpa.gov>; Babaidhan,Sami A (BPA) - PSSE-MEAD-GOB <sababaidhan@bpa.gov>
Subject: RE: Pend Oreille FY2022 Forecast Breakout 2021-8-18.xlsx

Hello April,

Just to let you know Andres retired on Friday. Mike is working with our forecasting manager to find out who will be covering his accounts.

In the meantime I was able to mock up new Net Requirement calculations based on your two scenarios. You can reference attached to see the specifics but here is how it breaks down.

Scenario 1:

Annual aMW Net Requirement: 7.896 aMWs

Monthly Block amounts:

October

November

December

January

February

March

April

May

June

July

August

September

2,232

10,094

9,672

13,392

11,424

11,145

720

0

0

2,976

2,976

Monthly Total Power Costs:

$104,174

$296,516

$304,490

$435,058

$409,343

$349,143

$112,752

$96,532

$96,307

$88,557

$94,772

$182,554

Scenario 2:

Annual aMW Net Requirement: 6.354 aMWs

Monthly Block amounts:

October

November

December

January

February

March

April

May

June

July

August

September

2,232

8,652

7,440

10,416

9,408

8,916

720

0

0

2,232

2,232

4,320

Monthly Total Power Costs:

$96,556

$254,788

$232,742

$339,136

$336,285

$279,494

$93,940

$77,681

$77,501

$66,432

$71,041

$154,437

Please let me know if you have any questions.

Kathryn Patton

Public Utility Specialist | Power Account Services

Bonneville Power Administration
bpa.gov | P 206-403-8034 |

cid:image001.jpg@01D52C3E.DF0B9390cid:image008.jpg@01D52C3E.09FCE1E0cid:image009.jpg@01D52C3E.09FCE1E0cid:image010.jpg@01D52C3E.09FCE1E0cid:image011.jpg@01D52C3E.09FCE1E0cid:image012.jpg@01D52C3E.09FCE1E0

From: April Owen <aowen@popud.org>
Sent: Friday, August 27, 2021 4:05 PM
To: Cicarelli,Andres A (BPA) - KSL-BELL-1 <aacicarelli@bpa.gov>
Cc: Normandeau,Mike (BPA) - PSE-RONAN <mrnormandeau@bpa.gov>; Patton,Kathryn B (BPA) - PSS-SEATTLE <kbpatton@bpa.gov>
Subject: [EXTERNAL] RE: Pend Oreille FY2022 Forecast Breakout 2021-8-18.xlsx

Hi Andres,

Mike and Kate and I discussed the Net Requirements process, as BPA transmission will need to perform studies at the mill site that will delay their start date. We discussed running through some scenarios to see what difference it made (if any) on the Net Requirements calculation. Not sure if you are the right person for this, but started with you!

Here's what I would like to test:

Oct

Nov

Dec

Jan

Feb

Mar

Apr

May

June

July

Aug

Sept

Mill Operations (NLSL)

0

0

0

85

85

85

85

85

85

85

85

85

Cryptomining (New NLSL)

0

0

0

0

0

0

25

25

25

50

50

50

Total additional load

0

0

0

85

85

85

110

110

110

135

135

135

Oct

Nov

Dec

Jan

Feb

Mar

Apr

May

June

July

Aug

Sept

Mill Operations (NLSL)

0

0

0

0

80

80

80

80

80

80

80

80

Cryptomining (New NLSL)

0

20

20

20

20

20

20

20

20

20

20

20

Total additional load

0

20

20

20

100

100

100

100

100

100

100

100

Let me know if I should run this through someone else. Again, I am looking to see if it changes what our annual Net Requirements will be. Otherwise, we will stick with what you have outlined below.

Thanks!

April.

April Owen

Director, Audit, Finance & Power Supply

Public Utility District No. 1 of Pend Oreille County

P.O. Box 190 | 130 N. Washington | Newport, WA 99156

509.447.9321 | aowen@popud.org | www.popud.org

From: Cicarelli,Andres A (BPA) - KSL-BELL-1 <aacicarelli@bpa.gov>
Sent: Friday, August 20, 2021 12:09 PM
To: April Owen <aowen@popud.org>
Cc: Normandeau,Mike (BPA) - PSE-RONAN <mrnormandeau@bpa.gov>
Subject: Pend Oreille FY2022 Forecast Breakout 2021-8-18.xlsx

Hi April,

Attached is the revised FY2022 forecast for Pend Oreille based on the PUD's comments. Any thoughts?

Talk to you later,

Andres

Pend Oreille County Public Utility District #1

From: Galbraith,Brian T (BPA) - TPCC-TPP-4

Sent: Mon Aug 30 16:31:13 2021

To: Colin Willenbrock

Cc: Tyler Whitney; April Owen; Harris,Adelle L (TFE)(BPA) - TSES-TPP-2

Subject: RE: IMPORTANT: FOR SIGNATURE: L0494_21TP-12420 Pend Oreille County PUD LLISIS

Importance: Normal

Thanks for the heads up, Colin. I'll be looking for the funds transfer to post so I can initiate the system impact study.

Brian

From: Colin Willenbrock <cwillenbrock@popud.org>
Sent: Monday, August 30, 2021 3:37 PM
To: TPCC_Contracts <tpcc_contracts@bpa.gov>
Cc: Galbraith,Brian T (BPA) - TPCC-TPP-4 <btgalbraith@bpa.gov>; Tyler Whitney <TWhitney@popud.org>; April Owen <aowen@popud.org>
Subject: [EXTERNAL] RE: IMPORTANT: FOR SIGNATURE: L0494_21TP-12420 Pend Oreille County PUD LLISIS

Please see attached fully executed agreement. Electronic funds transfer per the instructions will be forthcoming.

Thank you,

Colin

F. Colin Willenbrock

General Manager

Public Utility District No. 1 of Pend Oreille County

P.O. Box 190 | 130 N. Washington

Newport, Washington 99156
509.447.3137 | cwillenbrock@popud.org | www.popud.org

From: TPCC_Contracts <tpcc_contracts@bpa.gov>
Sent: Monday, August 30, 2021 7:39 AM
To: Colin Willenbrock <cwillenbrock@popud.org>
Cc: Galbraith,Brian T (BPA) - TPCC-TPP-4 <btgalbraith@bpa.gov>
Subject: IMPORTANT: FOR SIGNATURE: L0494_21TP-12420 Pend Oreille County PUD LLISIS

CAUTION: This email originated from outside of the POPUD. Do not click links or open attachments unless you recognize the sender and know the content is safe.

The attached contract document requires Pend Oreille County PUD No. 1 signature (E-signature) by Close of Business on **09/20/2021**.

Please E-sign, type your title in the space provided and return to BPA by replying to this email and attaching the E-signed contract document.

Instructions:

ü Click the flagged signature field throughout the contract document, insert your E-signature and type in your title.

ü Save the PDF file for your records (saving is required prior to returning by email to capture your E-signature).

ü Reply to this email (tpcc_contracts@bpa.gov) by the date stated above and attach your E-signed contract document.

The enclosed cover letter provides further instructions and alternatives. If you have any questions, please contact Adelle Harris at (360) 619-6090.

Note: BPA Portland and Vancouver offices are closed for an undetermined time due to the COVID-19 virus. In order to avoid delay of payments made to BPA, please submit via electronic payment methods described in the attached Payment Instructions. Thank you for your understanding.

Thank you.

Pend Oreille County Public Utility District #1

From: Normandeau,Mike (BPA) - PSE-RONAN

Sent: Tue Aug 31 12:45:45 2021

To: April Owen; Colin Willenbrock (cwillenbrock@popud.org)

Cc: Patton,Kathryn B (BPA) - PSS-SEATTLE; Babaidhan,Sami A (BPA) - PSSE-MEAD-GOB; Moore,Lisa A (BPA) - PSSE-MEAD-GOB; Harris,Adelle L (TFE)(BPA) - TSES-TPP-2; Lacambra,Jared M (BPA) - TPCF-MEAD-GOB

Subject: Checking In- New Large Single Load (NLSL) Information

Importance: High

Attachments: External_NLSL-Presentation_Slice or Block.pptx; FacilityDeterminationRequestLetterExample_draft.docx; Checklist.pdf

Good Afternoon April,

Passing along information regarding what is required for BPA to begin a NLSL determination. As noted in our call last week, we currently driving towards an agreed to Net Requirement for FY 2022. The scenarios you provided us late last and early yesterday should help us get there. This will be my main focus for the discussion tomorrow afternoon. With that said, the NLSL determination/monitoring process also needs to start warming up. Much will depend on the sequencing for how the mill and crypto load comes online. The sooner the crypto load comes online, the faster we need to be in getting the NLSL determination up and running.

Three documents are attached.

1. NLSL Presentation– note: we are assuming a Planned NLSL for the Crypto Load
2. Letter Template for requesting a NLSL determination
3. Checklist for types of information we will need – Note: there's a ton of detail required. We'll work with you as the information becomes available…

My preference is that we get the Net Requirement finalized and then quickly switch gears to the NLSL

determination process. The first step being the PUD sends us a letter requesting the process to begin. We then respond with an acknowledgement and a request for additional information (this is largely covered in the attached checklist). I'll do everything in my power to keep this as simple as possible for the PUD. I know how busy you all are.

If time allows, we will touch on the NLSL process tomorrow. Adelle Harris from Transmission will also be on the call. Look forward to the discussion!

Mike

Michael R. Normandeau
Account Executive | PSE – Power Services
Bonneville Power Administration
bpa.gov | P 406-676-2669 | C (b)(6)
cid:image001.jpg@01D52C3E.DF0B9390cid:image008.jpg@01D52C3E.09FCE1E0cid:image009.jpg@01D52C3E.09FCE1E0cid:image010.jpg@01D52C3E.09FCE1E0cid:image011.jpg@01D52C3E.09FCE1E0cid:image012.jpg@01D52C3E.09FCE1E0

New Large Single Load (NLSL)

NLSL Definition

- Per Section 3(13) of the Northwest Power Act, a New Large Single Load (NLSL) is:
  - Any load that grows by 10 aMW or more in any consecutive 12-month period provided that
    - the load was ***not*** contracted for, or committed to be served (as determined by the Administrator) by a public body, cooperative, investor-owned utility, or Federal agency customer prior to September 1, 1979. Also known as a CFCT load.
    - Occurred at a ***single facility***, as determined by BPA.
- 10 aMW means a single facility takes an additional 87,600,000 kWh (non leap year) during a consecutive 12-month period.
- A end-use consumer may have multiple facilities. The individual facilities will have separate monitoring periods and will be measured independently of each other.

Why Were NLSLs Created

- Why did Congress write into the Regional Act provisions regarding NLSLs?

1. Protect industry in other parts of the country by eliminating rate enticements to relocate to the Pacific Northwest.

2. To preserve the benefits of the Federal Columbia River Power System (FCRPS) for residential and small-farm customers of public utilities in the Pacific Northwest.

3. To discourage migration of investor-owned utility (IOU) industrial customers to public utilities.

Why Does the NLSL Designation Matter?

- BPA has a statutory obligation to monitor loads to determine if they are NLSLs.
- BPA cannot serve NLSLs at BPA's lowest Preference (PF) Rates.
- BPA has a statutory obligation to serve NLSLs, if requested, but only at the New Resource (NR) rate.
  - BPA's NR Rate constitutes a 7(b)(3) Rate Supplement, which in BP-18 is about $80 per MWh.
- Customers also can elect to serve NLSLs with non-federal resources.

How is a NLSL Measured and Determined?

Monitoring Timeline

- Utility notifies BPA of a Potential NLSL.
- Utility request a Facility Determination letter from BPA
- BPA sends a response to the request for a Facility Determination letter and request information, including a Plan of Service for the new load
- Utility submits Plan of Service letter to BPA
- BPA conducts site visit(s) of proposed facilities.
- BPA send a Facility Determination letter and the parties establish the monitoring period.
- BPA updates Exhibit A and Exhibit D.
- BPA starts monitoring the load.

Facility Determination

- The statute defines a NLSL as a *single facility,* so determining what makes up a single facility is very important

  - Facilities Determinations – factors to be considered
    1. Is the load operated by a single consumer?
    2. Is the load at a single location? In a single building?
    3. Does the load serve a manufacturing process which produces a single product or type of product?
    4. Are separable portions of the load interdependent?
    5. Is the load contracted for, billed or served as a single load under the utility's customary billing and service policy?
    6. Are there applicable precedents?
    7. Any other relevant factors as determined by the Parties

Monitoring Period

- Start of Utility Service:
  - The date of first utility service to a preexisting load. This option applies in situations in which an existing load of 10 aMW or more is “taken over” in a merger, annexation or similar situation. Here the load is a NLSL from the day the “new” utility begins service.
- Initial Energization:
  - The date of initial energization (for test and start up) with BPA’s consent. In this instance BPA and the utility agree on a date on which the construction at the site is substantially complete and production equipment is being energized for test and startup.
- Commercial Operation:
  - The date of commercial operation (actual production).
- Alternative Agreed Upon Date:
  - BPA and the utility agree that the new load will start at 10 aMW or more in its first year of operation so that the load is subject to NLSL treatment from the date it starts operating. Load growth measured from date of commercial operation.

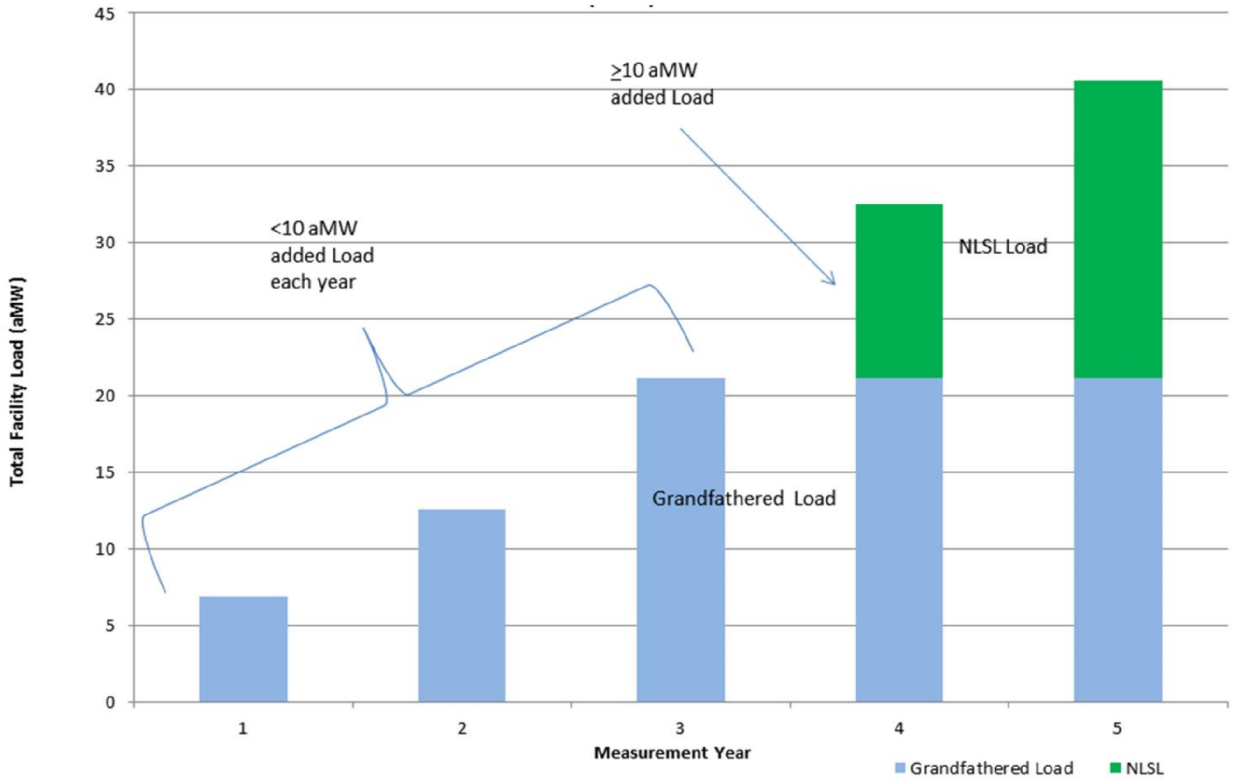
At the End of a Monitoring Period

- If the facility, as defined in the Facility Determination letter grows by more than 87,600,000 kWh during the year, then the load is a NLSL.
  - BPA sends a letter notifying the utility that their load is an NLSL and updates exhibit D.

- If the facility does not grow by more than 87,600,000 kWh during the year, the load is not a NLSL (yet).
  - BPA continues to monitor the load during the next monitoring period.
  - BPA calculates the Grandfathered Load amount for prior monitoring period.
  - If the load grows by more than 10 aMW above the Grandfathered Load in the following monitoring period, the load becomes an NLSL.

Grandfathered Load

- Grandfathered Load – means the cumulative total of the load growth of a Potential NLSL or Planned NLSL which is less than 10 aMW in any 12-month monitoring period
- Grandfathered Load is eligible for service at the PF rate.



Planned vs Potential NLSL

How to Serve the Load Prior to NLSL Determination

- Once a load at a facility is deemed to be a possible NLSL, which will be monitored for NLSL purposes the serving utility must decide how the load to be monitored shall be characterized in the utility's Exhibit D, Section 1.
  - Potential NLSL –Utility and BPA agree the load at the facility is expected to grow by ***less*** than 10 aMW during the facility's next 12-month monitoring period. But, BPA monitors the load because it *could* grow by 10 aMW or more.
  - Planned NLSL – Utility and BPA agree the load at the facility is expected to grow by ***at least*** 10 aMW during the facility's next 12-month monitoring period. BPA treats the load as if it is an NLSL and then checks to see if it is not.

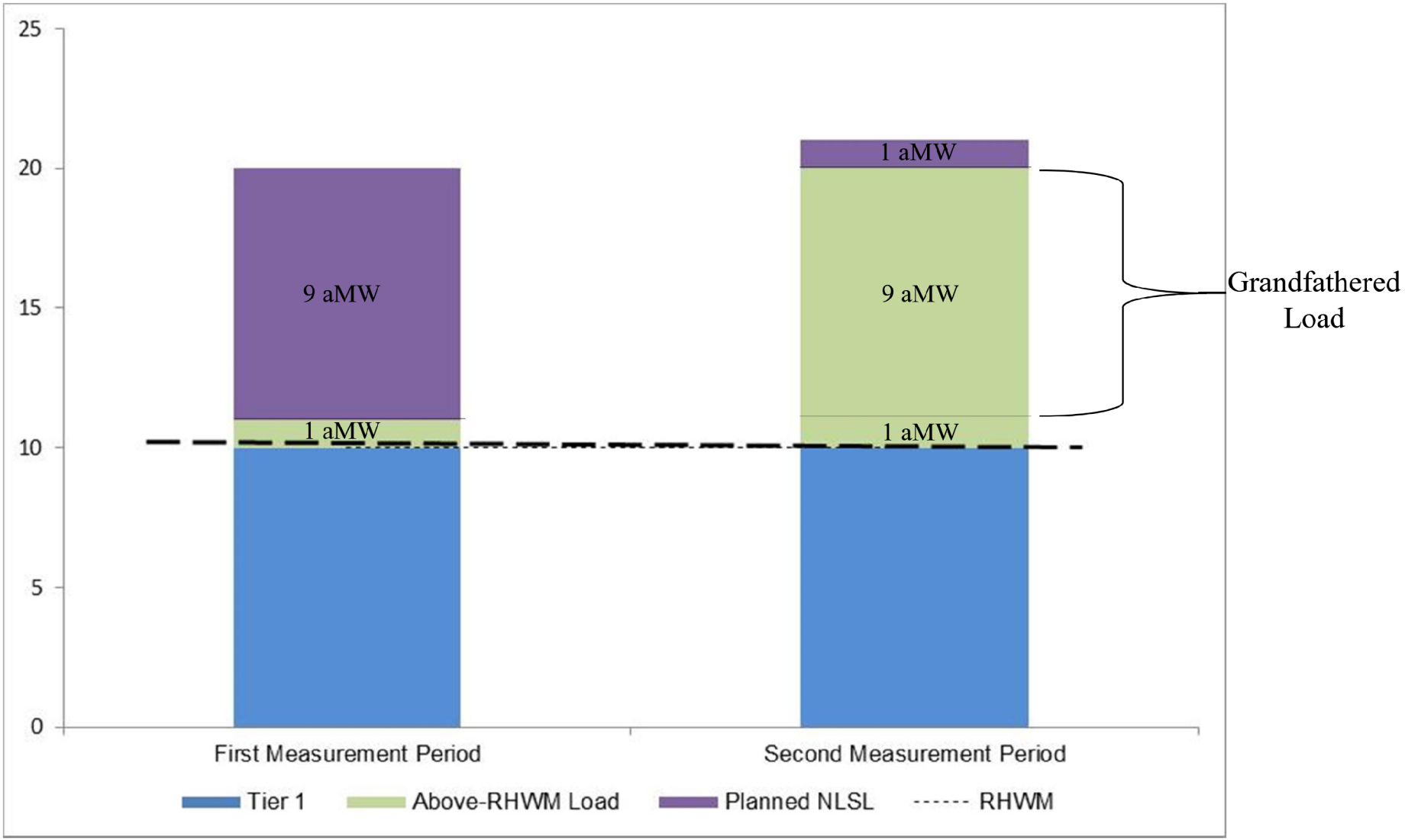
- Please note that neither Potential NLSL nor Planned NLSLs are in fact NLSLs.

Potential/Planned if Above RHWM

	Abvove RHWM	
	Potential NLSL	Planned NLSL
Served with	PF or Non Federal [1]	Non Federal Resource
Back Bill Possible?	Yes	No
Liquidated Damages Possible?	No	Yes

[1]Service would be based on customer Above RHWM load election.

Grand Father Load and Planned NLSL



Potential/Planned if Below RHWM

	Below RHWM	
	Potential NLSL	Planned NLSL
Served with	PF	Non Federal Resource
Back Bill Possible?	Yes	No
Liquidated Damages Possible?	No	Yes

Liquated Damages

- Customers will be subject to liquidated damage if the following applies:
  - Customer's load is below its RHWM
  - Customer is serving a Planned NLSL with Non-Federal resources
  - The Planned NLSL does not breach 10 aMW in the given monitoring period

- BPA will charge the customer liquidated damages to recover the revenue for power that the customer otherwise would have purchased from BPA at the PF rate.

Serving a Planned NLSL or NLSL

NR Rate or Non-Federal Resource

- Per the Act, BPA can only serve a NLSL at the New Resources (NR) Rate.
  - In BP-18, the NR rate is about $80/MWh.
  - **As part of the RD power sales contract, Slice/Block and Block waived their right to purchase at the NR rate.**
- An utility can elect to serve its NLSL with non-federal resource not designated to serve other retail load.
- Since BPA treats a Planned NLSL as if it was already an NLSL, a utility can also serve a Planned NLSL load with a non-federal resource.

Non-Federal Resource(s) Used to Serve Planned NLSL or NLSL

- If an utility elects to serve its Planned NLSL or NLSL with non-federal resources, it must dedicate resource(s) equal to the forecasted load for the upcoming monitoring period.
- The forecasted load will subtracted from TRL, along with all existing resources, to calculate the utilities annual Net Requirement. This ensure that no PF power is used to serve the Planned NLSL or NLSL on a planned basis.

Dear «Account Executive»,

«Customer Long Name» («Customer Name») is requesting that BPA make a Facility Determination under BPA's New Large Single Load (NLSL) Policy for the «Name of site and load». The site is and is expected to come online on «Date». Initially, «Name of load» will be capable of consuming «##» MW. Our load forecast for this site was submitted to BPA by email on «Date» and included the amounts that we propose to serve as a Planned NLSL.

. We have included preliminary information to assist BPA in making the Facility Determination for the «Name of site» site as attachments to this letter. We hope that the Facility Determination can be concluded in advance of «Date» so that «Name of load» and «Customer Name» can move ahead with sure knowledge of this load's treatment under BPA's NLSL Policy. To this end, we commit to providing BPA whatever data is requested as quickly as possible.
«Customer Name» intends to bring non-federal resources to serve the NLSL served by «Customer Name».

Information Provided to Aid BPA in the NLSL Facility Determination

1) Whether the load is operated by a single end-use consumer.

   Yes, the load at the «Name of site» site is operated by a single end-use customer, «Name of load», a subsidiary of «Name of developer». «Name of load» is a corporation organized under the laws of the «State».

2) Whether the load is in a single location.

   «Yes/No», the load is in a single location.

   A legal description of the «Name of site» site is as follows:

   «A tract of land located in «legal description of site»».

3) Whether the load serves a manufacturing process which produces a single product or type of product.

   «Description of sites product and process»

4) Whether separable portions of the load are independent.

5) Whether the load is contracted for, served or billed as a single load under «Customer Name»'s customary billing and service policy.

6) Consideration of facts from previous similar situations.

7) Any other factors that Parties deem to be relevant.

From: April Owen

Sent: Wed Sep 01 09:26:54 2021

To: Accounts Receivable FTOA

Cc: Galbraith,Brian T (BPA) - TPCC-TPP-4; Colin Willenbrock; Tyler Whitney

Bcc: ar@bpa.gov

Subject: [EXTERNAL] RE: IMPORTANT: FOR SIGNATURE: L0494_21TP-12420 Pend Oreille County PUD LLISIS

Importance: Normal

Attachments: L0494_21TP-12420_SIS Agreement Final.pdf

Funds for this agreement in the amount of $30,000 should transfer tomorrow, 9/2/21.

Thank you,

April

April Owen

Director, Audit, Finance & Power Supply

Public Utility District No. 1 of Pend Oreille County

P.O. Box 190 | 130 N. Washington | Newport, WA 99156

509.447.9321 | aowen@popud.org | www.popud.org

From: Colin Willenbrock <cwillenbrock@popud.org>
Sent: Monday, August 30, 2021 3:37 PM
To: TPCC_Contracts <tpcc_contracts@bpa.gov>
Cc: Galbraith,Brian T (BPA) - TPCC-TPP-4 <btgalbraith@bpa.gov>; Tyler Whitney <TWhitney@popud.org>; April Owen <aowen@popud.org>
Subject: RE: IMPORTANT: FOR SIGNATURE: L0494_21TP-12420 Pend Oreille County PUD LLISIS

Please see attached fully executed agreement. Electronic funds transfer per the instructions will be forthcoming.

Thank you,

Colin

F. Colin Willenbrock

General Manager

Public Utility District No. 1 of Pend Oreille County

P.O. Box 190 | 130 N. Washington

Newport, Washington 99156
509.447.3137 | cwillenbrock@popud.org | www.popud.org

From: TPCC_Contracts <tpcc_contracts@bpa.gov>
Sent: Monday, August 30, 2021 7:39 AM
To: Colin Willenbrock <cwillenbrock@popud.org>
Cc: Galbraith,Brian T (BPA) - TPCC-TPP-4 <btgalbraith@bpa.gov>
Subject: IMPORTANT: FOR SIGNATURE: L0494_21TP-12420 Pend Oreille County PUD LLISIS

CAUTION: This email originated from outside of the POPUD. Do not click links or open attachments unless you recognize the sender and know the content is safe.

The attached contract document requires Pend Oreille County PUD No. 1 signature (E-signature) by Close of Business on **09/20/2021**.

Please E-sign, type your title in the space provided and return to BPA by replying to this email and attaching the E-signed contract document.

Instructions:

ü Click the flagged signature field throughout the contract document, insert your E-signature and type in your title.

ü Save the PDF file for your records (saving is required prior to returning by email to capture your E-signature).

ü Reply to this email (tpcc_contracts@bpa.gov) by the date stated above and attach your E-signed contract document.

The enclosed cover letter provides further instructions and alternatives. If you have any questions, please contact Adelle Harris at (360) 619-6090.

Note: BPA Portland and Vancouver offices are closed for an undetermined time due to the COVID-19 virus. In order to avoid delay of payments made to BPA, please submit via electronic payment methods described in the attached Payment Instructions. Thank you for your understanding.

Thank you.

and delete the copy you received.

Pend Oreille County Public Utility District #1

U.S. DEPARTMENT OF ENERGY
BONNEVILLE POWER ADMINISTRATION

AGREEMENT

1. AGREEMENT NUMBER	2. AGREEMENT EFFECTIVE FROM DATE IN BLOCK 4 UNTIL	3. AMENDMENT NO.	4. EFFECTIVE DATE
21TP-12420	**See Block #11**	**-0-**	**Same as Block #17**

ISSUED TO	ISSUED BY
5. ORGANIZATION AND ADDRESS **Pend Oreille County PUD No. 1** **ATTN: Mr. F. Colin Willenbrock, General Manager** **PO Box 190** **Newport, WA 99156-0190**	6. ORGANIZATION AND ADDRESS **U.S. Department of Energy** **Bonneville Power Administration** **ATTN: Brian Galbraith – TPCC/TPP-4** **P.O. Box 61409** **Vancouver, WA 98666**
7. TECHNICAL CONTACT: **David Hodder** — PHONE NUMBER: **(509) 447-9343**	8. TECHNICAL CONTACT: **Jared Lacambra** — PHONE NUMBER: **(509) 822-4605**
9. ADMINISTRATIVE CONTACT: **David Hodder** — PHONE NUMBER: **(509) 447-9343**	10. ADMINISTRATIVE CONTACT: **Martin Wick** — PHONE NUMBER: **(360) 619-6818**

11. TITLE/BRIEF DESCRIPTION OF WORK TO BE PERFORMED UNDER THIS AGREEMENT

LINE AND LOAD INTERCONNECTION SYSTEM IMPACT STUDY AND ASSOCIATED TASKS FOR INTERCONNECTION REQUEST NO. L0494 – PONDERAY RENEWABLE FIBER AND BLOCKCHAIN PROJECT

Pend Oreille County PUD No. 1 (Pend Oreille) submitted a Line and Load Interconnection request on July 12, 2021, proposing to interconnect 85 MW paper mill load and additional data center load of 215 MW (300 MW total) at the Ponderay newsprint site that connects to BPA's Usk 230 kV Substation. The request has been entered into BPA's Interconnection Queue as Request No. L0494.

In order to assess the impact of this request, the Bonneville Power Administration (BPA) will, at Pend Oreille's expense, perform a Line and Load Interconnection System Impact Study (LLISIS) to assess the impact of the proposed interconnection of Pend Oreille's facilities on BPA's transmission system, and on the transmission systems of any third parties. The LLISIS will identify any system constraints, additional network facilities, and direct assignment facilities required to provide the requested interconnection. The LLISIS evaluation will include, but not be limited to: (i) facility thermal overloads; (ii) voltage support and control problems; (iii) voltage stability problems; (iv) transient stability problems; and (v) dynamic stability problems. The LLISIS will be based upon the results of previously performed studies, where applicable.

The Point of Interconnection to be studied will be BPA's Usk Substation.

BPA estimates that the LLISIS and associated tasks will require 60 days to complete, following BPA's receipt of this fully executed Agreement and associated payment from Pend Oreille.

Termination: This Agreement shall become effective upon execution by both parties and shall terminate upon full performance by both parties of their respective obligations set forth herein, but in no event shall the term of this Agreement exceed five years from its effective date.

The following document is attached to and becomes a part of this Agreement:

- Financial Terms and Conditions Statement

12. AMOUNT TO BE PAID BY BPA	13. AMOUNT TO BE PAID TO BPA
$	**$30,000 (estimated)**
14. SUBMIT SIGNED AGREEMENT TO **U.S. Department of Energy** **Bonneville Power Administration** **ATTN: Brian Galbraith – TPCC/TPP-4** **P.O. Box 61409** **Vancouver, WA 98666**	15. ACCOUNTING INFORMATION ***(For BPA Use Only)*** 16. SUBMIT INVOICE TO *(Name and Address)*

PARTICIPANT	BPA
17. APPROVED BY *(Signature)*: F. Colin Willenbrock — Digitally signed by F. Colin Willenbrock Date: 2021.08.30 15:34:18 -07'00' — DATE *(MM/DD/YY)*	18. APPROVED BY *(Signature)*: (b)(6) — Adelle L. Harris 2021.08.30 07:32:55 -07'00' — DATE *(MM/DD/YY)*
NAME AND TITLE F. Colin Willenbrock, General Manger	NAME AND TITLE **Transmission Account Executive** **Transmission Sales**

BPA's cost of performing the study at Pend Oreille's expense shall be the actual cost of doing the work specified in this Agreement, plus an overhead rate of 35%, representing the indirect costs of the study office plus the contractual support costs of contract negotiation, billing and accounting functions, and contract management.

Pend Oreille hereby agrees to advance $30,000, the estimated study cost, to BPA upon execution of this Agreement. Payments made to BPA shall be held in an account established for this Agreement.

If BPA needs additional funds to complete the work at any time during performance of the study, BPA may request, in writing, for Pend Oreille to advance such additional funds to BPA for deposit in the account. Pend Oreille shall advance such additional funds within 30 days of BPA's written request, and BPA may temporarily stop work until Pend Oreille supplies the requested funds. If Pend Oreille does not advance such additional funds by the due date or, if at any time before completion of the study Pend Oreille elects to stop work under this Agreement, BPA has the right to cease all work and restore, as a cost to the study at Pend Oreille's expense, government facilities and/or records to their condition prior to the beginning of work under this Agreement.

Within a reasonable time after completion of the study, BPA shall make a full accounting to Pend Oreille showing the actual costs charged against the account. BPA shall either remit any unexpended balance in the account to Pend Oreille or bill for any costs in excess of the deposits in the account. Pend Oreille shall pay any excess costs within 30 days of the invoice date (due date).

Payments not received by the due date will accrue interest on the amount due beginning the first calendar day after the due date to the date paid, at an annual interest rate equal to the higher of i) the prime rate (as reported in the Wall Street Journal in the first issue published during the month in which payment by Pend Oreille is due) plus 4 percent; or ii) such prime rate multiplied by 1.5.

From: Normandeau,Mike (BPA) - PSE-RONAN

Sent: Wed Sep 01 14:12:28 2021

To: Patton,Kathryn B (BPA) - PSS-SEATTLE; Babaidhan,Sami A (BPA) - PSSE-MEAD-GOB; Harris,Adelle L (TFE)(BPA) - TSES-TPP-2; Lacambra,Jared M (BPA) - TPCF-MEAD-GOB; April Owen; Moore,Lisa A (BPA) - PSSE-MEAD-GOB

Cc: Diana Jackson; Tyler Whitney

Subject: RE: Touch Base with Pend Oreille PUD

Importance: Normal

Attachments: FY2022_NetRequirement_PEND_OREILLE_Draft at different NLSL loads_210830.xlsx

Here are the three scenarios that we worked through this week.

Thanks
Mike

-----Original Appointment-----
From: Normandeau,Mike (BPA) - PSE-RONAN
Sent: Monday, August 30, 2021 2:10 PM
To: Normandeau,Mike (BPA) - PSE-RONAN; Patton,Kathryn B (BPA) - PSS-SEATTLE; Babaidhan,Sami A (BPA) - PSSE-MEAD-GOB; Harris,Adelle L (TFE)(BPA) - TSES-TPP-2; Lacambra,Jared M (BPA) - TPCF-MEAD-GOB; April Owen; Moore,Lisa A (BPA) - PSSE-MEAD-GOB
Cc: Diana Jackson; Tyler Whitney
Subject: Touch Base with Pend Oreille PUD
When: Wednesday, September 1, 2021 3:00 PM-4:00 PM (UTC-07:00) Mountain Time (US & Canada).
Where: 503-230-4000 ID:(b)(6)

FY2022 Annual Net Requirement Calculations and Block Amounts

Prepared by BPA, July 28, 2021

Customer Name	**PEND OREILLE PUD**
BES Number	10306
Fiscal Year	2022
Hours	8,760

Step 1: Above-RHWM Load Calculation

(in annual aMW)

TRL Forecast 1/	116.349
NLSL Resources 2/	82.401
Existing Resources 3/	26.052
Gross Requirements 4/	7.896
RHWM 5/	24.581
Headroom 6/	16.685

Notes:
1/ TRL Forecast submitted by customer and approved by BPA (or BPA forecast if customer submitted forecast deemed not reasonable.)
2/ If NLSL see page 3 for additional calculations.
3/ Existing Resources are from Exhibit A and do not include resources serving NLSLs. Existing Resources can be removed in the second year of a Rate Period. See page 3 for removal of Existing Resource calculations.
4/ Gross Requirements is a preliminary Net Requirement calculation (preliminary since New Resources to serve Above-RHWM Load have not yet been added.)
5/ RHWM is from RHWM Process Outputs spreadsheet published on September 28, 2012, with updates for Provisional HWM if necessary.
6/ Headroom, if RHWM is greater than Gross Req, Above-RHWM Load, if RHWM is less than Gross Req.

Step 2: Annual Net Requirement Calcul

(in annual aMW)

Gross Requirements 7/
New Resources 8/
Net Requirements (NR) 9/

Tier 2 Block Amounts 10/

Notes:
7/ Gross Requirements from Step 1.
8/ New Resources equal Above-RHWM Load Amounts. If customer has New Specified Re T2 Block Amounts that sum to an amount gr the customer's Above-RHWM Load, then the to determine the order of resource removal/ per section 10 of the body of the Slice/Block
9/ Net Requirements equals Gross Requirem less New Resources.
10/ T2 Amounts based on customer's electio September 30, 2011 Notice Deadline. If T2 Amounts, then amounts go into section T2 Amounts plus T1 Amounts equal Net Requ

Monthly Net Requirement Calculations (with Block Amounts)

Prepared by BPA, July 28, 2021

	October	November	December
Hours	744	721	744

Step 4: Monthly Tier 1 Block Amount Calculations

Monthly Block Shaping Factors	0.034	0.149	0.135
Monthly T1 Block Amounts (MWh)	2,352	10,306	9,337
Monthly T2 Block Amounts (MWh)	0	0	0

13/ Exhibit C, Section 1.2.1.4 states that monthly Tier 1 Block amo Shaping Factors are in Exhibit C, Section 1.2.13

Diurnal Shaping Factors			
Monthly Block HLH Shaping Factors	N/A	N/A	N/A
Monthly Block LLH Shaping Factors	N/A	N/A	N/A

14/ Diurnal Shaping Factors per Exhibit C, Section 1.2.2.4 if custom

Total - T1 Block Amounts (MW/hr)	3.0	14.0	13.0
HLH - T1 Block Amounts (MW/hr)	3.0	14.0	13.0
LLH - T1 Block Amounts (MW/hr)	3.0	14.0	13.0

15/ Shaped within-month Block Amounts arre megawatt per hour and rounded to a whole number. Flat within-month Block Amounts rounded to a whole number. The diurnal amounts go into section 1

Tier 1 and Tier 2 Block Amounts (MWh)	2,232	10,094	9,672

Step 5: Net Requirement Calculations (and Unspecified Resources Amounts)

TRL Forecast Energy (MWh)	22,160	30,234	37,197
TRL Forecast Peak (MW)	132.6	149.7	157.1
NLSL Resources (MWh)	0	0	0
Existing Resources (MWh)	72,838	52,813	68,195
Monthly Gross Requirements (MWh)	-50,678	-22,579	-30,998

16/ TRL Forecast submitted by customer and approved by BPA (or I Existing Resources from Exhibit A. Monthly Gross Requirements ec

New Specified Resources (MWh)	0	0	0
New Specified Resources (aMW)	0.000	0.000	0.000
Unspecified Resource Amts (MWh)	0	0	0
Unspecified Resource Amts (aMW)	0.000	0.000	0.000

17/ New Specified Resouces can be added to serve Above-RHWM then customer may do so but the amounts will be reduced to matc

Net Requirement Forecast (MWh)	(50,678)	(22,579)	(30,998)

18/ Net Requirements equals TRL less NLSLs, Existing Resources, N

NLSL Calculations (if applicable)

Prepared by BPA, July 28, 2021

	October	November	December
NLSL Forecast (MWh)	0	0	0
Resources Serving an NLSL (MWh)	42,751	41,372	42,751
Change to NLSL Resources (MWh)	-42,751	-41,372	-42,751
Updated Resources Serving NLSL (MWh)	0	0	0

18/ Original resource amounts from Exhibit A. Update NLSL resou

Change to Existing Resources (MWh)	42,751	41,372	46,092
Change to Existing Resources (aMW)	57.461	57.381	61.952
Updated Total Existing Resources (MWh)	72,838	52,813	68,195
Updated Total Existing Resources (aMW)	97.901	73.250	91.660

19/ If customer has a single resource split amongst NLSL and non-N

Removal of Existing Resources in Second Year of Rate Period (if applicable)

Prepared by BPA, July 28, 2021

0 1st Year = 0, Second Year = 1

[redacted]

29/ Existing Resource Removal for Subsequent Fiscal Years of Each Rate Period (section 10.5 of the Slice/Block Contracts) is appli
that is less than the preliminary Net Requirement in the first year of a rate period. Preliminary Net Requirement means BPA's for

Customer Specific Data for Fiscal Year		2021	2021	2021
Prepared by BPA, July 28, 2021		10	11	12
RHWM	24.581	416	400	416
		328	321	328
BES Number	10306			
T2 Block Amounts	0			
TRL Forecast - Energy (MWh)		22,160	30,234	37,197
TRL Forecast - Peak (MW)		132.585	149.663	157.084
NLSL Forecast		0	0	0
Existing		30,087	11,441	22,103
New		0	0	0
NLSL		42,751	41,372	42,751
Block Shaping Factors		0.034	0.149	0.135
HLH Shaping Factors		0.559	0.555	0.559
LLH Shaping Factors		0.419	0.445	0.462
[redacted]				
Existing Resource Removal Shape		0.119	0.039	0.084
New Resource Removal Shape		0.000	0.000	0.000

Customer Charges and Load Shaping Charges
Prepared by BPA, July 28, 2021

	October	November	December
HLH by Month	416	400	416
LLH by Month	328	321	328
RHWM T1 System Capability HLH (MWh)	2,920,790	3,537,945	3,223,873
RHWM T1 System Capability LLH (MWh)	1,633,134	2,227,488	2,419,335

BP-22 Final Proposal Rates			
Composite Rate (TOCA) ($$/%)	$1,998,417	$1,998,417	$1,998,417
Non-Slice Rate ($$/%)	($329,943)	($329,943)	($329,943)
Slice Rate ($$/%)	$0	$0	$0
Load Shaping - HLH ($$/MWh)	$29.92	$31.71	$38.76
Load Shaping - LLH ($$/MWh)	$28.27	$29.14	$32.05
Financial Reserves Policy Surcharge	$0.00	$0.00	$0.00
Financial Reserves Policy Amount	**$0.0**	$-Millions	
Financial Reserves Policy Surcharge	$0.00		
FY2022 Billing Determinants			
TOCA %	0.11721%	0.11721%	0.11721%
Non-Slice TOCA %	0.11721%	0.11721%	0.11721%
Load Shaping - HLH (MWh)	-2,175	1,453	1,629
Load Shaping - LLH (MWh)	-930	1,883	1,428
FY2022 Tier 1 Power Charges without Low Density Discounts or Irrigation Rate Discounts			

Composite Charge	$234,234	$234,234	$234,234
Non-Slice Charge	($38,673)	($38,673)	($38,673)
Load Shaping - HLH	($65,090)	$46,080	$63,152
Load Shaping - LLH	($26,297)	$54,875	$45,777
Financial Reserves Policy Surcharge	$0	$0	$0
Total	$104,174	$296,516	$304,490

Steps in calculating Load Shaping Billing Determinants			
System Shaped Load HLH (MWh)	3,423	4,147	3,779
System Shaped Load LLH (MWh)	1,914	2,611	2,836
Actual Tier 1 Load HLH (MWh)	1,248	5,600	5,408
Actual Tier 1 Load LLH (MWh)	984	4,494	4,264

ation	Step 3: Critical Slice & Block Amounts (with TOCAs) *(in annual aMW)*	
7.896	Tier 2 Block Amounts	0.000
0.000	Tier 1 Block Amounts 11/	7.896
7.896	Net Requirements	7.896
0.000	TOCAs 12/	
	Sum of RHWM	6736.361
less T2	Non-Slice TOCA	0.11721%
sources and	TOCA	0.11721%
eater than		
customer needs	Notes:	
T2 remarketing	11/ Tier 1 Block Amounts equal Net Requirement less Tier 2 Amounts.	
Contract.	Annual Tier 1 Block Amounts (in aMW) go into section 1.1 of Exhibit C.	
nent Amounts	12/ TOCA equals minimum of Net Requirement or RHWM,	
	divided by the Sum of RHWM. Sum of RHWM in cell J18.	
n made by the	Non-Slice TOCA equals TOCA.	
2.5 of Exhibit C.		
uirements.		

January	February	March	April	May	June
744	672	743	720	744	720
0.190	0.168	0.159	0.010	0.000	0.000
13,141	11,620	10,997	692	0	0
0	0	0	0	0	0

unts in MWh are equal to the Monthly Shaping Factors * Annual Tier 1 Block Amounts in aMW (see Step 3) * Hours in Fiscal Year

N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A

er elected Tier 1 Block within-month shaped to their Net Requirement. Not applicable to customers who elected flat Tier 1 block within

18.0	17.0	15.0	1.0	0.0	0.0
18.0	17.0	15.0	1.0	0.0	0.0
18.0	17.0	15.0	1.0	0.0	0.0

amounts equal to the monthly MWh amounts calculated per 1.2.14 of Exhibit C multiplied by the diurnal shaping factor, divided by the
are megawatt per hour amounts equal to the monthly MWh amounts calculated per 1.2.14 of Exhibit C divided by the hours in the mc
1.3 of Exhibit C. Due to rounding the total megawatt-hours established in cell O55 will be different than the megawatt-hours calculatec

13,392	11,424	11,145	720	0	0

99,093	86,780	91,146	102,382	101,336	96,861
200.4	190.8	183.8	175.8	171.9	159.6
63,240	57,120	63,155	79,200	81,840	79,200
3,073	2,574	0	3,802	8,002	6,729
32,780	27,086	27,991	19,380	11,494	10,932

BPA forecast if customer forecast not approved.) TRL Forecast (energy and peak) goes into section 1.1 of Exhibit A. If NLSL see page 3 f
juals TRL less NLSLs and Exisiting Resources. Need to add New Resources if customer has Above-RHWM Load before calculating Net Re

0	0	0	0	0	0
0.000	0.000	0.000	0.000	0.000	0.000
0	0	0	0	0	0
0.000	0.000	0.000	0.000	0.000	0.000

Load. If customer must dedicate New Specified Resources (ie Hydro Resources) and does not have enough (or any) Above-RHWM Loac
h the Above-RHWM Load. If New Specified Resources were not added to serve Above-RHWM Load, then Unspecified Resource Amour

32,780	27,086	27,991	19,380	11,494	10,932

ew Resources (Specified and Unspecified), and plus T2 Amounts. Net Requirements goes into section 1.2 of Exhibit A.

Revised: No Oct-Dec Load, Jan-Sep Mill on full, Crypto starts in April with full ramp

January	February	March	April	May	June
63,240	57,120	63,155	79,200	81,840	79,200
42,751	38,614	42,751	41,372	42,751	41,372
20,489	18,506	20,404	37,828	39,089	37,828
63,240	57,120	63,155	79,200	81,840	79,200

rces in Exhibit A to match NLSL forecast.

-8,158	-4,344	-20,404	-29,566	-34,850	-31,355
-10.965	-6.464	-27.462	-41.064	-46.841	-43.549
3,073	2,574	0	3,802	8,002	6,729
4.130	3.830	0.000	5.281	10.755	9.346

NLSL load, then balance the single resource amounts to match the NLSL forecast keeping the total dedicated amounts the same.

[redacted]

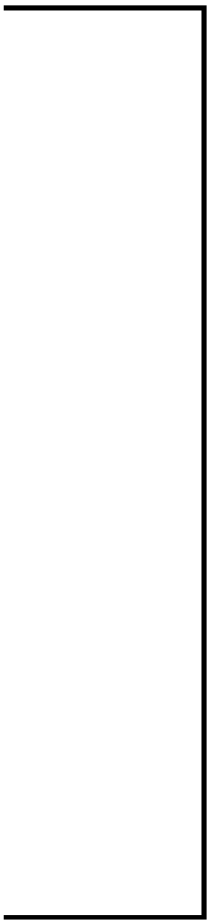
[redacted]

cable for customers that have Existing Resources and have a Preliminary Net Requirement in the second year of a Rate Period
ecast of Customer's Net Requirement for each Fiscal Year prior to the removal of any resources in accordance with section 10.

2022	2022	2022	2022	2022	2022
1	2	3	4	5	6
400	384	432	416	400	416
344	288	311	304	344	304
99,093	86,780	91,146	102,382	101,336	96,861
200.391	190.756	183.772	175.781	171.924	159.600
63,240	57,120	63,155	79,200	81,840	79,200
11,231	6,918	7,040	33,368	42,852	38,084
0	0	0	0	0	0
42,751	38,614	42,751	41,372	42,751	41,372
0.190	0.168	0.159	0.010	0.000	0.000
0.538	0.571	0.581	0.578	0.538	0.578
0.441	0.425	0.440	0.422	0.462	0.422
0.037	0.020	0.019	0.133	0.173	0.154
0.000	0.000	0.000	0.000	0.000	0.000

January	February	March	April	May	June
400	384	432	416	400	416
344	288	311	304	344	304
2,651,580	2,346,690	2,961,839	2,307,314	3,495,710	3,952,933
2,009,470	1,693,144	1,860,906	1,436,906	1,691,935	1,590,174
$1,998,417	$1,998,417	$1,998,417	$1,998,417	$1,998,417	$1,998,417
($329,943)	($329,943)	($329,943)	($329,943)	($329,943)	($329,943)
$0	$0	$0	$0	$0	$0
$34.29	$34.79	$27.57	$20.71	$16.28	$17.15
$25.85	$28.29	$28.44	$25.66	$16.30	$10.62
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
0.11721%	0.11721%	0.11721%	0.11721%	0.11721%	0.11721%
0.11721%	0.11721%	0.11721%	0.11721%	0.11721%	0.11721%
4,092	3,777	3,008	-2,288	-4,097	-4,633
3,837	2,911	2,484	-1,380	-1,983	-1,864

$234,234	$234,234	$234,234	$234,234	$234,234	$234,234
($38,673)	($38,673)	($38,673)	($38,673)	($38,673)	($38,673)
$140,318	$131,417	$82,942	($47,393)	($66,704)	($79,460)
$99,179	$82,365	$70,640	($35,416)	($32,325)	($19,794)
$0	$0	$0	$0	$0	$0
$435,058	$409,343	$349,143	$112,752	$96,532	$96,307
3,108	2,751	3,472	2,704	4,097	4,633
2,355	1,985	2,181	1,684	1,983	1,864
7,200	6,528	6,480	416	0	0
6,192	4,896	4,665	304	0	0



July	August	September	ANNUAL	*aMW*
744	744	720	8,760	
0.038	0.039	0.078	1.000	
2,628	2,697	5,395	69,166	*7.896*
0	0	0	0	*0.000*
N/A	N/A	N/A		
N/A	N/A	N/A		

ı-month shape.

4.0	4.0	7.0	69,671	*7.953*
4.0	4.0	7.0		
4.0	4.0	7.0		

hours in the month,
nth,
l in cell O50.

2,976	2,976	5,040	69,671	*7.953*

118,484	118,223	115,319	1,019,214	*116.349*
161.8	156.7	163.8	N/A	*N/A*
100,440	100,440	97,200	721,835	*82.401*
3,668	3,477	3,046	228,217	*26.052*
14,376	14,306	15,073	69,162	*7.896*

or additional calculations.
quirements.

0	0	0	0	*0.000*
0.000	0.000	0.000		
0	0	0	0	*0.000*
0.000	0.000	0.000		

l,
ıts will be added.

14,376	14,306	15,073	69,162	*7.896*

July	August	September	ANNUAL	*aMW*
100,440	100,440	97,200	721,835	*82.401*
42,751	42,751	41,372	503,359	*57.461*
57,689	57,689	55,828	218,476	*24.940*
100,440	100,440	97,200	721,835	*82.401*
-19,615	-18,575	-11,293	-47,945	*-5.473*
-26.364	-24.966	-15.685		
3,668	3,477	3,046	228,217	*26.052*
4.930	4.673	4.231		

[redacted]

2022	2022	2022		
7	8	9	Annual	aMW
400	432	400		
344	312	320		
118,484	118,223	115,319	1,019,214	*116.349*
161.786	156.652	163.785		
100,440	100,440	97,200	721,835	*82.401*
23,283	22,052	14,339	262,798	*30.000*
0	0	0	0	*0.000*
42,751	42,751	41,372	503,359	*57.461*
0.038	0.039	0.078	1.000	
0.538	0.581	0.556		
0.441	0.441	0.444		
0.089	0.084	0.051	1.000	
0.000	0.000	0.000		

July	August	September	ANNUAL	*aMW*
400	432	400	4912	
344	312	320	3848	
3,505,339	3,425,259	2,999,685	37,328,957	7,599.543
1,757,589	1,660,955	1,700,508	21,681,545	5,634.497

$1,998,417	$1,998,417	$1,998,417
($329,943)	($329,943)	($329,943)
$0	$0	$0
$36.83	$35.87	$28.15
$21.36	$26.85	$28.95
$0.00	$0.00	$0.00
0.11721%	0.11721%	0.11721%
0.11721%	0.11721%	0.11721%
-2,509	-2,287	-716
-684	-699	247

$234,234	$234,234	$234,234	$2,810,808	
($38,673)	($38,673)	($38,673)	($464,076)	
($92,392)	($82,026)	($20,153)	$10,691	
($14,612)	($18,763)	$7,146	$212,775	
$0	$0	$0	$0	
$88,557	$94,772	$182,554	$2,570,198	
4,109	4,015	3,516	43,753	9
2,060	1,947	1,993	25,413	7
1,600	1,728	2,800	39,008	8
1,376	1,248	2,240	30,663	8

6736

FY2022 Annual Net Requirement Calculations and Block Amounts

Prepared by BPA, July 28, 2021

Customer Name	PEND OREILLE PUD
BES Number	10306
Fiscal Year	2022
Hours	8,760

Step 1: Above-RHWM Load Calculation

(in annual aMW)

TRL Forecast 1/	105.281
NLSL Resources 2/	71.333
Existing Resources 3/	27.594
Gross Requirements 4/	6.354
RHWM 5/	24.581
Headroom 6/	18.227

Notes:
1/ TRL Forecast submitted by customer and approved by BPA (or BPA forecast if customer submitted forecast deemed not reasonable.)
2/ If NLSL see page 3 for additional calculations.
3/ Existing Resources are from Exhibit A and do not include resources serving NLSLs. Existing Resources can be removed in the second year of a Rate Period. See page 3 for removal of Existing Resource calculations.
4/ Gross Requirements is a preliminary Net Requirement calculation (preliminary since New Resources to serve Above-RHWM Load have not yet been added.)
5/ RHWM is from RHWM Process Outputs spreadsheet published on September 28, 2012, with updates for Provisional HWM if necessary.
6/ Headroom, if RHWM is greater than Gross Req, Above-RHWM Load, if RHWM is less than Gross Req.

Step 2: Annual Net Requirement Calcul

(in annual aMW)

Gross Requirements 7/
New Resources 8/
Net Requirements (NR) 9/

Tier 2 Block Amounts 10/

Notes:
7/ Gross Requirements from Step 1.
8/ New Resources equal Above-RHWM Load Amounts. If customer has New Specified Re T2 Block Amounts that sum to an amount gr the customer's Above-RHWM Load, then the to determine the order of resource removal/ per section 10 of the body of the Slice/Block
9/ Net Requirements equals Gross Requirem less New Resources.
10/ T2 Amounts based on customer's electio September 30, 2011 Notice Deadline. If T2 Amounts, then amounts go into section T2 Amounts plus T1 Amounts equal Net Requ

Monthly Net Requirement Calculations (with Block Amounts)

Prepared by BPA, July 28, 2021

	October	November	December
Hours	744	721	744

Step 4: Monthly Tier 1 Block Amount Calculations

Monthly Block Shaping Factors	0.034	0.149	0.135
Monthly T1 Block Amounts (MWh)	1,892	8,293	7,514
Monthly T2 Block Amounts (MWh)	0	0	0

13/ Exhibit C, Section 1.2.1.4 states that monthly Tier 1 Block amo Shaping Factors are in Exhibit C, Section 1.2.13

Diurnal Shaping Factors			
Monthly Block HLH Shaping Factors	N/A	N/A	N/A
Monthly Block LLH Shaping Factors	N/A	N/A	N/A

14/ Diurnal Shaping Factors per Exhibit C, Section 1.2.2.4 if custom

Total - T1 Block Amounts (MW/hr)	3.0	12.0	10.0
HLH - T1 Block Amounts (MW/hr)	3.0	12.0	10.0
LLH - T1 Block Amounts (MW/hr)	3.0	12.0	10.0

15/ Shaped within-month Block Amounts arre megawatt per hour and rounded to a whole number. Flat within-month Block Amounts rounded to a whole number. The diurnal amounts go into section 1

Tier 1 and Tier 2 Block Amounts (MWh)	2,232	8,652	7,440

Step 5: Net Requirement Calculations (and Unspecified Resources Amounts)

TRL Forecast Energy (MWh)	22,160	44,654	52,077
TRL Forecast Peak (MW)	132.6	149.7	157.1
NLSL Resources (MWh)	0	14,420	14,880
Existing Resources (MWh)	72,838	38,393	53,315
Monthly Gross Requirements (MWh)	-50,678	-8,159	-16,118

16/ TRL Forecast submitted by customer and approved by BPA (or I Existing Resources from Exhibit A. Monthly Gross Requirements ec

New Specified Resources (MWh)	0	0	0
New Specified Resources (aMW)	0.000	0.000	0.000
Unspecified Resource Amts (MWh)	0	0	0
Unspecified Resource Amts (aMW)	0.000	0.000	0.000

17/ New Specified Resouces can be added to serve Above-RHWM then customer may do so but the amounts will be reduced to matc

Net Requirement Forecast (MWh)	(50,678)	(8,159)	(16,118)

18/ Net Requirements equals TRL less NLSLs, Existing Resources, N

NLSL Calculations (if applicable)

Prepared by BPA, July 28, 2021

	October	November	December
NLSL Forecast (MWh)	0	14,420	14,880
Resources Serving an NLSL (MWh)	42,751	41,372	42,751
Change to NLSL Resources (MWh)	-42,751	-26,952	-27,871
Updated Resources Serving NLSL (MWh)	0	14,420	14,880

18/ Original resource amounts from Exhibit A. Update NLSL resou

Change to Existing Resources (MWh)	42,751	26,952	31,212
Change to Existing Resources (aMW)	57.461	37.381	41.952
Updated Total Existing Resources (MWh)	72,838	38,393	53,315
Updated Total Existing Resources (aMW)	97.901	53.250	71.660

19/ If customer has a single resource split amongst NLSL and non-N

Removal of Existing Resources in Second Year of Rate Period (if applicable)

Prepared by BPA, July 28, 2021 — 0 1st Year = 0, Second Year = 1

[redacted]

[redacted]

29/ Existing Resource Removal for Subsequent Fiscal Years of Each Rate Period (section 10.5 of the Slice/Block Contracts) is appli
that is less than the preliminary Net Requirement in the first year of a rate period. Preliminary Net Requirement means BPA's for

Customer Specific Data for Fiscal Year		2021	2021	2021
Prepared by BPA, July 28, 2021		10	11	12
RHWM	24.581	416	400	416
		328	321	328
BES Number	10306			
T2 Block Amounts	0			
TRL Forecast - Energy (MWh)		22,160	44,654	52,077
TRL Forecast - Peak (MW)		132.585	149.663	157.084
NLSL Forecast		0	14,420	14,880
Existing		30,087	11,441	22,103
New		0	0	0
NLSL		42,751	41,372	42,751
Block Shaping Factors		0.034	0.149	0.135
HLH Shaping Factors		0.559	0.555	0.559
LLH Shaping Factors		0.419	0.445	0.462
[redacted]				
Existing Resource Removal Shape		0.119	0.039	0.084
New Resource Removal Shape		0.000	0.000	0.000

Customer Charges and Load Shaping Charges
Prepared by BPA, July 28, 2021

	October	November	December
HLH by Month	416	400	416
LLH by Month	328	321	328
RHWM T1 System Capability HLH (MWh)	2,920,790	3,537,945	3,223,873
RHWM T1 System Capability LLH (MWh)	1,633,134	2,227,488	2,419,335

BP-22 Final Proposal Rates			
Composite Rate (TOCA) ($$/%)	$1,998,417	$1,998,417	$1,998,417
Non-Slice Rate ($$/%)	($329,943)	($329,943)	($329,943)
Slice Rate ($$/%)	$0	$0	$0
Load Shaping - HLH ($$/MWh)	$29.92	$31.71	$38.76
Load Shaping - LLH ($$/MWh)	$28.27	$29.14	$32.05
Financial Reserves Policy Surcharge	$0.00	$0.00	$0.00
Financial Reserves Policy Amount	**$0.0**	$-Millions	
Financial Reserves Policy Surcharge	$0.00		
FY2022 Billing Determinants			
TOCA %	0.09432%	0.09432%	0.09432%
Non-Slice TOCA %	0.09432%	0.09432%	0.09432%
Load Shaping - HLH (MWh)	-1,507	1,463	1,119
Load Shaping - LLH (MWh)	-556	1,751	998
FY2022 Tier 1 Power Charges without Low Density Discounts or Irrigation Rate Discounts			

Composite Charge	$188,491	$188,491	$188,491
Non-Slice Charge	($31,120)	($31,120)	($31,120)
Load Shaping - HLH	($45,086)	$46,392	$43,382
Load Shaping - LLH	($15,729)	$51,025	$31,989
Financial Reserves Policy Surcharge	$0	$0	$0
Total	$96,556	$254,788	$232,742

Steps in calculating Load Shaping Billing Determinants			
System Shaped Load HLH (MWh)	2,755	3,337	3,041
System Shaped Load LLH (MWh)	1,540	2,101	2,282
Actual Tier 1 Load HLH (MWh)	1,248	4,800	4,160
Actual Tier 1 Load LLH (MWh)	984	3,852	3,280

ation		Step 3: Critical Slice & Block Amounts (with TOCAs)	
		(in annual aMW)	
6.354		Tier 2 Block Amounts	0.000
0.000		Tier 1 Block Amounts 11/	6.354
6.354		Net Requirements	6.354
0.000		TOCAs 12/	
		Sum of RHWM	6736.361
less T2		Non-Slice TOCA	0.09432%
sources and		TOCA	0.09432%
eater than			
customer needs		Notes:	
T2 remarketing		11/ Tier 1 Block Amounts equal Net Requirement less Tier 2 Amounts.	
Contract.		Annual Tier 1 Block Amounts (in aMW) go into section 1.1 of Exhibit C.	
ent Amounts		12/ TOCA equals minimum of Net Requirement or RHWM,	
n made by the		divided by the Sum of RHWM. Sum of RHWM in cell J18.	
		Non-Slice TOCA equals TOCA.	
2.5 of Exhibit C.			
uirements.			

January	February	March	April	May	June
744	672	743	720	744	720
0.190	0.168	0.159	0.010	0.000	0.000
10,575	9,351	8,850	557	0	0
0	0	0	0	0	0

unts in MWh are equal to the Monthly Shaping Factors * Annual Tier 1 Block Amounts in aMW (see Step 3) * Hours in Fiscal Year

N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A

er elected Tier 1 Block within-month shaped to their Net Requirement. Not applicable to customers who elected flat Tier 1 block within

14.0	14.0	12.0	1.0	0.0	0.0
14.0	14.0	12.0	1.0	0.0	0.0
14.0	14.0	12.0	1.0	0.0	0.0

amounts equal to the monthly MWh amounts calculated per 1.2.14 of Exhibit C multiplied by the diurnal shaping factor, divided by the
are megawatt per hour amounts equal to the monthly MWh amounts calculated per 1.2.14 of Exhibit C divided by the hours in the mc
1.3 of Exhibit C. Due to rounding the total megawatt-hours established in cell O55 will be different than the megawatt-hours calculatec

10,416	9,408	8,916	720	0	0

50,733	96,860	102,291	95,182	93,896	89,661
200.4	190.8	183.8	175.8	171.9	159.6
14,880	67,200	74,300	72,000	74,400	72,000
39,102	2,574	2,846	3,802	11,203	7,456
-3,249	27,086	25,145	19,380	8,293	10,205

BPA forecast if customer forecast not approved.) TRL Forecast (energy and peak) goes into section 1.1 of Exhibit A. If NLSL see page 3 f
uals TRL less NLSLs and Exisiting Resources. Need to add New Resources if customer has Above-RHWM Load before calculating Net Re

0	0	0	0	0	0
0.000	0.000	0.000	0.000	0.000	0.000
0	0	0	0	0	0
0.000	0.000	0.000	0.000	0.000	0.000

Load. If customer must dedicate New Specified Resources (ie Hydro Resources) and does not have enough (or any) Above-RHWM Loac
h the Above-RHWM Load. If New Specified Resources were not added to serve Above-RHWM Load, then Unspecified Resource Amour

(3,249)	27,086	25,145	19,380	8,293	10,205

ew Resources (Specified and Unspecified), and plus T2 Amounts. Net Requirements goes into section 1.2 of Exhibit A.

Revised: No Oct Load, Mill starts in Feb, Crypto flat at 20 MW starting Nov

January	February	March	April	May	June
14,880	67,200	74,300	72,000	74,400	72,000
42,751	38,614	42,751	41,372	42,751	41,372
-27,871	28,586	31,549	30,628	31,649	30,628
14,880	67,200	74,300	72,000	74,400	72,000

ces in Exhibit A to match NLSL forecast.

27,871	-4,344	-4,194	-29,566	-31,649	-30,628
37.461	-6.464	-5.645	-41.064	-42.539	-42.539
39,102	2,574	2,846	3,802	11,203	7,456
52.556	3.830	3.830	5.281	15.058	10.356

NLSL load, then balance the single resource amounts to match the NLSL forecast keeping the total dedicated amounts the same.

[redacted]

cable for customers that have Existing Resources and have a Preliminary Net Requirement in the second year of a Rate Period
ecast of Customer's Net Requirement for each Fiscal Year prior to the removal of any resources in accordance with section 10.

2022	2022	2022	2022	2022	2022
1	2	3	4	5	6
400	384	432	416	400	416
344	288	311	304	344	304
50,733	96,860	102,291	95,182	93,896	89,661
200.391	190.756	183.772	175.781	171.924	159.600
14,880	67,200	74,300	72,000	74,400	72,000
11,231	6,918	7,040	33,368	42,852	38,084
0	0	0	0	0	0
42,751	38,614	42,751	41,372	42,751	41,372
0.190	0.168	0.159	0.010	0.000	0.000
0.538	0.571	0.581	0.578	0.538	0.578
0.441	0.425	0.440	0.422	0.462	0.422
0.037	0.020	0.019	0.133	0.173	0.154
0.000	0.000	0.000	0.000	0.000	0.000

January	February	March	April	May	June
400	384	432	416	400	416
344	288	311	304	344	304
2,651,580	2,346,690	2,961,839	2,307,314	3,495,710	3,952,933
2,009,470	1,693,144	1,860,906	1,436,906	1,691,935	1,590,174
$1,998,417	$1,998,417	$1,998,417	$1,998,417	$1,998,417	$1,998,417
($329,943)	($329,943)	($329,943)	($329,943)	($329,943)	($329,943)
$0	$0	$0	$0	$0	$0
$34.29	$34.79	$27.57	$20.71	$16.28	$17.15
$25.85	$28.29	$28.44	$25.66	$16.30	$10.62
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
0.09432%	0.09432%	0.09432%	0.09432%	0.09432%	0.09432%
0.09432%	0.09432%	0.09432%	0.09432%	0.09432%	0.09432%
3,099	3,163	2,390	-1,760	-3,297	-3,728
2,921	2,435	1,977	-1,051	-1,596	-1,500

$188,491	$188,491	$188,491	$188,491	$188,491	$188,491
($31,120)	($31,120)	($31,120)	($31,120)	($31,120)	($31,120)
$106,266	$110,027	$65,903	($36,455)	($53,678)	($63,942)
$75,499	$68,887	$56,220	($26,976)	($26,012)	($15,928)
$0	$0	$0	$0	$0	$0
$339,136	$336,285	$279,494	$93,940	$77,681	$77,501
2,501	2,213	2,794	2,176	3,297	3,728
1,895	1,597	1,755	1,355	1,596	1,500
5,600	5,376	5,184	416	0	0
4,816	4,032	3,732	304	0	0

July	August	September	ANNUAL	*aMW*
744	744	720	8,760	
0.038	0.039	0.078	1.000	
2,115	2,171	4,341	55,658	*6.354*
0	0	0	0	*0.000*
N/A	N/A	N/A		
N/A	N/A	N/A		

ı-month shape.

3.0	3.0	6.0	56,568	*6.458*
3.0	3.0	6.0		
3.0	3.0	6.0		

hours in the month,
nth,
l in cell O50.

2,232	2,232	4,320	56,568	*6.458*

92,444	92,183	90,119	922,259	*105.281*
161.8	156.7	163.8	N/A	*N/A*
74,400	74,400	72,000	624,880	*71.333*
3,668	3,477	3,046	241,720	*27.594*
14,376	14,306	15,073	55,659	*6.354*

or additional calculations.
quirements.

0	0	0	0	*0.000*
0.000	0.000	0.000		
0	0	0	0	*0.000*
0.000	0.000	0.000		

l,
ıts will be added.

14,376	14,306	15,073	55,659	*6.354*

July	August	September	ANNUAL	*aMW*
74,400	74,400	72,000	624,880	*71.333*
42,751	42,751	41,372	503,359	*57.461*
31,649	31,649	30,628	121,521	*13.872*
74,400	74,400	72,000	624,880	*71.333*
-19,615	-18,575	-11,293	-21,078	*-2.406*
-26.364	-24.966	-15.685		
3,668	3,477	3,046	241,720	*27.594*
4.930	4.673	4.231		

[redacted]

[redacted]

2022	2022	2022		
7	8	9	Annual	aMW
400	432	400		
344	312	320		
92,444	92,183	90,119	922,259	*105.281*
161.786	156.652	163.785		
74,400	74,400	72,000	624,880	*71.333*
23,283	22,052	14,339	262,798	*30.000*
0	0	0	0	*0.000*
42,751	42,751	41,372	503,359	*57.461*
0.038	0.039	0.078	1.000	
0.538	0.581	0.556		
0.441	0.441	0.444		
0.089	0.084	0.051	1.000	
0.000	0.000	0.000		

July	August	September	ANNUAL	*aMW*
400	432	400	4912	
344	312	320	3848	
3,505,339	3,425,259	2,999,685	37,328,957	7,599.543
1,757,589	1,660,955	1,700,508	21,681,545	5,634.497

$1,998,417	$1,998,417	$1,998,417
($329,943)	($329,943)	($329,943)
$0	$0	$0
$36.83	$35.87	$28.15
$21.36	$26.85	$28.95
$0.00	$0.00	$0.00
0.09432%	0.09432%	0.09432%
0.09432%	0.09432%	0.09432%
-2,106	-1,935	-429
-626	-631	316

$188,491	$188,491	$188,491	$2,261,892	
($31,120)	($31,120)	($31,120)	($373,440)	
($77,573)	($69,398)	($12,085)	$13,753	
($13,366)	($16,932)	$9,151	$177,828	
$0	$0	$0	$0	
$66,432	$71,041	$154,437	$2,080,033	
3,306	3,231	2,829	35,209	7
1,658	1,567	1,604	20,450	5
1,200	1,296	2,400	31,680	6
1,032	936	1,920	24,888	6

6736

FY2022 Annual Net Requirement Calculations and Block Amounts

Prepared by BPA, July 28, 2021

Customer Name	PEND OREILLE PUD
BES Number	10306
Fiscal Year	2022
Hours	8,760

Step 1: Above-RHWM Load Calculation

(in annual aMW)

TRL Forecast 1/	145.895
NLSL Resources 2/	111.947
Existing Resources 3/	17.315
Gross Requirements 4/	16.633
RHWM 5/	24.581
Headroom 6/	7.948

Notes:
1/ TRL Forecast submitted by customer and approved by BPA (or BPA forecast if customer submitted forecast deemed not reasonable.)
2/ If NLSL see page 3 for additional calculations.
3/ Existing Resources are from Exhibit A and do not include resources serving NLSLs. Existing Resources can be removed in the second year of a Rate Period. See page 3 for removal of Existing Resource calculations.
4/ Gross Requirements is a preliminary Net Requirement calculation (preliminary since New Resources to serve Above-RHWM Load have not yet been added.)
5/ RHWM is from RHWM Process Outputs spreadsheet published on September 28, 2012, with updates for Provisional HWM if necessary.
6/ Headroom, if RHWM is greater than Gross Req, Above-RHWM Load, if RHWM is less than Gross Req.

Step 2: Annual Net Requirement Calcul

(in annual aMW)

Gross Requirements 7/
New Resources 8/
Net Requirements (NR) 9/

Tier 2 Block Amounts 10/

Notes:
7/ Gross Requirements from Step 1.
8/ New Resources equal Above-RHWM Load Amounts. If customer has New Specified Re T2 Block Amounts that sum to an amount gr the customer's Above-RHWM Load, then the to determine the order of resource removal/ per section 10 of the body of the Slice/Block
9/ Net Requirements equals Gross Requirem less New Resources.
10/ T2 Amounts based on customer's electio September 30, 2011 Notice Deadline. If T2 Amounts, then amounts go into section T2 Amounts plus T1 Amounts equal Net Requ

Monthly Net Requirement Calculations (with Block Amounts)

Prepared by BPA, July 28, 2021

	October	November	December
Hours	744	721	744

Step 4: Monthly Tier 1 Block Amount Calculations

Monthly Block Shaping Factors	0.034	0.149	0.135
Monthly T1 Block Amounts (MWh)	4,954	21,710	19,670
Monthly T2 Block Amounts (MWh)	0	0	0

13/ Exhibit C, Section 1.2.1.4 states that monthly Tier 1 Block amo Shaping Factors are in Exhibit C, Section 1.2.13

Diurnal Shaping Factors			
Monthly Block HLH Shaping Factors	N/A	N/A	N/A
Monthly Block LLH Shaping Factors	N/A	N/A	N/A

14/ Diurnal Shaping Factors per Exhibit C, Section 1.2.2.4 if custom

Total - T1 Block Amounts (MW/hr)	7.0	30.0	26.0
HLH - T1 Block Amounts (MW/hr)	7.0	30.0	26.0
LLH - T1 Block Amounts (MW/hr)	7.0	30.0	26.0

15/ Shaped within-month Block Amounts arre megawatt per hour and rounded to a whole number. Flat within-month Block Amounts rounded to a whole number. The diurnal amounts go into section 1

Tier 1 and Tier 2 Block Amounts (MWh)	5,208	21,630	19,344

Step 5: Net Requirement Calculations (and Unspecified Resources Amounts)

TRL Forecast Energy (MWh)	22,160	44,654	115,317
TRL Forecast Peak (MW)	132.6	149.7	157.1
NLSL Resources (MWh)	0	14,420	78,120
Existing Resources (MWh)	72,838	38,393	3,234
Monthly Gross Requirements (MWh)	-50,678	-8,159	33,963

16/ TRL Forecast submitted by customer and approved by BPA (or I Existing Resources from Exhibit A. Monthly Gross Requirements ec

New Specified Resources (MWh)	0	0	0
New Specified Resources (aMW)	0.000	0.000	0.000
Unspecified Resource Amts (MWh)	0	0	0
Unspecified Resource Amts (aMW)	0.000	0.000	0.000

17/ New Specified Resouces can be added to serve Above-RHWM then customer may do so but the amounts will be reduced to matc

Net Requirement Forecast (MWh)	(50,678)	(8,159)	33,963

18/ Net Requirements equals TRL less NLSLs, Existing Resources, N

NLSL Calculations (if applicable)

Prepared by BPA, July 28, 2021

	October	November	December
NLSL Forecast (MWh)	0	14,420	78,120
Resources Serving an NLSL (MWh)	42,751	41,372	42,751
Change to NLSL Resources (MWh)	-42,751	-26,952	35,369
Updated Resources Serving NLSL (MWh)	0	14,420	78,120

18/ Original resource amounts from Exhibit A. Update NLSL resou

Change to Existing Resources (MWh)	42,751	26,952	-18,869
Change to Existing Resources (aMW)	57.461	37.381	-25.362
Updated Total Existing Resources (MWh)	72,838	38,393	3,234
Updated Total Existing Resources (aMW)	97.901	53.250	4.347

19/ If customer has a single resource split amongst NLSL and non-N

Removal of Existing Resources in Second Year of Rate Period (if applicable)

Prepared by BPA, July 28, 2021

0 1st Year = 0, Second Year = 1

[redacted]

[redacted]

29/ Existing Resource Removal for Subsequent Fiscal Years of Each Rate Period (section 10.5 of the Slice/Block Contracts) is appli
that is less than the preliminary Net Requirement in the first year of a rate period. Preliminary Net Requirement means BPA's for

Customer Specific Data for Fiscal Year		2021	2021	2021
Prepared by BPA, July 28, 2021		10	11	12
RHWM	24.581	416	400	416
		328	321	328
BES Number	10306			
T2 Block Amounts	0			
TRL Forecast - Energy (MWh)		22,160	44,654	115,317
TRL Forecast - Peak (MW)		132.585	149.663	157.084
NLSL Forecast		0	14,420	78,120
Existing		30,087	11,441	22,103
New		0	0	0
NLSL		42,751	41,372	42,751
Block Shaping Factors		0.034	0.149	0.135
HLH Shaping Factors		0.559	0.555	0.559
LLH Shaping Factors		0.419	0.445	0.462
[redacted]				
Existing Resource Removal Shape		0.119	0.039	0.084
New Resource Removal Shape		0.000	0.000	0.000

Customer Charges and Load Shaping Charges
Prepared by BPA, July 28, 2021

	October	November	December
HLH by Month	416	400	416
LLH by Month	328	321	328
RHWM T1 System Capability HLH (MWh)	2,920,790	3,537,945	3,223,873
RHWM T1 System Capability LLH (MWh)	1,633,134	2,227,488	2,419,335

BP-22 Final Proposal Rates			
Composite Rate (TOCA) ($$/%)	$1,998,417	$1,998,417	$1,998,417
Non-Slice Rate ($$/%)	($329,943)	($329,943)	($329,943)
Slice Rate ($$/%)	$0	$0	$0
Load Shaping - HLH ($$/MWh)	$29.92	$31.71	$38.76
Load Shaping - LLH ($$/MWh)	$28.27	$29.14	$32.05
Financial Reserves Policy Surcharge	$0.00	$0.00	$0.00
Financial Reserves Policy Amount	**$0.0**	$-Millions	
Financial Reserves Policy Surcharge	$0.00		
FY2022 Billing Determinants			
TOCA %	0.24691%	0.24691%	0.24691%
Non-Slice TOCA %	0.24691%	0.24691%	0.24691%
Load Shaping - HLH (MWh)	-4,300	3,264	2,856
Load Shaping - LLH (MWh)	-1,736	4,130	2,554
FY2022 Tier 1 Power Charges without Low Density Discounts or Irrigation Rate Discounts			

Composite Charge	$493,429	$493,429	$493,429
Non-Slice Charge	($81,466)	($81,466)	($81,466)
Load Shaping - HLH	($128,648)	$103,516	$110,696
Load Shaping - LLH	($49,087)	$120,351	$81,869
Financial Reserves Policy Surcharge	$0	$0	$0
Total	$234,228	$635,830	$604,528

Steps in calculating Load Shaping Billing Determinants			
System Shaped Load HLH (MWh)	7,212	8,736	7,960
System Shaped Load LLH (MWh)	4,032	5,500	5,974
Actual Tier 1 Load HLH (MWh)	2,912	12,000	10,816
Actual Tier 1 Load LLH (MWh)	2,296	9,630	8,528

ation	Step 3: Critical Slice & Block Amounts (with TOCAs) *(in annual aMW)*	
16.633	Tier 2 Block Amounts	0.000
0.000	Tier 1 Block Amounts 11/	16.633
16.633	Net Requirements	16.633
0.000	TOCAs 12/	
	Sum of RHWM	6736.361
less T2	Non-Slice TOCA	0.24691%
sources and	TOCA	0.24691%
eater than		
customer needs	Notes:	
T2 remarketing	11/ Tier 1 Block Amounts equal Net Requirement less Tier 2 Amounts.	
Contract.	Annual Tier 1 Block Amounts (in aMW) go into section 1.1 of Exhibit C.	
nent Amounts	12/ TOCA equals minimum of Net Requirement or RHWM,	
	divided by the Sum of RHWM. Sum of RHWM in cell J18.	
n made by the	Non-Slice TOCA equals TOCA.	
2.5 of Exhibit C.		
uirements.		

January	February	March	April	May	June
744	672	743	720	744	720
0.190	0.168	0.159	0.010	0.000	0.000
27,684	24,478	23,167	1,457	0	0
0	0	0	0	0	0

unts in MWh are equal to the Monthly Shaping Factors * Annual Tier 1 Block Amounts in aMW (see Step 3) * Hours in Fiscal Year

N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A

er elected Tier 1 Block within-month shaped to their Net Requirement. Not applicable to customers who elected flat Tier 1 block within

37.0	36.0	31.0	2.0	0.0	0.0
37.0	36.0	31.0	2.0	0.0	0.0
37.0	36.0	31.0	2.0	0.0	0.0

amounts equal to the monthly MWh amounts calculated per 1.2.14 of Exhibit C multiplied by the diurnal shaping factor, divided by the
are megawatt per hour amounts equal to the monthly MWh amounts calculated per 1.2.14 of Exhibit C divided by the hours in the mc
1.3 of Exhibit C. Due to rounding the total megawatt-hours established in cell O55 will be different than the megawatt-hours calculatec

27,528	24,192	23,033	1,440	0	0

113,973	100,220	134,983	126,862	126,632	121,341
200.4	190.8	183.8	175.8	171.9	159.6
78,120	70,560	106,992	103,680	107,136	103,680
3,073	2,574	2,846	3,802	8,002	6,729
32,780	27,086	25,145	19,380	11,494	10,932

BPA forecast if customer forecast not approved.) TRL Forecast (energy and peak) goes into section 1.1 of Exhibit A. If NLSL see page 3 f
uals TRL less NLSLs and Exisiting Resources. Need to add New Resources if customer has Above-RHWM Load before calculating Net Re

0	0	0	0	0	0
0.000	0.000	0.000	0.000	0.000	0.000
0	0	0	0	0	0
0.000	0.000	0.000	0.000	0.000	0.000

Load. If customer must dedicate New Specified Resources (ie Hydro Resources) and does not have enough (or any) Above-RHWM Loac
h the Above-RHWM Load. If New Specified Resources were not added to serve Above-RHWM Load, then Unspecified Resource Amour

32,780	27,086	25,145	19,380	11,494	10,932

ew Resources (Specified and Unspecified), and plus T2 Amounts. Net Requirements goes into section 1.2 of Exhibit A.

Revised: No Oct Load, Mill starts in December, Crypto ramp up starting Nov

January	February	March	April	May	June
78,120	70,560	106,992	103,680	107,136	103,680
42,751	38,614	42,751	41,372	42,751	41,372
35,369	31,946	64,241	62,308	64,385	62,308
78,120	70,560	106,992	103,680	107,136	103,680

rces in Exhibit A to match NLSL forecast.

-8,158	-4,344	-4,194	-29,566	-34,850	-31,355
-10.965	-6.464	-5.645	-41.064	-46.841	-43.549
3,073	2,574	2,846	3,802	8,002	6,729
4.130	3.830	3.830	5.281	10.755	9.346

NLSL load, then balance the single resource amounts to match the NLSL forecast keeping the total dedicated amounts the same.

[redacted]

[redacted]

cable for customers that have Existing Resources and have a Preliminary Net Requirement in the second year of a Rate Period
ecast of Customer's Net Requirement for each Fiscal Year prior to the removal of any resources in accordance with section 10.

2022	2022	2022	2022	2022	2022
1	2	3	4	5	6
400	384	432	416	400	416
344	288	311	304	344	304
113,973	100,220	134,983	126,862	126,632	121,341
200.391	190.756	183.772	175.781	171.924	159.600
78,120	70,560	106,992	103,680	107,136	103,680
11,231	6,918	7,040	33,368	42,852	38,084
0	0	0	0	0	0
42,751	38,614	42,751	41,372	42,751	41,372
0.190	0.168	0.159	0.010	0.000	0.000
0.538	0.571	0.581	0.578	0.538	0.578
0.441	0.425	0.440	0.422	0.462	0.422
0.037	0.020	0.019	0.133	0.173	0.154
0.000	0.000	0.000	0.000	0.000	0.000

January	February	March	April	May	June
400	384	432	416	400	416
344	288	311	304	344	304
2,651,580	2,346,690	2,961,839	2,307,314	3,495,710	3,952,933
2,009,470	1,693,144	1,860,906	1,436,906	1,691,935	1,590,174
$1,998,417	$1,998,417	$1,998,417	$1,998,417	$1,998,417	$1,998,417
($329,943)	($329,943)	($329,943)	($329,943)	($329,943)	($329,943)
$0	$0	$0	$0	$0	$0
$34.29	$34.79	$27.57	$20.71	$16.28	$17.15
$25.85	$28.29	$28.44	$25.66	$16.30	$10.62
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
0.24691%	0.24691%	0.24691%	0.24691%	0.24691%	0.24691%
0.24691%	0.24691%	0.24691%	0.24691%	0.24691%	0.24691%
8,253	8,030	6,079	-4,865	-8,631	-9,760
7,766	6,187	5,046	-2,940	-4,178	-3,926

$493,429	$493,429	$493,429	$493,429	$493,429	$493,429
($81,466)	($81,466)	($81,466)	($81,466)	($81,466)	($81,466)
$282,995	$279,356	$167,596	($100,754)	($140,517)	($167,387)
$200,762	$175,043	$143,515	($75,437)	($68,094)	($41,697)
$0	$0	$0	$0	$0	$0
$895,720	$866,362	$723,074	$235,772	$203,352	$202,879
6,547	5,794	7,313	5,697	8,631	9,760
4,962	4,181	4,595	3,548	4,178	3,926
14,800	13,824	13,392	832	0	0
12,728	10,368	9,641	608	0	0

July	August	September	ANNUAL	*aMW*
744	744	720	8,760	
0.038	0.039	0.078	1.000	
5,537	5,682	11,365	145,704	*16.633*
0	0	0	0	*0.000*
N/A	N/A	N/A		
N/A	N/A	N/A		

ı-month shape.

7.0	8.0	16.0	145,055	*16.559*
7.0	8.0	16.0		
7.0	8.0	16.0		

hours in the month,
nth,
l in cell O50.

5,208	5,952	11,520	145,055	*16.559*

125,180	124,919	121,799	1,278,039	*145.895*
161.8	156.7	163.8	N/A	*N/A*
107,136	107,136	103,680	980,660	*111.947*
3,668	3,477	3,046	151,682	*17.315*
14,376	14,306	15,073	145,697	*16.633*

or additional calculations.
quirements.

0	0	0	0	*0.000*
0.000	0.000	0.000		
0	0	0	0	*0.000*
0.000	0.000	0.000		

l,
ıts will be added.

14,376	14,306	15,073	145,697	*16.633*

July	August	September	ANNUAL	*aMW*
107,136	107,136	103,680	980,660	*111.947*
42,751	42,751	41,372	503,359	*57.461*
64,385	64,385	62,308	477,301	*54.486*
107,136	107,136	103,680	980,660	*111.947*
-19,615	-18,575	-11,293	-111,116	*-12.684*
-26.364	-24.966	-15.685		
3,668	3,477	3,046	151,682	*17.315*
4.930	4.673	4.231		

[redacted]

2022	2022	2022		
7	8	9	Annual	aMW
400	432	400		
344	312	320		
125,180	124,919	121,799	1,278,039	*145.895*
161.786	156.652	163.785		
107,136	107,136	103,680	980,660	*111.947*
23,283	22,052	14,339	262,798	*30.000*
0	0	0	0	*0.000*
42,751	42,751	41,372	503,359	*57.461*
0.038	0.039	0.078	1.000	
0.538	0.581	0.556		
0.441	0.441	0.444		
0.089	0.084	0.051	1.000	
0.000	0.000	0.000		

July	August	September	ANNUAL	*aMW*
400	432	400	4912	
344	312	320	3848	
3,505,339	3,425,259	2,999,685	37,328,957	7,599.543
1,757,589	1,660,955	1,700,508	21,681,545	5,634.497

$1,998,417	$1,998,417	$1,998,417
($329,943)	($329,943)	($329,943)
$0	$0	$0
$36.83	$35.87	$28.15
$21.36	$26.85	$28.95
$0.00	$0.00	$0.00
0.24691%	0.24691%	0.24691%
0.24691%	0.24691%	0.24691%
-5,855	-5,001	-1,007
-1,932	-1,605	921

$493,429	$493,429	$493,429	$5,921,148	
($81,466)	($81,466)	($81,466)	($977,592)	
($215,641)	($179,397)	($28,334)	($16,519)	
($41,260)	($43,096)	$26,671	$429,540	
$0	$0	$0	$0	
$155,062	$189,470	$410,300	$5,356,577	
8,655	8,457	7,407	92,169	19
4,340	4,101	4,199	53,534	14
2,800	3,456	6,400	81,232	17
2,408	2,496	5,120	63,823	17

6736

FY2022 Annual Net Requirement Calculations and Block Amounts

Prepared by BPA, July 28, 2021

Customer Name	**PEND OREILLE PUD**
BES Number	10306
Fiscal Year	2022
Hours	8,760

Step 1: Above-RHWM Load Calculation

(in annual aMW)

TRL Forecast 1/	139.851
NLSL Resources 2/	105.904
Existing Resources 3/	7.403
Gross Requirements 4/	26.544
RHWM 5/	24.581
Above-RHWM Load 6/	1.963

Notes:
1/ TRL Forecast submitted by customer and approved by BPA (or BPA forecast if customer submitted forecast deemed not reasonable.)
2/ If NLSL see page 3 for additional calculations.
3/ Existing Resources are from Exhibit A and do not include resources serving NLSLs. Existing Resources can be removed in the second year of a Rate Period. See page 3 for removal of Existing Resource calculations.
4/ Gross Requirements is a preliminary Net Requirement calculation (preliminary since New Resources to serve Above-RHWM Load have not yet been added.)
5/ RHWM is from RHWM Process Outputs spreadsheet published on September 28, 2012, with updates for Provisional HWM if necessary.
6/ Headroom, if RHWM is greater than Gross Req, Above-RHWM Load, if RHWM is less than Gross Req.

Step 2: Annual Net Requirement Calculation

(in annual aMW)

Gross Requirements 7/	26.544
New Resources 8/	1.963
Net Requirements (NR) 9/	24.581
Tier 2 Block Amounts 10/	0.000

Notes:
7/ Gross Requirements from Step 1.
8/ New Resources equal Above-RHWM Load less T2 Amounts. If customer has New Specified Resources and T2 Block Amounts that sum to an amount greater than the customer's Above-RHWM Load, then the customer needs to determine the order of resource removal/T2 remarketing per section 10 of the body of the Slice/Block Contract.
9/ Net Requirements equals Gross Requirement Amounts less New Resources.
10/ T2 Amounts based on customer's election made by the September 30, 2011 Notice Deadline.
If T2 Amounts, then amounts go into section 2.5 of Exhibit C.
T2 Amounts plus T1 Amounts equal Net Requirements.

Monthly Net Requirement Calculations (with Block Amounts)

Prepared by BPA, July 28, 2021

	October	November	December	January	February
Hours	744	721	744	744	672
Step 4: Monthly Tier 1 Block Amount Calculations					
Monthly Block Shaping Factors	0.034	0.149	0.135	0.190	0.168
Monthly T1 Block Amounts (MWh)	7,321	32,084	29,069	40,913	36,175
Monthly T2 Block Amounts (MWh)	0	0	0	0	0
13/ Exhibit C, Section 1.2.1.4 states that monthly Tier 1 Block amounts in MWh are equal to the Monthly Shapin Shaping Factors are in Exhibit C, Section 1.2.13					
Diurnal Shaping Factors					
Monthly Block HLH Shaping Factors	N/A	N/A	N/A	N/A	N/A
Monthly Block LLH Shaping Factors	N/A	N/A	N/A	N/A	N/A
14/ Diurnal Shaping Factors per Exhibit C, Section 1.2.2.4 if customer elected Tier 1 Block within-month shaped t					
Total - T1 Block Amounts (MW/hr)	10.0	44.0	39.0	55.0	54.0
HLH - T1 Block Amounts (MW/hr)	10.0	44.0	39.0	55.0	54.0
LLH - T1 Block Amounts (MW/hr)	10.0	44.0	39.0	55.0	54.0
15/ Shaped within-month Block Amounts arre megawatt per hour amounts equal to the monthly MWh amounts and rounded to a whole number. Flat within-month Block Amounts are megawatt per hour amounts equal to the rounded to a whole number. The diurnal amounts go into section 1.3 of Exhibit C. Due to rounding the total me					
Tier 1 and Tier 2 Block Amounts (MWh)	7,440	31,724	29,016	40,920	36,288
Step 5: Net Requirement Calculations (and Unspecified Resources Amounts)					
TRL Forecast Energy (MWh)	80,313	86,590	95,350	121,605	107,113
TRL Forecast Peak (MW)	132.6	149.7	157.1	200.4	190.8
NLSL Resources (MWh)	58,153	56,356	58,153	85,752	77,453
Existing Resources (MWh)	14,685	2,905	10,042	3,073	2,574
Monthly Gross Requirements (MWh)	7,475	27,329	27,155	32,780	27,086
16/ TRL Forecast submitted by customer and approved by BPA (or BPA forecast if customer forecast not approve Existing Resources from Exhibit A. Monthly Gross Requirements equals TRL less NLSLs and Exisiting Resources. N					
New Specified Resources (MWh)	0	0	0	0	0
New Specified Resources (aMW)	0.000	0.000	0.000	0.000	0.000
Unspecified Resource Amts (MWh)	1,460	1,415	1,460	1,460	1,319
Unspecified Resource Amts (aMW)	1.963	1.963	1.963	1.963	1.963

17/ New Specified Resouces can be added to serve Above-RHWM Load. If customer must dedicate New Specifie
then customer may do so but the amounts will be reduced to match the Above-RHWM Load. If New Specified Re

Net Requirement Forecast (MWh)	6,015	25,914	25,695	31,320	25,767

18/ Net Requirements equals TRL less NLSLs, Existing Resources, New Resources (Specified and Unspecified), an

NLSL Calculations (if applicable)

Prepared by BPA, July 28, 2021

	October	November	December	January	February
NLSL Forecast (MWh)	58,153	56,356	58,153	85,752	77,453
Resources Serving an NLSL (MWh)	42,751	41,372	42,751	42,751	38,614
Change to NLSL Resources (MWh)	15,402	14,984	15,402	43,001	38,839
Updated Resources Serving NLSL (MWh)	58,153	56,356	58,153	85,752	77,453

18/ Original resource amounts from Exhibit A. Update NLSL resources in Exhibit A to match NLSL forecast.

Change to Existing Resources (MWh)	-15,402	-8,536	-12,061	-8,158	-4,344
Change to Existing Resources (aMW)	-20.702	-11.839	-16.212	-10.965	-6.464
Updated Total Existing Resources (MWh)	14,685	2,905	10,042	3,073	2,574
Updated Total Existing Resources (aMW)	19.737	4.029	13.497	4.130	3.830

19/ If customer has a single resource split amongst NLSL and non-NLSL load, then balance the single resource an

Removal of Existing Resources in Second Year of Rate Period (if applicable)

Prepared by BPA, July 28, 2021 — 0 1st Year = 0, Second Year = 1

[redacted]

29/ Existing Resource Removal for Subsequent Fiscal Years of Each Rate Period (section 10.5 of the Slice/Block Contracts) is applicable for customers that have Existing Resour
that is less than the preliminary Net Requirement in the first year of a rate period. Preliminary Net Requirement means BPA's forecast of Customer's Net Requirement for each

Customer Specific Data for Fiscal Year	2021	2021	2021	2022	2022

Prepared by BPA, July 28, 2021		10	11	12	1	2
RHWM	24.581	416	400	416	400	384
		328	321	328	344	288
BES Number	10306					
T2 Block Amounts	0					
TRL Forecast - Energy (MWh)		80,313	86,590	95,350	121,605	107,113
TRL Forecast - Peak (MW)		132.585	149.663	157.084	200.391	190.756
NLSL Forecast		58,153	56,356	58,153	85,752	77,453
Existing		30,087	11,441	22,103	11,231	6,918
New		0	0	0	0	0
NLSL		42,751	41,372	42,751	42,751	38,614
Block Shaping Factors		0.034	0.149	0.135	0.190	0.168
HLH Shaping Factors		0.559	0.555	0.559	0.538	0.571
LLH Shaping Factors		0.419	0.445	0.462	0.441	0.425
[redacted]						
Existing Resource Removal Shape		0.119	0.039	0.084	0.037	0.020
New Resource Removal Shape		0.000	0.000	0.000	0.000	0.000

Customer Charges and Load Shaping Charges
Prepared by BPA, July 28, 2021

	October	November	December	January	February
HLH by Month	416	400	416	400	384
LLH by Month	328	321	328	344	288
RHWM T1 System Capability HLH (MWh)	2,920,790	3,537,945	3,223,873	2,651,580	2,346,690
RHWM T1 System Capability LLH (MWh)	1,633,134	2,227,488	2,419,335	2,009,470	1,693,144

BP-22 Final Proposal Rates					
Composite Rate (TOCA) ($$/%)	$1,998,417	$1,998,417	$1,998,417	$1,998,417	$1,998,417
Non-Slice Rate ($$/%)	($329,943)	($329,943)	($329,943)	($329,943)	($329,943)
Slice Rate ($$/%)	$0	$0	$0	$0	$0
Load Shaping - HLH ($$/MWh)	$29.92	$31.71	$38.76	$34.29	$34.79
Load Shaping - LLH ($$/MWh)	$28.27	$29.14	$32.05	$25.85	$28.29
Financial Reserves Policy Surcharge	$0.00	$0.00	$0.00	$0.00	$0.00
Financial Reserves Policy Amount	**$0.0**	$-Millions			
Financial Reserves Policy Surcharge	$0.00				
FY2022 Billing Determinants					
TOCA %	0.36490%	0.36490%	0.36490%	0.36490%	0.36490%

Non-Slice TOCA %	0.36490%	0.36490%	0.36490%	0.36490%	0.36490%
Load Shaping - HLH (MWh)	-6,498	4,690	4,460	12,324	12,173
Load Shaping - LLH (MWh)	-2,679	5,996	3,964	11,587	9,374
FY2022 Tier 1 Power Charges without Low Density Discounts or Irrigation Rate Discounts					
Composite Charge	$729,222	$729,222	$729,222	$729,222	$729,222
Non-Slice Charge	($120,396)	($120,396)	($120,396)	($120,396)	($120,396)
Load Shaping - HLH	($194,419)	$148,721	$172,873	$422,603	$423,496
Load Shaping - LLH	($75,744)	$174,720	$127,041	$299,535	$265,183
Financial Reserves Policy Surcharge	$0	$0	$0	$0	$0
Total	$338,663	$932,267	$908,740	$1,330,964	$1,297,505
Steps in calculating Load Shaping Billing Determinants					
System Shaped Load HLH (MWh)	10,658	12,910	11,764	9,676	8,563
System Shaped Load LLH (MWh)	5,959	8,128	8,828	7,333	6,178
Actual Tier 1 Load HLH (MWh)	4,160	17,600	16,224	22,000	20,736
Actual Tier 1 Load LLH (MWh)	3,280	14,124	12,792	18,920	15,552

Step 3: Critical Slice & Block Amounts (with TOCAs)
(in annual aMW)

Tier 2 Block Amounts	0.000
Tier 1 Block Amounts 11/	24.581
Net Requirements	24.581

TOCAs 12/

Sum of RHWM	6736.361
Non-Slice TOCA	0.36490%
TOCA	0.36490%

Notes:
11/ Tier 1 Block Amounts equal Net Requirement less Tier 2 Amounts.
Annual Tier 1 Block Amounts (in aMW) go into section 1.1 of Exhibit C.
12/ TOCA equals minimum of Net Requirement or RHWM,
divided by the Sum of RHWM. Sum of RHWM in cell J18.
Non-Slice TOCA equals TOCA.

March	April	May	June	July	August	September	ANNUAL
743	720	744	720	744	744	720	8,760
0.159	0.010	0.000	0.000	0.038	0.039	0.078	1.000
34,237	2,153	0	0	8,183	8,398	16,796	215,330
0	0	0	0	0	0	0	0

g Factors * Annual Tier 1 Block Amounts in aMW (see Step 3) * Hours in Fiscal Year

N/A	N/A	N/A	N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	N/A	N/A	N/A	

o their Net Requirement. Not applicable to customers who elected flat Tier 1 block within-month shape.

46.0	3.0	0.0	0.0	11.0	11.0	23.0	214,654
46.0	3.0	0.0	0.0	11.0	11.0	23.0	
46.0	3.0	0.0	0.0	11.0	11.0	23.0	

calculated per 1.2.14 of Exhibit C multiplied by the diurnal shaping factor, divided by the hours in the month,
monthly MWh amounts calculated per 1.2.14 of Exhibit C divided by the hours in the month,
gawatt-hours established in cell O55 will be different than the megawatt-hours calculated in cell O50.

34,178	2,160	0	0	8,184	8,184	16,560	214,654

113,627	106,167	105,248	100,646	103,796	103,535	101,104	1,225,094
183.8	175.8	171.9	159.6	161.8	156.7	163.8	N/A
85,636	82,985	85,752	82,985	85,752	85,752	82,985	927,715
2,846	3,802	8,002	6,729	3,668	3,477	3,046	64,848
25,145	19,380	11,494	10,932	14,376	14,306	15,073	232,531

d.) TRL Forecast (energy and peak) goes into section 1.1 of Exhibit A. If NLSL see page 3 for additional calculations.
leed to add New Resources if customer has Above-RHWM Load before calculating Net Requirements.

0	0	0	0	0	0	0	0
0.000	0.000	0.000	0.000	0.000	0.000	0.000	
1,459	1,413	1,460	1,413	1,460	1,460	1,413	17,196
1.963	1.963	1.963	1.963	1.963	1.963	1.963	

ed Resources (ie Hydro Resources) and does not have enough (or any) Above-RHWM Load,
esources were not added to serve Above-RHWM Load, then Unspecified Resource Amounts will be added.

23,686	17,966	10,034	9,518	12,916	12,846	13,659	215,335

d plus T2 Amounts. Net Requirements goes into section 1.2 of Exhibit A.

March	April	May	June	July	August	September	ANNUAL
85,636	82,985	85,752	82,985	85,752	85,752	82,985	927,715
42,751	41,372	42,751	41,372	42,751	42,751	41,372	503,359
42,885	41,613	43,001	41,613	43,001	43,001	41,613	424,356
85,636	82,985	85,752	82,985	85,752	85,752	82,985	927,715
-4,194	-29,566	-34,850	-31,355	-19,615	-18,575	-11,293	-197,950
-5.645	-41.064	-46.841	-43.549	-26.364	-24.966	-15.685	
2,846	3,802	8,002	6,729	3,668	3,477	3,046	64,848
3.830	5.281	10.755	9.346	4.930	4.673	4.231	

nounts to match the NLSL forecast keeping the total dedicated amounts the same.

[redacted]

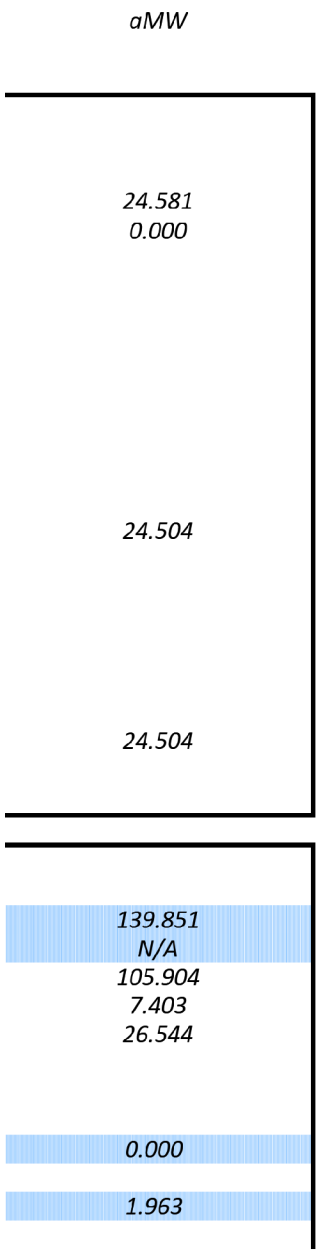
ces and have a Preliminary Net Requirement in the second year of a Rate Period
n Fiscal Year prior to the removal of any resources in accordance with section 10.

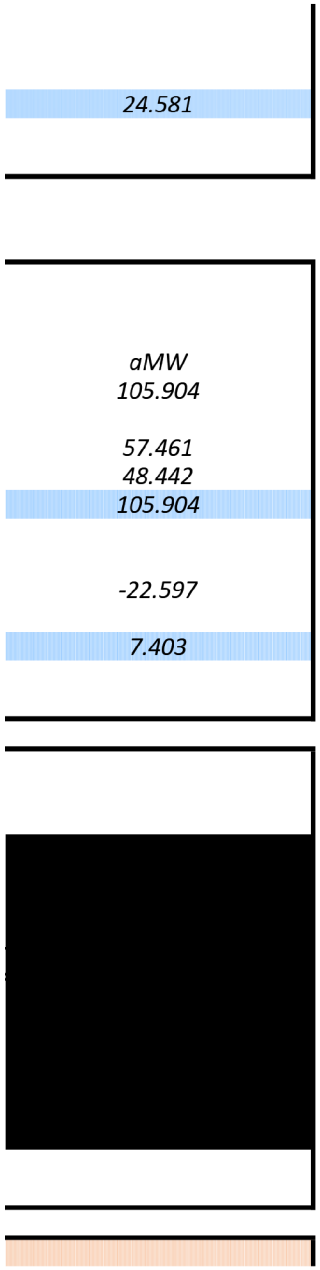
2022	2022	2022	2022	2022	2022	2022

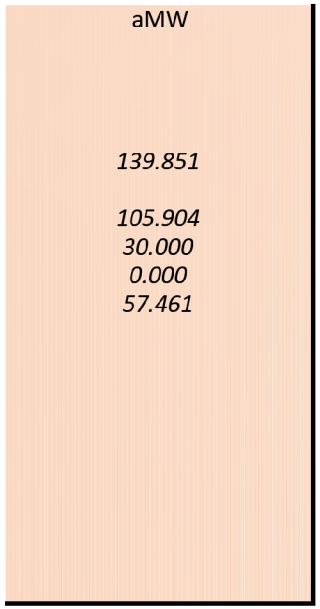
3	4	5	6	7	8	9	Annual
432	416	400	416	400	432	400	
311	304	344	304	344	312	320	
113,627	106,167	105,248	100,646	103,796	103,535	101,104	1,225,094
183.772	175.781	171.924	159.600	161.786	156.652	163.785	
85,636	82,985	85,752	82,985	85,752	85,752	82,985	927,715
7,040	33,368	42,852	38,084	23,283	22,052	14,339	262,798
0	0	0	0	0	0	0	0
42,751	41,372	42,751	41,372	42,751	42,751	41,372	503,359
0.159	0.010	0.000	0.000	0.038	0.039	0.078	1.000
0.581	0.578	0.538	0.578	0.538	0.581	0.556	
0.440	0.422	0.462	0.422	0.441	0.441	0.444	
0.019	0.133	0.173	0.154	0.089	0.084	0.051	1.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	

March	April	May	June	July	August	September	ANNUAL
432	416	400	416	400	432	400	4912
311	304	344	304	344	312	320	3848
2,961,839	2,307,314	3,495,710	3,952,933	3,505,339	3,425,259	2,999,685	37,328,957
1,860,906	1,436,906	1,691,935	1,590,174	1,757,589	1,660,955	1,700,508	21,681,545
$1,998,417	$1,998,417	$1,998,417	$1,998,417	$1,998,417	$1,998,417	$1,998,417	
($329,943)	($329,943)	($329,943)	($329,943)	($329,943)	($329,943)	($329,943)	
$0	$0	$0	$0	$0	$0	$0	
$27.57	$20.71	$16.28	$17.15	$36.83	$35.87	$28.15	
$28.44	$25.66	$16.30	$10.62	$21.36	$26.85	$28.95	
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
0.36490%	0.36490%	0.36490%	0.36490%	0.36490%	0.36490%	0.36490%	

0.36490%	0.36490%	0.36490%	0.36490%	0.36490%	0.36490%	0.36490%	
9,064	-7,171	-12,756	-14,424	-8,391	-7,747	-1,746	
7,516	-4,331	-6,174	-5,803	-2,629	-2,629	1,155	
$729,222	$729,222	$729,222	$729,222	$729,222	$729,222	$729,222	$8,750,664
($120,396)	($120,396)	($120,396)	($120,396)	($120,396)	($120,396)	($120,396)	($1,444,752)
$249,901	($148,519)	($207,665)	($247,376)	($309,040)	($277,877)	($49,146)	($16,448)
$213,742	($111,140)	($100,634)	($61,623)	($56,165)	($70,584)	$33,433	$637,764
$0	$0	$0	$0	$0	$0	$0	$0
$1,072,469	$349,167	$300,527	$299,827	$243,621	$260,365	$593,113	$7,927,228
10,808	8,419	12,756	14,424	12,791	12,499	10,946	136,213
6,790	5,243	6,174	5,803	6,413	6,061	6,205	79,116
19,872	1,248	0	0	4,400	4,752	9,200	120,192
14,306	912	0	0	3,784	3,432	7,360	94,462


aMW
24.581
0.000
24.504
24.504
139.851
N/A
105.904
7.403
26.544
0.000
1.963


24.581
aMW
105.904
57.461
48.442
105.904
-22.597
7.403



aMW

7,599.543 6736
5,634.497

28
21
24
25

From: April Owen

Sent: Wed Sep 01 15:02:15 2021

To: Patton,Kathryn B (BPA) - PSS-SEATTLE

Cc: Normandeau,Mike (BPA) - PSE-RONAN; Babaidhan,Sami A (BPA) - PSSE-MEAD-GOB

Bcc: mrnormandeau@bpa.gov; sababaidhan@bpa.gov

Subject: [EXTERNAL] FW: Pend Oreille FY2022 Forecast Breakout 2021-8-18.xlsx

Importance: Normal

Attachments: FY2022_NetRequirement_PEND_OREILLE_Draft at different NLSL loads_210830.xlsx

Kate,

I wanted to double-check my numbers on one last scenario, which is just like scenario 3 except that the mill starts in November:

Oct

Nov

Dec

Jan

Feb

Mar

Apr

May

June

July

Aug

Sept

Mill Operations (NLSL)

0

85

85

85

85

85

85

85

85

85

85

85

Cryptomining (New NLSL)

0

20

20

20

20

59

59

59

59

59

59

59

Total additional load

0

105

105

105

105

144

144

144

144

144

144

144

We will meet either today or tomorrow to make a final decision and get back to you.

Thanks,

April.

From: Patton,Kathryn B (BPA) - PSS-SEATTLE <kbpatton@bpa.gov>
Sent: Monday, August 30, 2021 11:11 AM
To: April Owen <aowen@popud.org>
Cc: Normandeau,Mike (BPA) - PSE-RONAN <mrnormandeau@bpa.gov>; Babaidhan,Sami A (BPA) - PSSE-MEAD-GOB <sababaidhan@bpa.gov>
Subject: RE: Pend Oreille FY2022 Forecast Breakout 2021-8-18.xlsx

Hello April,

The attached has Scenario 3.

Annual Net Requirement: 16.633

Monthly Block Amounts:

October

November

December

January	5,208
February	21,630
March	19,344
April	27,528
May	24,192
June	23,033
July	1,440
August	0
September	

0

5,208

5,952

11,520

Monthly Power Costs:

$234,228

$635,830

$604,528

$895,720

$866,362

$723,074

$235,772

$203,352

$202,879

$155,062

$189,470

$410,300

Kathryn Patton

Public Utility Specialist | Power Account Services

Bonneville Power Administration
bpa.gov | P 206-403-8034 |

cid:image001.jpg@01D52C3E.DF0B9390cid:image008.jpg@01D52C3E.09FCE1E0cid:image009.jpg@01D52C3E.09FCE1E0cid:image010.jpg@01D52C3E.09FCE1E0cid:image011.jpg@01D52C3E.09FCE1E0cid:image012.jpg@01D52C3E.09FCE1E0

From: April Owen <aowen@popud.org>
Sent: Monday, August 30, 2021 10:45 AM
To: Patton,Kathryn B (BPA) - PSS-SEATTLE <kbpatton@bpa.gov>
Cc: Normandeau,Mike (BPA) - PSE-RONAN <mrnormandeau@bpa.gov>; Babaidhan,Sami A (BPA) - PSSE-MEAD-GOB <sababaidhan@bpa.gov>
Subject: [EXTERNAL] RE: Pend Oreille FY2022 Forecast Breakout 2021-8-18.xlsx

Good morning Kate,

I was wondering where to go next when I got the notification from Andres, so thank you for running the numbers! That was very helpful, as I was not correctly incorporating in my estimates how the months with zero NLSL reduced the overall Net Requirements annual average. Could you run one more scenario for me?

Oct

Nov

Dec

Jan

Feb

Mar

Apr

May

June

July

Aug

Sept

Mill Operations (NLSL)

0

0

85

85

85

85

85

85

85

85

85

85

Cryptomining (New NLSL)

0

20

20

20

20

59

59

59

59

59

59

59

Total additional load

0

20

105

105

105

144

144

144

144

144

144

144

We are meeting with the customer this afternoon, so I am hoping to be able to get back to everyone on our final number tomorrow. Thanks for all the help!

April.

From: Patton,Kathryn B (BPA) - PSS-SEATTLE <kbpatton@bpa.gov>
Sent: Monday, August 30, 2021 10:16 AM
To: April Owen <aowen@popud.org>; Cicarelli,Andres A (BPA) - KSL-BELL-1 <aacicarelli@bpa.gov>
Cc: Normandeau,Mike (BPA) - PSE-RONAN <mrnormandeau@bpa.gov>; Babaidhan,Sami A (BPA) - PSSE-MEAD-GOB <sababaidhan@bpa.gov>
Subject: RE: Pend Oreille FY2022 Forecast Breakout 2021-8-18.xlsx

Hello April,

Just to let you know Andres retired on Friday. Mike is working with our forecasting manager to find out who will be covering his accounts.

In the meantime I was able to mock up new Net Requirement calculations based on your two scenarios. You can reference attached to see the specifics but here is how it breaks down.

Scenario 1:

Annual aMW Net Requirement: 7.896 aMWs

Monthly Block amounts:

October

November

December

January

February

March

April

May

June

July

August

September

2,232

10,094

9,672

13,392

11,424

11,145

720

0

0

2,976

2,976

Monthly Total Power Costs:

$104,174

$296,516

$304,490

$435,058

$409,343

$349,143

$112,752

$96,532

$96,307

$88,557

$94,772

$182,554

Scenario 2:

Annual aMW Net Requirement: 6.354 aMWs

Monthly Block amounts:

October

November

December

January

February

March

April

May

June

July

August

September

2,232

8,652

7,440

10,416

9,408

8,916

720

0

0

2,232

2,232

4,320

Monthly Total Power Costs:

$96,556

$254,788

$232,742

$339,136

$336,285

$279,494

$93,940

$77,681

$77,501

$66,432

$71,041

$154,437

Please let me know if you have any questions.

Kathryn Patton

Public Utility Specialist | Power Account Services

Bonneville Power Administration
bpa.gov | P 206-403-8034 |

cid:image001.jpg@01D52C3E.DF0B9390cid:image008.jpg@01D52C3E.09FCE1E0cid:image009.jpg@01D52C3E.09FCE1E0cid:image010.jpg@01D52C3E.09FCE1E0cid:image011.jpg@01D52C3E.09FCE1E0cid:image012.jpg@01D52C3E.09FCE1E0

From: April Owen <aowen@popud.org>
Sent: Friday, August 27, 2021 4:05 PM
To: Cicarelli,Andres A (BPA) - KSL-BELL-1 <aacicarelli@bpa.gov>
Cc: Normandeau,Mike (BPA) - PSE-RONAN <mrnormandeau@bpa.gov>; Patton,Kathryn B (BPA) - PSS-SEATTLE <kbpatton@bpa.gov>
Subject: [EXTERNAL] RE: Pend Oreille FY2022 Forecast Breakout 2021-8-18.xlsx

Hi Andres,

Mike and Kate and I discussed the Net Requirements process, as BPA transmission will need to perform studies at the mill site that will delay their start date. We discussed running through some scenarios to see what difference it made (if any) on the Net Requirements calculation. Not sure if you are the right person for this, but started with you!

Here's what I would like to test:

Oct

Nov

Dec

Jan

Feb

Mar

Apr

May

June

July

Aug

Sept

Mill Operations (NLSL)

0

0

0

85

85

85

85

85

85

85

85

85

Cryptomining (New NLSL)

0

0

0

0

0

0

25

25

25

50

50

50

Total additional load

0

0

0

85

85

85

110

110

110

135

135

135

Oct

Nov

Dec

Jan

Feb

Mar

Apr

May

June

July

Aug

Sept

Mill Operations (NLSL)

0

0

0

0

80

80

80

80

80

80

80

80

Cryptomining (New NLSL)

0

20

20

20

20

20

20

20

20

20

20

20

Total additional load

0

20

20

20

100

100

100

100

100

100

100

100

Let me know if I should run this through someone else. Again, I am looking to see if it changes what our annual Net Requirements will be. Otherwise, we will stick with what you have outlined below.

Thanks!

April.

April Owen

Director, Audit, Finance & Power Supply

Public Utility District No. 1 of Pend Oreille County

P.O. Box 190 | 130 N. Washington | Newport, WA 99156

509.447.9321 | aowen@popud.org | www.popud.org

From: Cicarelli,Andres A (BPA) - KSL-BELL-1 <aacicarelli@bpa.gov>
Sent: Friday, August 20, 2021 12:09 PM
To: April Owen <aowen@popud.org>
Cc: Normandeau,Mike (BPA) - PSE-RONAN <mrnormandeau@bpa.gov>
Subject: Pend Oreille FY2022 Forecast Breakout 2021-8-18.xlsx

Hi April,

Attached is the revised FY2022 forecast for Pend Oreille based on the PUD's comments. Any thoughts?

Talk to you later,

Andres

Pend Oreille County Public Utility District #1

FY2022 Annual Net Requirement Calculations and Block Amounts

Prepared by BPA, July 28, 2021

Customer Name	**PEND OREILLE PUD**
BES Number	10306
Fiscal Year	2022
Hours	8,760

Step 1: Above-RHWM Load Calculation

(in annual aMW)

TRL Forecast 1/	116.349
NLSL Resources 2/	82.401
Existing Resources 3/	26.052
Gross Requirements 4/	7.896
RHWM 5/	24.581
Headroom 6/	16.685

Notes:
1/ TRL Forecast submitted by customer and approved by BPA (or BPA forecast if customer submitted forecast deemed not reasonable.)
2/ If NLSL see page 3 for additional calculations.
3/ Existing Resources are from Exhibit A and do not include resources serving NLSLs. Existing Resources can be removed in the second year of a Rate Period. See page 3 for removal of Existing Resource calculations.
4/ Gross Requirements is a preliminary Net Requirement calculation (preliminary since New Resources to serve Above-RHWM Load have not yet been added.)
5/ RHWM is from RHWM Process Outputs spreadsheet published on September 28, 2012, with updates for Provisional HWM if necessary.
6/ Headroom, if RHWM is greater than Gross Req, Above-RHWM Load, if RHWM is less than Gross Req.

Step 2: Annual Net Requirement Calcul

(in annual aMW)

Gross Requirements 7/
New Resources 8/
Net Requirements (NR) 9/

Tier 2 Block Amounts 10/

Notes:
7/ Gross Requirements from Step 1.
8/ New Resources equal Above-RHWM Load Amounts. If customer has New Specified Re T2 Block Amounts that sum to an amount gr the customer's Above-RHWM Load, then the to determine the order of resource removal/ per section 10 of the body of the Slice/Block
9/ Net Requirements equals Gross Requirem less New Resources.
10/ T2 Amounts based on customer's electio September 30, 2011 Notice Deadline. If T2 Amounts, then amounts go into section T2 Amounts plus T1 Amounts equal Net Requ

Monthly Net Requirement Calculations (with Block Amounts)

Prepared by BPA, July 28, 2021

	October	November	December
Hours	744	721	744

Step 4: Monthly Tier 1 Block Amount Calculations

Monthly Block Shaping Factors	0.034	0.149	0.135
Monthly T1 Block Amounts (MWh)	2,352	10,306	9,337
Monthly T2 Block Amounts (MWh)	0	0	0

13/ Exhibit C, Section 1.2.1.4 states that monthly Tier 1 Block amo Shaping Factors are in Exhibit C, Section 1.2.13

Diurnal Shaping Factors			
Monthly Block HLH Shaping Factors	N/A	N/A	N/A
Monthly Block LLH Shaping Factors	N/A	N/A	N/A

14/ Diurnal Shaping Factors per Exhibit C, Section 1.2.2.4 if custom

Total - T1 Block Amounts (MW/hr)	3.0	14.0	13.0
HLH - T1 Block Amounts (MW/hr)	3.0	14.0	13.0
LLH - T1 Block Amounts (MW/hr)	3.0	14.0	13.0

15/ Shaped within-month Block Amounts arre megawatt per hour and rounded to a whole number. Flat within-month Block Amounts rounded to a whole number. The diurnal amounts go into section 1

Tier 1 and Tier 2 Block Amounts (MWh)	2,232	10,094	9,672

Step 5: Net Requirement Calculations (and Unspecified Resources Amounts)

TRL Forecast Energy (MWh)	22,160	30,234	37,197
TRL Forecast Peak (MW)	132.6	149.7	157.1
NLSL Resources (MWh)	0	0	0
Existing Resources (MWh)	72,838	52,813	68,195
Monthly Gross Requirements (MWh)	-50,678	-22,579	-30,998

16/ TRL Forecast submitted by customer and approved by BPA (or I Existing Resources from Exhibit A. Monthly Gross Requirements ec

New Specified Resources (MWh)	0	0	0
New Specified Resources (aMW)	0.000	0.000	0.000
Unspecified Resource Amts (MWh)	0	0	0
Unspecified Resource Amts (aMW)	0.000	0.000	0.000

17/ New Specified Resouces can be added to serve Above-RHWM then customer may do so but the amounts will be reduced to matc

Net Requirement Forecast (MWh)	(50,678)	(22,579)	(30,998)

18/ Net Requirements equals TRL less NLSLs, Existing Resources, N

NLSL Calculations (if applicable)

Prepared by BPA, July 28, 2021

	October	November	December
NLSL Forecast (MWh)	0	0	0
Resources Serving an NLSL (MWh)	42,751	41,372	42,751
Change to NLSL Resources (MWh)	-42,751	-41,372	-42,751
Updated Resources Serving NLSL (MWh)	0	0	0

18/ Original resource amounts from Exhibit A. Update NLSL resou

Change to Existing Resources (MWh)	42,751	41,372	46,092
Change to Existing Resources (aMW)	57.461	57.381	61.952
Updated Total Existing Resources (MWh)	72,838	52,813	68,195
Updated Total Existing Resources (aMW)	97.901	73.250	91.660

19/ If customer has a single resource split amongst NLSL and non-N

Removal of Existing Resources in Second Year of Rate Period (if applicable)

Prepared by BPA, July 28, 2021

0 1st Year = 0, Second Year = 1

[redacted]

[redacted]

29/ Existing Resource Removal for Subsequent Fiscal Years of Each Rate Period (section 10.5 of the Slice/Block Contracts) is appli
that is less than the preliminary Net Requirement in the first year of a rate period. Preliminary Net Requirement means BPA's for

Customer Specific Data for Fiscal Year		2021	2021	2021
Prepared by BPA, July 28, 2021		10	11	12
RHWM	24.581	416	400	416
		328	321	328
BES Number	10306			
T2 Block Amounts	0			
TRL Forecast - Energy (MWh)		22,160	30,234	37,197
TRL Forecast - Peak (MW)		132.585	149.663	157.084
NLSL Forecast		0	0	0
Existing		30,087	11,441	22,103
New		0	0	0
NLSL		42,751	41,372	42,751
Block Shaping Factors		0.034	0.149	0.135
HLH Shaping Factors		0.559	0.555	0.559
LLH Shaping Factors		0.419	0.445	0.462
[redacted]				
Existing Resource Removal Shape		0.119	0.039	0.084
New Resource Removal Shape		0.000	0.000	0.000

Customer Charges and Load Shaping Charges
Prepared by BPA, July 28, 2021

	October	November	December
HLH by Month	416	400	416
LLH by Month	328	321	328
RHWM T1 System Capability HLH (MWh)	2,920,790	3,537,945	3,223,873
RHWM T1 System Capability LLH (MWh)	1,633,134	2,227,488	2,419,335

BP-22 Final Proposal Rates			
Composite Rate (TOCA) ($$/%)	$1,998,417	$1,998,417	$1,998,417
Non-Slice Rate ($$/%)	($329,943)	($329,943)	($329,943)
Slice Rate ($$/%)	$0	$0	$0
Load Shaping - HLH ($$/MWh)	$29.92	$31.71	$38.76
Load Shaping - LLH ($$/MWh)	$28.27	$29.14	$32.05
Financial Reserves Policy Surcharge	$0.00	$0.00	$0.00
Financial Reserves Policy Amount	**$0.0**	$-Millions	
Financial Reserves Policy Surcharge	$0.00		
FY2022 Billing Determinants			
TOCA %	0.11721%	0.11721%	0.11721%
Non-Slice TOCA %	0.11721%	0.11721%	0.11721%
Load Shaping - HLH (MWh)	-2,175	1,453	1,629
Load Shaping - LLH (MWh)	-930	1,883	1,428
FY2022 Tier 1 Power Charges without Low Density Discounts or Irrigation Rate Discounts			

Composite Charge	$234,234	$234,234	$234,234
Non-Slice Charge	($38,673)	($38,673)	($38,673)
Load Shaping - HLH	($65,090)	$46,080	$63,152
Load Shaping - LLH	($26,297)	$54,875	$45,777
Financial Reserves Policy Surcharge	$0	$0	$0
Total	$104,174	$296,516	$304,490

Steps in calculating Load Shaping Billing Determinants			
System Shaped Load HLH (MWh)	3,423	4,147	3,779
System Shaped Load LLH (MWh)	1,914	2,611	2,836
Actual Tier 1 Load HLH (MWh)	1,248	5,600	5,408
Actual Tier 1 Load LLH (MWh)	984	4,494	4,264

ation		Step 3: Critical Slice & Block Amounts (with TOCAs) *(in annual aMW)*	
7.896		Tier 2 Block Amounts	0.000
0.000		Tier 1 Block Amounts 11/	7.896
7.896		Net Requirements	7.896
0.000		TOCAs 12/	
		Sum of RHWM	6736.361
less T2		Non-Slice TOCA	0.11721%
sources and		TOCA	0.11721%
eater than			
customer needs		Notes:	
T2 remarketing		11/ Tier 1 Block Amounts equal Net Requirement less Tier 2 Amounts.	
Contract.		Annual Tier 1 Block Amounts (in aMW) go into section 1.1 of Exhibit C.	
nent Amounts		12/ TOCA equals minimum of Net Requirement or RHWM,	
n made by the		divided by the Sum of RHWM. Sum of RHWM in cell J18.	
2.5 of Exhibit C.		Non-Slice TOCA equals TOCA.	
uirements.			

January	February	March	April	May	June
744	672	743	720	744	720

0.190	0.168	0.159	0.010	0.000	0.000
13,141	11,620	10,997	692	0	0
0	0	0	0	0	0

unts in MWh are equal to the Monthly Shaping Factors * Annual Tier 1 Block Amounts in aMW (see Step 3) * Hours in Fiscal Year

N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A

er elected Tier 1 Block within-month shaped to their Net Requirement. Not applicable to customers who elected flat Tier 1 block within

18.0	17.0	15.0	1.0	0.0	0.0
18.0	17.0	15.0	1.0	0.0	0.0
18.0	17.0	15.0	1.0	0.0	0.0

amounts equal to the monthly MWh amounts calculated per 1.2.14 of Exhibit C multiplied by the diurnal shaping factor, divided by the
are megawatt per hour amounts equal to the monthly MWh amounts calculated per 1.2.14 of Exhibit C divided by the hours in the mc
1.3 of Exhibit C. Due to rounding the total megawatt-hours established in cell O55 will be different than the megawatt-hours calculatec

13,392	11,424	11,145	720	0	0

99,093	86,780	91,146	102,382	101,336	96,861
200.4	190.8	183.8	175.8	171.9	159.6
63,240	57,120	63,155	79,200	81,840	79,200
3,073	2,574	0	3,802	8,002	6,729
32,780	27,086	27,991	19,380	11,494	10,932

BPA forecast if customer forecast not approved.) TRL Forecast (energy and peak) goes into section 1.1 of Exhibit A. If NLSL see page 3 f
uals TRL less NLSLs and Exisiting Resources. Need to add New Resources if customer has Above-RHWM Load before calculating Net Re

0	0	0	0	0	0
0.000	0.000	0.000	0.000	0.000	0.000
0	0	0	0	0	0
0.000	0.000	0.000	0.000	0.000	0.000

Load. If customer must dedicate New Specified Resources (ie Hydro Resources) and does not have enough (or any) Above-RHWM Loac
h the Above-RHWM Load. If New Specified Resources were not added to serve Above-RHWM Load, then Unspecified Resource Amour

32,780	27,086	27,991	19,380	11,494	10,932

ew Resources (Specified and Unspecified), and plus T2 Amounts. Net Requirements goes into section 1.2 of Exhibit A.

Revised: No Oct-Dec Load, Jan-Sep Mill on full, Crypto starts in April with full ramp

January	February	March	April	May	June
63,240	57,120	63,155	79,200	81,840	79,200
42,751	38,614	42,751	41,372	42,751	41,372
20,489	18,506	20,404	37,828	39,089	37,828
63,240	57,120	63,155	79,200	81,840	79,200

ces in Exhibit A to match NLSL forecast.

-8,158	-4,344	-20,404	-29,566	-34,850	-31,355
-10.965	-6.464	-27.462	-41.064	-46.841	-43.549
3,073	2,574	0	3,802	8,002	6,729
4.130	3.830	0.000	5.281	10.755	9.346

NLSL load, then balance the single resource amounts to match the NLSL forecast keeping the total dedicated amounts the same.

[redacted]

[redacted]

cable for customers that have Existing Resources and have a Preliminary Net Requirement in the second year of a Rate Period
ecast of Customer's Net Requirement for each Fiscal Year prior to the removal of any resources in accordance with section 10.

2022	2022	2022	2022	2022	2022
1	2	3	4	5	6
400	384	432	416	400	416
344	288	311	304	344	304
99,093	86,780	91,146	102,382	101,336	96,861
200.391	190.756	183.772	175.781	171.924	159.600
63,240	57,120	63,155	79,200	81,840	79,200
11,231	6,918	7,040	33,368	42,852	38,084
0	0	0	0	0	0
42,751	38,614	42,751	41,372	42,751	41,372
0.190	0.168	0.159	0.010	0.000	0.000
0.538	0.571	0.581	0.578	0.538	0.578
0.441	0.425	0.440	0.422	0.462	0.422
0.037	0.020	0.019	0.133	0.173	0.154
0.000	0.000	0.000	0.000	0.000	0.000

January	February	March	April	May	June
400	384	432	416	400	416
344	288	311	304	344	304
2,651,580	2,346,690	2,961,839	2,307,314	3,495,710	3,952,933
2,009,470	1,693,144	1,860,906	1,436,906	1,691,935	1,590,174
$1,998,417	$1,998,417	$1,998,417	$1,998,417	$1,998,417	$1,998,417
($329,943)	($329,943)	($329,943)	($329,943)	($329,943)	($329,943)
$0	$0	$0	$0	$0	$0
$34.29	$34.79	$27.57	$20.71	$16.28	$17.15
$25.85	$28.29	$28.44	$25.66	$16.30	$10.62
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
0.11721%	0.11721%	0.11721%	0.11721%	0.11721%	0.11721%
0.11721%	0.11721%	0.11721%	0.11721%	0.11721%	0.11721%
4,092	3,777	3,008	-2,288	-4,097	-4,633
3,837	2,911	2,484	-1,380	-1,983	-1,864

$234,234	$234,234	$234,234	$234,234	$234,234	$234,234
($38,673)	($38,673)	($38,673)	($38,673)	($38,673)	($38,673)
$140,318	$131,417	$82,942	($47,393)	($66,704)	($79,460)
$99,179	$82,365	$70,640	($35,416)	($32,325)	($19,794)
$0	$0	$0	$0	$0	$0
$435,058	$409,343	$349,143	$112,752	$96,532	$96,307
3,108	2,751	3,472	2,704	4,097	4,633
2,355	1,985	2,181	1,684	1,983	1,864
7,200	6,528	6,480	416	0	0
6,192	4,896	4,665	304	0	0

July	August	September	ANNUAL	*aMW*
744	744	720	8,760	
0.038	0.039	0.078	1.000	
2,628	2,697	5,395	69,166	*7.896*
0	0	0	0	*0.000*
N/A	N/A	N/A		
N/A	N/A	N/A		

ı-month shape.

4.0	4.0	7.0	69,671	*7.953*
4.0	4.0	7.0		
4.0	4.0	7.0		

hours in the month,
nth,
l in cell O50.

2,976	2,976	5,040	69,671	*7.953*

118,484	118,223	115,319	1,019,214	*116.349*
161.8	156.7	163.8	N/A	*N/A*
100,440	100,440	97,200	721,835	*82.401*
3,668	3,477	3,046	228,217	*26.052*
14,376	14,306	15,073	69,162	*7.896*

or additional calculations.
quirements.

0	0	0	0	*0.000*
0.000	0.000	0.000		
0	0	0	0	*0.000*
0.000	0.000	0.000		

l,
ıts will be added.

14,376	14,306	15,073	69,162	*7.896*

July	August	September	ANNUAL	*aMW*
100,440	100,440	97,200	721,835	*82.401*
42,751	42,751	41,372	503,359	*57.461*
57,689	57,689	55,828	218,476	*24.940*
100,440	100,440	97,200	721,835	*82.401*
-19,615	-18,575	-11,293	-47,945	*-5.473*
-26.364	-24.966	-15.685		
3,668	3,477	3,046	228,217	*26.052*
4.930	4.673	4.231		

[redacted]

2022	2022	2022		
7	8	9	Annual	aMW
400	432	400		
344	312	320		
118,484	118,223	115,319	1,019,214	*116.349*
161.786	156.652	163.785		
100,440	100,440	97,200	721,835	*82.401*
23,283	22,052	14,339	262,798	*30.000*
0	0	0	0	*0.000*
42,751	42,751	41,372	503,359	*57.461*
0.038	0.039	0.078	1.000	
0.538	0.581	0.556		
0.441	0.441	0.444		
0.089	0.084	0.051	1.000	
0.000	0.000	0.000		

July	August	September	ANNUAL	*aMW*
400	432	400	4912	
344	312	320	3848	
3,505,339	3,425,259	2,999,685	37,328,957	7,599.543
1,757,589	1,660,955	1,700,508	21,681,545	5,634.497

$1,998,417	$1,998,417	$1,998,417
($329,943)	($329,943)	($329,943)
$0	$0	$0
$36.83	$35.87	$28.15
$21.36	$26.85	$28.95
$0.00	$0.00	$0.00
0.11721%	0.11721%	0.11721%
0.11721%	0.11721%	0.11721%
-2,509	-2,287	-716
-684	-699	247

$234,234	$234,234	$234,234	$2,810,808	
($38,673)	($38,673)	($38,673)	($464,076)	
($92,392)	($82,026)	($20,153)	$10,691	
($14,612)	($18,763)	$7,146	$212,775	
$0	$0	$0	$0	
$88,557	$94,772	$182,554	$2,570,198	
4,109	4,015	3,516	43,753	9
2,060	1,947	1,993	25,413	7
1,600	1,728	2,800	39,008	8
1,376	1,248	2,240	30,663	8

6736

FY2022 Annual Net Requirement Calculations and Block Amounts

Prepared by BPA, July 28, 2021

Customer Name	**PEND OREILLE PUD**
BES Number	10306
Fiscal Year	2022
Hours	8,760

Step 1: Above-RHWM Load Calculation

(in annual aMW)

TRL Forecast 1/	105.281
NLSL Resources 2/	71.333
Existing Resources 3/	27.594
Gross Requirements 4/	6.354
RHWM 5/	24.581
Headroom 6/	18.227

Notes:
1/ TRL Forecast submitted by customer and approved by BPA (or BPA forecast if customer submitted forecast deemed not reasonable.)
2/ If NLSL see page 3 for additional calculations.
3/ Existing Resources are from Exhibit A and do not include resources serving NLSLs. Existing Resources can be removed in the second year of a Rate Period. See page 3 for removal of Existing Resource calculations.
4/ Gross Requirements is a preliminary Net Requirement calculation (preliminary since New Resources to serve Above-RHWM Load have not yet been added.)
5/ RHWM is from RHWM Process Outputs spreadsheet published on September 28, 2012, with updates for Provisional HWM if necessary.
6/ Headroom, if RHWM is greater than Gross Req, Above-RHWM Load, if RHWM is less than Gross Req.

Step 2: Annual Net Requirement Calcul

(in annual aMW)

Gross Requirements 7/
New Resources 8/
Net Requirements (NR) 9/

Tier 2 Block Amounts 10/

Notes:
7/ Gross Requirements from Step 1.
8/ New Resources equal Above-RHWM Load Amounts. If customer has New Specified Re T2 Block Amounts that sum to an amount gr the customer's Above-RHWM Load, then the to determine the order of resource removal/ per section 10 of the body of the Slice/Block
9/ Net Requirements equals Gross Requirem less New Resources.
10/ T2 Amounts based on customer's electio September 30, 2011 Notice Deadline. If T2 Amounts, then amounts go into section T2 Amounts plus T1 Amounts equal Net Requ

Monthly Net Requirement Calculations (with Block Amounts)

Prepared by BPA, July 28, 2021

	October	November	December
Hours	744	721	744

Step 4: Monthly Tier 1 Block Amount Calculations

Monthly Block Shaping Factors	0.034	0.149	0.135
Monthly T1 Block Amounts (MWh)	1,892	8,293	7,514
Monthly T2 Block Amounts (MWh)	0	0	0

13/ Exhibit C, Section 1.2.1.4 states that monthly Tier 1 Block amo Shaping Factors are in Exhibit C, Section 1.2.13

Diurnal Shaping Factors			
Monthly Block HLH Shaping Factors	N/A	N/A	N/A
Monthly Block LLH Shaping Factors	N/A	N/A	N/A

14/ Diurnal Shaping Factors per Exhibit C, Section 1.2.2.4 if custom

Total - T1 Block Amounts (MW/hr)	3.0	12.0	10.0
HLH - T1 Block Amounts (MW/hr)	3.0	12.0	10.0
LLH - T1 Block Amounts (MW/hr)	3.0	12.0	10.0

15/ Shaped within-month Block Amounts arre megawatt per hour and rounded to a whole number. Flat within-month Block Amounts rounded to a whole number. The diurnal amounts go into section 1

Tier 1 and Tier 2 Block Amounts (MWh)	2,232	8,652	7,440

Step 5: Net Requirement Calculations (and Unspecified Resources Amounts)

TRL Forecast Energy (MWh)	22,160	44,654	52,077
TRL Forecast Peak (MW)	132.6	149.7	157.1
NLSL Resources (MWh)	0	14,420	14,880
Existing Resources (MWh)	72,838	38,393	53,315
Monthly Gross Requirements (MWh)	-50,678	-8,159	-16,118

16/ TRL Forecast submitted by customer and approved by BPA (or I Existing Resources from Exhibit A. Monthly Gross Requirements ec

New Specified Resources (MWh)	0	0	0
New Specified Resources (aMW)	0.000	0.000	0.000
Unspecified Resource Amts (MWh)	0	0	0
Unspecified Resource Amts (aMW)	0.000	0.000	0.000

17/ New Specified Resouces can be added to serve Above-RHWM then customer may do so but the amounts will be reduced to matc

Net Requirement Forecast (MWh)	(50,678)	(8,159)	(16,118)

18/ Net Requirements equals TRL less NLSLs, Existing Resources, N

NLSL Calculations (if applicable)

Prepared by BPA, July 28, 2021

	October	November	December
NLSL Forecast (MWh)	0	14,420	14,880
Resources Serving an NLSL (MWh)	42,751	41,372	42,751
Change to NLSL Resources (MWh)	-42,751	-26,952	-27,871
Updated Resources Serving NLSL (MWh)	0	14,420	14,880

18/ Original resource amounts from Exhibit A. Update NLSL resou

Change to Existing Resources (MWh)	42,751	26,952	31,212
Change to Existing Resources (aMW)	57.461	37.381	41.952
Updated Total Existing Resources (MWh)	72,838	38,393	53,315
Updated Total Existing Resources (aMW)	97.901	53.250	71.660

19/ If customer has a single resource split amongst NLSL and non-N

Removal of Existing Resources in Second Year of Rate Period (if applicable)

Prepared by BPA, July 28, 2021

0 1st Year = 0, Second Year = 1

[redacted]

[redacted]

29/ Existing Resource Removal for Subsequent Fiscal Years of Each Rate Period (section 10.5 of the Slice/Block Contracts) is appli
that is less than the preliminary Net Requirement in the first year of a rate period. Preliminary Net Requirement means BPA's for

Customer Specific Data for Fiscal Year		2021	2021	2021
Prepared by BPA, July 28, 2021		10	11	12
RHWM	24.581	416	400	416
		328	321	328
BES Number	10306			
T2 Block Amounts	0			
TRL Forecast - Energy (MWh)		22,160	44,654	52,077
TRL Forecast - Peak (MW)		132.585	149.663	157.084
NLSL Forecast		0	14,420	14,880
Existing		30,087	11,441	22,103
New		0	0	0
NLSL		42,751	41,372	42,751
Block Shaping Factors		0.034	0.149	0.135
HLH Shaping Factors		0.559	0.555	0.559
LLH Shaping Factors		0.419	0.445	0.462
[redacted]				
Existing Resource Removal Shape		0.119	0.039	0.084
New Resource Removal Shape		0.000	0.000	0.000

Customer Charges and Load Shaping Charges
Prepared by BPA, July 28, 2021

	October	November	December
HLH by Month	416	400	416
LLH by Month	328	321	328
RHWM T1 System Capability HLH (MWh)	2,920,790	3,537,945	3,223,873
RHWM T1 System Capability LLH (MWh)	1,633,134	2,227,488	2,419,335

BP-22 Final Proposal Rates			
Composite Rate (TOCA) ($$/%)	$1,998,417	$1,998,417	$1,998,417
Non-Slice Rate ($$/%)	($329,943)	($329,943)	($329,943)
Slice Rate ($$/%)	$0	$0	$0
Load Shaping - HLH ($$/MWh)	$29.92	$31.71	$38.76
Load Shaping - LLH ($$/MWh)	$28.27	$29.14	$32.05
Financial Reserves Policy Surcharge	$0.00	$0.00	$0.00
Financial Reserves Policy Amount	**$0.0**	$-Millions	
Financial Reserves Policy Surcharge	$0.00		
FY2022 Billing Determinants			
TOCA %	0.09432%	0.09432%	0.09432%
Non-Slice TOCA %	0.09432%	0.09432%	0.09432%
Load Shaping - HLH (MWh)	-1,507	1,463	1,119
Load Shaping - LLH (MWh)	-556	1,751	998
FY2022 Tier 1 Power Charges without Low Density Discounts or Irrigation Rate Discounts			

Composite Charge	$188,491	$188,491	$188,491
Non-Slice Charge	($31,120)	($31,120)	($31,120)
Load Shaping - HLH	($45,086)	$46,392	$43,382
Load Shaping - LLH	($15,729)	$51,025	$31,989
Financial Reserves Policy Surcharge	$0	$0	$0
Total	$96,556	$254,788	$232,742

Steps in calculating Load Shaping Billing Determinants			
System Shaped Load HLH (MWh)	2,755	3,337	3,041
System Shaped Load LLH (MWh)	1,540	2,101	2,282
Actual Tier 1 Load HLH (MWh)	1,248	4,800	4,160
Actual Tier 1 Load LLH (MWh)	984	3,852	3,280

ation	Step 3: Critical Slice & Block Amounts (with TOCAs) *(in annual aMW)*	
6.354	Tier 2 Block Amounts	0.000
0.000	Tier 1 Block Amounts 11/	6.354
6.354	Net Requirements	6.354
0.000	TOCAs 12/	
	Sum of RHWM	6736.361
less T2	Non-Slice TOCA	0.09432%
sources and	TOCA	0.09432%
eater than		
customer needs	Notes:	
T2 remarketing	11/ Tier 1 Block Amounts equal Net Requirement less Tier 2 Amounts.	
Contract.	Annual Tier 1 Block Amounts (in aMW) go into section 1.1 of Exhibit C.	
nent Amounts	12/ TOCA equals minimum of Net Requirement or RHWM,	
	divided by the Sum of RHWM. Sum of RHWM in cell J18.	
n made by the	Non-Slice TOCA equals TOCA.	
2.5 of Exhibit C.		
uirements.		

January	February	March	April	May	June
744	672	743	720	744	720
0.190	0.168	0.159	0.010	0.000	0.000
10,575	9,351	8,850	557	0	0
0	0	0	0	0	0

unts in MWh are equal to the Monthly Shaping Factors * Annual Tier 1 Block Amounts in aMW (see Step 3) * Hours in Fiscal Year

N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A

er elected Tier 1 Block within-month shaped to their Net Requirement. Not applicable to customers who elected flat Tier 1 block within

14.0	14.0	12.0	1.0	0.0	0.0
14.0	14.0	12.0	1.0	0.0	0.0
14.0	14.0	12.0	1.0	0.0	0.0

amounts equal to the monthly MWh amounts calculated per 1.2.14 of Exhibit C multiplied by the diurnal shaping factor, divided by the
are megawatt per hour amounts equal to the monthly MWh amounts calculated per 1.2.14 of Exhibit C divided by the hours in the mc
1.3 of Exhibit C. Due to rounding the total megawatt-hours established in cell O55 will be different than the megawatt-hours calculatec

10,416	9,408	8,916	720	0	0

50,733	96,860	102,291	95,182	93,896	89,661
200.4	190.8	183.8	175.8	171.9	159.6
14,880	67,200	74,300	72,000	74,400	72,000
39,102	2,574	2,846	3,802	11,203	7,456
-3,249	27,086	25,145	19,380	8,293	10,205

BPA forecast if customer forecast not approved.) TRL Forecast (energy and peak) goes into section 1.1 of Exhibit A. If NLSL see page 3 f
juals TRL less NLSLs and Exisiting Resources. Need to add New Resources if customer has Above-RHWM Load before calculating Net Re

0	0	0	0	0	0
0.000	0.000	0.000	0.000	0.000	0.000
0	0	0	0	0	0
0.000	0.000	0.000	0.000	0.000	0.000

Load. If customer must dedicate New Specified Resources (ie Hydro Resources) and does not have enough (or any) Above-RHWM Loac
h the Above-RHWM Load. If New Specified Resources were not added to serve Above-RHWM Load, then Unspecified Resource Amour

(3,249)	27,086	25,145	19,380	8,293	10,205

ew Resources (Specified and Unspecified), and plus T2 Amounts. Net Requirements goes into section 1.2 of Exhibit A.

Revised: No Oct Load, Mill starts in Feb, Crypto flat at 20 MW starting Nov

January	February	March	April	May	June
14,880	67,200	74,300	72,000	74,400	72,000
42,751	38,614	42,751	41,372	42,751	41,372
-27,871	28,586	31,549	30,628	31,649	30,628
14,880	67,200	74,300	72,000	74,400	72,000

rces in Exhibit A to match NLSL forecast.

27,871	-4,344	-4,194	-29,566	-31,649	-30,628
37.461	-6.464	-5.645	-41.064	-42.539	-42.539
39,102	2,574	2,846	3,802	11,203	7,456
52.556	3.830	3.830	5.281	15.058	10.356

NLSL load, then balance the single resource amounts to match the NLSL forecast keeping the total dedicated amounts the same.

[redacted]

[redacted]

cable for customers that have Existing Resources and have a Preliminary Net Requirement in the second year of a Rate Period
ecast of Customer's Net Requirement for each Fiscal Year prior to the removal of any resources in accordance with section 10.

2022	2022	2022	2022	2022	2022
1	2	3	4	5	6
400	384	432	416	400	416
344	288	311	304	344	304
50,733	96,860	102,291	95,182	93,896	89,661
200.391	190.756	183.772	175.781	171.924	159.600
14,880	67,200	74,300	72,000	74,400	72,000
11,231	6,918	7,040	33,368	42,852	38,084
0	0	0	0	0	0
42,751	38,614	42,751	41,372	42,751	41,372
0.190	0.168	0.159	0.010	0.000	0.000
0.538	0.571	0.581	0.578	0.538	0.578
0.441	0.425	0.440	0.422	0.462	0.422
0.037	0.020	0.019	0.133	0.173	0.154
0.000	0.000	0.000	0.000	0.000	0.000

January	February	March	April	May	June
400	384	432	416	400	416
344	288	311	304	344	304
2,651,580	2,346,690	2,961,839	2,307,314	3,495,710	3,952,933
2,009,470	1,693,144	1,860,906	1,436,906	1,691,935	1,590,174
$1,998,417	$1,998,417	$1,998,417	$1,998,417	$1,998,417	$1,998,417
($329,943)	($329,943)	($329,943)	($329,943)	($329,943)	($329,943)
$0	$0	$0	$0	$0	$0
$34.29	$34.79	$27.57	$20.71	$16.28	$17.15
$25.85	$28.29	$28.44	$25.66	$16.30	$10.62
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
0.09432%	0.09432%	0.09432%	0.09432%	0.09432%	0.09432%
0.09432%	0.09432%	0.09432%	0.09432%	0.09432%	0.09432%
3,099	3,163	2,390	-1,760	-3,297	-3,728
2,921	2,435	1,977	-1,051	-1,596	-1,500

$188,491	$188,491	$188,491	$188,491	$188,491	$188,491
($31,120)	($31,120)	($31,120)	($31,120)	($31,120)	($31,120)
$106,266	$110,027	$65,903	($36,455)	($53,678)	($63,942)
$75,499	$68,887	$56,220	($26,976)	($26,012)	($15,928)
$0	$0	$0	$0	$0	$0
$339,136	$336,285	$279,494	$93,940	$77,681	$77,501
2,501	2,213	2,794	2,176	3,297	3,728
1,895	1,597	1,755	1,355	1,596	1,500
5,600	5,376	5,184	416	0	0
4,816	4,032	3,732	304	0	0

July	August	September	ANNUAL	*aMW*
744	744	720	8,760	
0.038	0.039	0.078	1.000	
2,115	2,171	4,341	55,658	*6.354*
0	0	0	0	*0.000*
N/A	N/A	N/A		
N/A	N/A	N/A		

ı-month shape.

3.0	3.0	6.0	56,568	*6.458*
3.0	3.0	6.0		
3.0	3.0	6.0		

hours in the month,
nth,
l in cell O50.

2,232	2,232	4,320	56,568	*6.458*

92,444	92,183	90,119	922,259	*105.281*
161.8	156.7	163.8	N/A	*N/A*
74,400	74,400	72,000	624,880	*71.333*
3,668	3,477	3,046	241,720	*27.594*
14,376	14,306	15,073	55,659	*6.354*

or additional calculations.
quirements.

0	0	0	0	*0.000*
0.000	0.000	0.000		
0	0	0	0	*0.000*
0.000	0.000	0.000		

l,
ıts will be added.

14,376	14,306	15,073	55,659	*6.354*

July	August	September	ANNUAL	*aMW*
74,400	74,400	72,000	624,880	*71.333*
42,751	42,751	41,372	503,359	*57.461*
31,649	31,649	30,628	121,521	*13.872*
74,400	74,400	72,000	624,880	*71.333*
-19,615	-18,575	-11,293	-21,078	*-2.406*
-26.364	-24.966	-15.685		
3,668	3,477	3,046	241,720	*27.594*
4.930	4.673	4.231		

[redacted]

2022	2022	2022		
7	8	9	Annual	aMW
400	432	400		
344	312	320		
92,444	92,183	90,119	922,259	*105.281*
161.786	156.652	163.785		
74,400	74,400	72,000	624,880	*71.333*
23,283	22,052	14,339	262,798	*30.000*
0	0	0	0	*0.000*
42,751	42,751	41,372	503,359	*57.461*
0.038	0.039	0.078	1.000	
0.538	0.581	0.556		
0.441	0.441	0.444		
0.089	0.084	0.051	1.000	
0.000	0.000	0.000		

July	August	September	ANNUAL	*aMW*
400	432	400	4912	
344	312	320	3848	
3,505,339	3,425,259	2,999,685	37,328,957	7,599.543
1,757,589	1,660,955	1,700,508	21,681,545	5,634.497

$1,998,417	$1,998,417	$1,998,417
($329,943)	($329,943)	($329,943)
$0	$0	$0
$36.83	$35.87	$28.15
$21.36	$26.85	$28.95
$0.00	$0.00	$0.00
0.09432%	0.09432%	0.09432%
0.09432%	0.09432%	0.09432%
-2,106	-1,935	-429
-626	-631	316

$188,491	$188,491	$188,491	$2,261,892	
($31,120)	($31,120)	($31,120)	($373,440)	
($77,573)	($69,398)	($12,085)	$13,753	
($13,366)	($16,932)	$9,151	$177,828	
$0	$0	$0	$0	
$66,432	$71,041	$154,437	$2,080,033	
3,306	3,231	2,829	35,209	7
1,658	1,567	1,604	20,450	5
1,200	1,296	2,400	31,680	6
1,032	936	1,920	24,888	6

6736

FY2022 Annual Net Requirement Calculations and Block Amounts

Prepared by BPA, July 28, 2021

Customer Name	**PEND OREILLE PUD**
BES Number	10306
Fiscal Year	2022
Hours	8,760

Step 1: Above-RHWM Load Calculation

(in annual aMW)

TRL Forecast 1/	145.895
NLSL Resources 2/	111.947
Existing Resources 3/	17.315
Gross Requirements 4/	16.633
RHWM 5/	24.581
Headroom 6/	7.948

Notes:
1/ TRL Forecast submitted by customer and approved by BPA (or BPA forecast if customer submitted forecast deemed not reasonable.)
2/ If NLSL see page 3 for additional calculations.
3/ Existing Resources are from Exhibit A and do not include resources serving NLSLs. Existing Resources can be removed in the second year of a Rate Period. See page 3 for removal of Existing Resource calculations.
4/ Gross Requirements is a preliminary Net Requirement calculation (preliminary since New Resources to serve Above-RHWM Load have not yet been added.)
5/ RHWM is from RHWM Process Outputs spreadsheet published on September 28, 2012, with updates for Provisional HWM if necessary.
6/ Headroom, if RHWM is greater than Gross Req, Above-RHWM Load, if RHWM is less than Gross Req.

Step 2: Annual Net Requirement Calcul

(in annual aMW)

Gross Requirements 7/
New Resources 8/
Net Requirements (NR) 9/

Tier 2 Block Amounts 10/

Notes:
7/ Gross Requirements from Step 1.
8/ New Resources equal Above-RHWM Load Amounts. If customer has New Specified Re T2 Block Amounts that sum to an amount gr the customer's Above-RHWM Load, then the to determine the order of resource removal/ per section 10 of the body of the Slice/Block
9/ Net Requirements equals Gross Requirem less New Resources.
10/ T2 Amounts based on customer's electio September 30, 2011 Notice Deadline. If T2 Amounts, then amounts go into section T2 Amounts plus T1 Amounts equal Net Requ

Monthly Net Requirement Calculations (with Block Amounts)

Prepared by BPA, July 28, 2021

	October	November	December
Hours	744	721	744

Step 4: Monthly Tier 1 Block Amount Calculations

Monthly Block Shaping Factors	0.034	0.149	0.135
Monthly T1 Block Amounts (MWh)	4,954	21,710	19,670
Monthly T2 Block Amounts (MWh)	0	0	0

13/ Exhibit C, Section 1.2.1.4 states that monthly Tier 1 Block amo Shaping Factors are in Exhibit C, Section 1.2.13

Diurnal Shaping Factors			
Monthly Block HLH Shaping Factors	N/A	N/A	N/A
Monthly Block LLH Shaping Factors	N/A	N/A	N/A

14/ Diurnal Shaping Factors per Exhibit C, Section 1.2.2.4 if custom

Total - T1 Block Amounts (MW/hr)	7.0	30.0	26.0
HLH - T1 Block Amounts (MW/hr)	7.0	30.0	26.0
LLH - T1 Block Amounts (MW/hr)	7.0	30.0	26.0

15/ Shaped within-month Block Amounts arre megawatt per hour and rounded to a whole number. Flat within-month Block Amounts rounded to a whole number. The diurnal amounts go into section 1

Tier 1 and Tier 2 Block Amounts (MWh)	5,208	21,630	19,344

Step 5: Net Requirement Calculations (and Unspecified Resources Amounts)

TRL Forecast Energy (MWh)	22,160	44,654	115,317
TRL Forecast Peak (MW)	132.6	149.7	157.1
NLSL Resources (MWh)	0	14,420	78,120
Existing Resources (MWh)	72,838	38,393	3,234
Monthly Gross Requirements (MWh)	-50,678	-8,159	33,963

16/ TRL Forecast submitted by customer and approved by BPA (or I Existing Resources from Exhibit A. Monthly Gross Requirements ec

New Specified Resources (MWh)	0	0	0
New Specified Resources (aMW)	0.000	0.000	0.000
Unspecified Resource Amts (MWh)	0	0	0
Unspecified Resource Amts (aMW)	0.000	0.000	0.000

17/ New Specified Resouces can be added to serve Above-RHWM then customer may do so but the amounts will be reduced to matc

Net Requirement Forecast (MWh)	(50,678)	(8,159)	33,963

18/ Net Requirements equals TRL less NLSLs, Existing Resources, N

NLSL Calculations (if applicable)

Prepared by BPA, July 28, 2021

	October	November	December
NLSL Forecast (MWh)	0	14,420	78,120
Resources Serving an NLSL (MWh)	42,751	41,372	42,751
Change to NLSL Resources (MWh)	-42,751	-26,952	35,369
Updated Resources Serving NLSL (MWh)	0	14,420	78,120

18/ Original resource amounts from Exhibit A. Update NLSL resou

Change to Existing Resources (MWh)	42,751	26,952	-18,869
Change to Existing Resources (aMW)	57.461	37.381	-25.362
Updated Total Existing Resources (MWh)	72,838	38,393	3,234
Updated Total Existing Resources (aMW)	97.901	53.250	4.347

19/ If customer has a single resource split amongst NLSL and non-N

Removal of Existing Resources in Second Year of Rate Period (if applicable)

Prepared by BPA, July 28, 2021

0 1st Year = 0, Second Year = 1

[redacted]

[redacted]

29/ Existing Resource Removal for Subsequent Fiscal Years of Each Rate Period (section 10.5 of the Slice/Block Contracts) is appli
that is less than the preliminary Net Requirement in the first year of a rate period. Preliminary Net Requirement means BPA's for

Customer Specific Data for Fiscal Year		2021	2021	2021
Prepared by BPA, July 28, 2021		10	11	12
RHWM	24.581	416	400	416
		328	321	328
BES Number	10306			
T2 Block Amounts	0			
TRL Forecast - Energy (MWh)		22,160	44,654	115,317
TRL Forecast - Peak (MW)		132.585	149.663	157.084
NLSL Forecast		0	14,420	78,120
Existing		30,087	11,441	22,103
New		0	0	0
NLSL		42,751	41,372	42,751
Block Shaping Factors		0.034	0.149	0.135
HLH Shaping Factors		0.559	0.555	0.559
LLH Shaping Factors		0.419	0.445	0.462
[redacted]				
Existing Resource Removal Shape		0.119	0.039	0.084
New Resource Removal Shape		0.000	0.000	0.000

Customer Charges and Load Shaping Charges
Prepared by BPA, July 28, 2021

	October	November	December
HLH by Month	416	400	416
LLH by Month	328	321	328
RHWM T1 System Capability HLH (MWh)	2,920,790	3,537,945	3,223,873
RHWM T1 System Capability LLH (MWh)	1,633,134	2,227,488	2,419,335

BP-22 Final Proposal Rates			
Composite Rate (TOCA) ($$/%)	$1,998,417	$1,998,417	$1,998,417
Non-Slice Rate ($$/%)	($329,943)	($329,943)	($329,943)
Slice Rate ($$/%)	$0	$0	$0
Load Shaping - HLH ($$/MWh)	$29.92	$31.71	$38.76
Load Shaping - LLH ($$/MWh)	$28.27	$29.14	$32.05
Financial Reserves Policy Surcharge	$0.00	$0.00	$0.00
Financial Reserves Policy Amount	**$0.0**	$-Millions	
Financial Reserves Policy Surcharge	$0.00		
FY2022 Billing Determinants			
TOCA %	0.24691%	0.24691%	0.24691%
Non-Slice TOCA %	0.24691%	0.24691%	0.24691%
Load Shaping - HLH (MWh)	-4,300	3,264	2,856
Load Shaping - LLH (MWh)	-1,736	4,130	2,554
FY2022 Tier 1 Power Charges without Low Density Discounts or Irrigation Rate Discounts			

Composite Charge	$493,429	$493,429	$493,429
Non-Slice Charge	($81,466)	($81,466)	($81,466)
Load Shaping - HLH	($128,648)	$103,516	$110,696
Load Shaping - LLH	($49,087)	$120,351	$81,869
Financial Reserves Policy Surcharge	$0	$0	$0
Total	$234,228	$635,830	$604,528

Steps in calculating Load Shaping Billing Determinants			
System Shaped Load HLH (MWh)	7,212	8,736	7,960
System Shaped Load LLH (MWh)	4,032	5,500	5,974
Actual Tier 1 Load HLH (MWh)	2,912	12,000	10,816
Actual Tier 1 Load LLH (MWh)	2,296	9,630	8,528

ation		Step 3: Critical Slice & Block Amounts (with TOCAs)	
		(in annual aMW)	
16.633		Tier 2 Block Amounts	0.000
0.000		Tier 1 Block Amounts 11/	16.633
16.633		Net Requirements	16.633
0.000		TOCAs 12/	
		Sum of RHWM	6736.361
less T2		Non-Slice TOCA	0.24691%
sources and		TOCA	0.24691%
eater than			
customer needs		Notes:	
T2 remarketing		11/ Tier 1 Block Amounts equal Net Requirement less Tier 2 Amounts.	
Contract.		Annual Tier 1 Block Amounts (in aMW) go into section 1.1 of Exhibit C.	
ent Amounts		12/ TOCA equals minimum of Net Requirement or RHWM,	
n made by the		divided by the Sum of RHWM. Sum of RHWM in cell J18.	
2.5 of Exhibit C.		Non-Slice TOCA equals TOCA.	
uirements.			

January	February	March	April	May	June
744	672	743	720	744	720
0.190	0.168	0.159	0.010	0.000	0.000
27,684	24,478	23,167	1,457	0	0
0	0	0	0	0	0

unts in MWh are equal to the Monthly Shaping Factors * Annual Tier 1 Block Amounts in aMW (see Step 3) * Hours in Fiscal Year

N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A

er elected Tier 1 Block within-month shaped to their Net Requirement. Not applicable to customers who elected flat Tier 1 block within

37.0	36.0	31.0	2.0	0.0	0.0
37.0	36.0	31.0	2.0	0.0	0.0
37.0	36.0	31.0	2.0	0.0	0.0

amounts equal to the monthly MWh amounts calculated per 1.2.14 of Exhibit C multiplied by the diurnal shaping factor, divided by the
are megawatt per hour amounts equal to the monthly MWh amounts calculated per 1.2.14 of Exhibit C divided by the hours in the mc
1.3 of Exhibit C. Due to rounding the total megawatt-hours established in cell O55 will be different than the megawatt-hours calculatec

27,528	24,192	23,033	1,440	0	0

113,973	100,220	134,983	126,862	126,632	121,341
200.4	190.8	183.8	175.8	171.9	159.6
78,120	70,560	106,992	103,680	107,136	103,680
3,073	2,574	2,846	3,802	8,002	6,729
32,780	27,086	25,145	19,380	11,494	10,932

BPA forecast if customer forecast not approved.) TRL Forecast (energy and peak) goes into section 1.1 of Exhibit A. If NLSL see page 3 f
uals TRL less NLSLs and Exisiting Resources. Need to add New Resources if customer has Above-RHWM Load before calculating Net Re

0	0	0	0	0	0
0.000	0.000	0.000	0.000	0.000	0.000
0	0	0	0	0	0
0.000	0.000	0.000	0.000	0.000	0.000

Load. If customer must dedicate New Specified Resources (ie Hydro Resources) and does not have enough (or any) Above-RHWM Loac
h the Above-RHWM Load. If New Specified Resources were not added to serve Above-RHWM Load, then Unspecified Resource Amour

32,780	27,086	25,145	19,380	11,494	10,932

ew Resources (Specified and Unspecified), and plus T2 Amounts. Net Requirements goes into section 1.2 of Exhibit A.

Revised: No Oct Load, Mill starts in December, Crypto ramp up starting Nov

January	February	March	April	May	June
78,120	70,560	106,992	103,680	107,136	103,680
42,751	38,614	42,751	41,372	42,751	41,372
35,369	31,946	64,241	62,308	64,385	62,308
78,120	70,560	106,992	103,680	107,136	103,680

rces in Exhibit A to match NLSL forecast.

-8,158	-4,344	-4,194	-29,566	-34,850	-31,355
-10.965	-6.464	-5.645	-41.064	-46.841	-43.549
3,073	2,574	2,846	3,802	8,002	6,729
4.130	3.830	3.830	5.281	10.755	9.346

NLSL load, then balance the single resource amounts to match the NLSL forecast keeping the total dedicated amounts the same.

[redacted]

[redacted]

cable for customers that have Existing Resources and have a Preliminary Net Requirement in the second year of a Rate Period
ecast of Customer's Net Requirement for each Fiscal Year prior to the removal of any resources in accordance with section 10.

2022	2022	2022	2022	2022	2022
1	2	3	4	5	6
400	384	432	416	400	416
344	288	311	304	344	304
113,973	100,220	134,983	126,862	126,632	121,341
200.391	190.756	183.772	175.781	171.924	159.600
78,120	70,560	106,992	103,680	107,136	103,680
11,231	6,918	7,040	33,368	42,852	38,084
0	0	0	0	0	0
42,751	38,614	42,751	41,372	42,751	41,372
0.190	0.168	0.159	0.010	0.000	0.000
0.538	0.571	0.581	0.578	0.538	0.578
0.441	0.425	0.440	0.422	0.462	0.422
0.037	0.020	0.019	0.133	0.173	0.154
0.000	0.000	0.000	0.000	0.000	0.000

January	February	March	April	May	June
400	384	432	416	400	416
344	288	311	304	344	304
2,651,580	2,346,690	2,961,839	2,307,314	3,495,710	3,952,933
2,009,470	1,693,144	1,860,906	1,436,906	1,691,935	1,590,174
$1,998,417	$1,998,417	$1,998,417	$1,998,417	$1,998,417	$1,998,417
($329,943)	($329,943)	($329,943)	($329,943)	($329,943)	($329,943)
$0	$0	$0	$0	$0	$0
$34.29	$34.79	$27.57	$20.71	$16.28	$17.15
$25.85	$28.29	$28.44	$25.66	$16.30	$10.62
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
0.24691%	0.24691%	0.24691%	0.24691%	0.24691%	0.24691%
0.24691%	0.24691%	0.24691%	0.24691%	0.24691%	0.24691%
8,253	8,030	6,079	-4,865	-8,631	-9,760
7,766	6,187	5,046	-2,940	-4,178	-3,926

$493,429	$493,429	$493,429	$493,429	$493,429	$493,429
($81,466)	($81,466)	($81,466)	($81,466)	($81,466)	($81,466)
$282,995	$279,356	$167,596	($100,754)	($140,517)	($167,387)
$200,762	$175,043	$143,515	($75,437)	($68,094)	($41,697)
$0	$0	$0	$0	$0	$0
$895,720	$866,362	$723,074	$235,772	$203,352	$202,879
6,547	5,794	7,313	5,697	8,631	9,760
4,962	4,181	4,595	3,548	4,178	3,926
14,800	13,824	13,392	832	0	0
12,728	10,368	9,641	608	0	0

July	August	September	ANNUAL	*aMW*
744	744	720	8,760	
0.038	0.039	0.078	1.000	
5,537	5,682	11,365	145,704	*16.633*
0	0	0	0	*0.000*
N/A	N/A	N/A		
N/A	N/A	N/A		

ı-month shape.

7.0	8.0	16.0	145,055	*16.559*
7.0	8.0	16.0		
7.0	8.0	16.0		

hours in the month,
nth,
l in cell O50.

5,208	5,952	11,520	145,055	*16.559*

125,180	124,919	121,799	1,278,039	*145.895*
161.8	156.7	163.8	N/A	*N/A*
107,136	107,136	103,680	980,660	*111.947*
3,668	3,477	3,046	151,682	*17.315*
14,376	14,306	15,073	145,697	*16.633*

or additional calculations.
quirements.

0	0	0	0	*0.000*
0.000	0.000	0.000		
0	0	0	0	*0.000*
0.000	0.000	0.000		

l,
ıts will be added.

14,376	14,306	15,073	145,697	*16.633*

July	August	September	ANNUAL	*aMW*
107,136	107,136	103,680	980,660	*111.947*
42,751	42,751	41,372	503,359	*57.461*
64,385	64,385	62,308	477,301	*54.486*
107,136	107,136	103,680	980,660	*111.947*
-19,615	-18,575	-11,293	-111,116	*-12.684*
-26.364	-24.966	-15.685		
3,668	3,477	3,046	151,682	*17.315*
4.930	4.673	4.231		

[redacted]

2022 7	2022 8	2022 9	Annual	aMW
400	432	400		
344	312	320		
125,180	124,919	121,799	1,278,039	*145.895*
161.786	156.652	163.785		
107,136	107,136	103,680	980,660	*111.947*
23,283	22,052	14,339	262,798	*30.000*
0	0	0	0	*0.000*
42,751	42,751	41,372	503,359	*57.461*
0.038	0.039	0.078	1.000	
0.538	0.581	0.556		
0.441	0.441	0.444		
0.089	0.084	0.051	1.000	
0.000	0.000	0.000		

July	August	September	ANNUAL	*aMW*
400	432	400	4912	
344	312	320	3848	
3,505,339	3,425,259	2,999,685	37,328,957	7,599.543
1,757,589	1,660,955	1,700,508	21,681,545	5,634.497
$1,998,417	$1,998,417	$1,998,417		
($329,943)	($329,943)	($329,943)		
$0	$0	$0		
$36.83	$35.87	$28.15		
$21.36	$26.85	$28.95		
$0.00	$0.00	$0.00		
0.24691%	0.24691%	0.24691%		
0.24691%	0.24691%	0.24691%		
-5,855	-5,001	-1,007		
-1,932	-1,605	921		

$493,429	$493,429	$493,429	$5,921,148	
($81,466)	($81,466)	($81,466)	($977,592)	
($215,641)	($179,397)	($28,334)	($16,519)	
($41,260)	($43,096)	$26,671	$429,540	
$0	$0	$0	$0	
$155,062	$189,470	$410,300	$5,356,577	
8,655	8,457	7,407	92,169	19
4,340	4,101	4,199	53,534	14
2,800	3,456	6,400	81,232	17
2,408	2,496	5,120	63,823	17

6736

FY2022 Annual Net Requirement Calculations and Block Amounts

Prepared by BPA, July 28, 2021

Customer Name	**PEND OREILLE PUD**
BES Number	10306
Fiscal Year	2022
Hours	8,760

Step 1: Above-RHWM Load Calculation

(in annual aMW)

TRL Forecast 1/	139.851
NLSL Resources 2/	105.904
Existing Resources 3/	7.403
Gross Requirements 4/	26.544
RHWM 5/	24.581
Above-RHWM Load 6/	1.963

Notes:
1/ TRL Forecast submitted by customer and approved by BPA (or BPA forecast if customer submitted forecast deemed not reasonable.)
2/ If NLSL see page 3 for additional calculations.
3/ Existing Resources are from Exhibit A and do not include resources serving NLSLs. Existing Resources can be removed in the second year of a Rate Period. See page 3 for removal of Existing Resource calculations.
4/ Gross Requirements is a preliminary Net Requirement calculation (preliminary since New Resources to serve Above-RHWM Load have not yet been added.)
5/ RHWM is from RHWM Process Outputs spreadsheet published on September 28, 2012, with updates for Provisional HWM if necessary.
6/ Headroom, if RHWM is greater than Gross Req, Above-RHWM Load, if RHWM is less than Gross Req.

Step 2: Annual Net Requirement Calculation

(in annual aMW)

Gross Requirements 7/	26.544
New Resources 8/	1.963
Net Requirements (NR) 9/	24.581
Tier 2 Block Amounts 10/	0.000

Notes:
7/ Gross Requirements from Step 1.
8/ New Resources equal Above-RHWM Load less T2 Amounts. If customer has New Specified Resources and T2 Block Amounts that sum to an amount greater than the customer's Above-RHWM Load, then the customer needs to determine the order of resource removal/T2 remarketing per section 10 of the body of the Slice/Block Contract.
9/ Net Requirements equals Gross Requirement Amounts less New Resources.
10/ T2 Amounts based on customer's election made by the September 30, 2011 Notice Deadline.
If T2 Amounts, then amounts go into section 2.5 of Exhibit C.
T2 Amounts plus T1 Amounts equal Net Requirements.

Monthly Net Requirement Calculations (with Block Amounts)

Prepared by BPA, July 28, 2021

	October	November	December	January	February
Hours	744	721	744	744	672
Step 4: Monthly Tier 1 Block Amount Calculations					
Monthly Block Shaping Factors	0.034	0.149	0.135	0.190	0.168
Monthly T1 Block Amounts (MWh)	7,321	32,084	29,069	40,913	36,175
Monthly T2 Block Amounts (MWh)	0	0	0	0	0
13/ Exhibit C, Section 1.2.1.4 states that monthly Tier 1 Block amounts in MWh are equal to the Monthly Shapin Shaping Factors are in Exhibit C, Section 1.2.13					
Diurnal Shaping Factors					
Monthly Block HLH Shaping Factors	N/A	N/A	N/A	N/A	N/A
Monthly Block LLH Shaping Factors	N/A	N/A	N/A	N/A	N/A
14/ Diurnal Shaping Factors per Exhibit C, Section 1.2.2.4 if customer elected Tier 1 Block within-month shaped t					
Total - T1 Block Amounts (MW/hr)	10.0	44.0	39.0	55.0	54.0
HLH - T1 Block Amounts (MW/hr)	10.0	44.0	39.0	55.0	54.0
LLH - T1 Block Amounts (MW/hr)	10.0	44.0	39.0	55.0	54.0
15/ Shaped within-month Block Amounts arre megawatt per hour amounts equal to the monthly MWh amounts and rounded to a whole number. Flat within-month Block Amounts are megawatt per hour amounts equal to the rounded to a whole number. The diurnal amounts go into section 1.3 of Exhibit C. Due to rounding the total me					
Tier 1 and Tier 2 Block Amounts (MWh)	7,440	31,724	29,016	40,920	36,288
Step 5: Net Requirement Calculations (and Unspecified Resources Amounts)					
TRL Forecast Energy (MWh)	80,313	86,590	95,350	121,605	107,113
TRL Forecast Peak (MW)	132.6	149.7	157.1	200.4	190.8
NLSL Resources (MWh)	58,153	56,356	58,153	85,752	77,453
Existing Resources (MWh)	14,685	2,905	10,042	3,073	2,574
Monthly Gross Requirements (MWh)	7,475	27,329	27,155	32,780	27,086
16/ TRL Forecast submitted by customer and approved by BPA (or BPA forecast if customer forecast not approve Existing Resources from Exhibit A. Monthly Gross Requirements equals TRL less NLSLs and Exisiting Resources. N					
New Specified Resources (MWh)	0	0	0	0	0
New Specified Resources (aMW)	0.000	0.000	0.000	0.000	0.000
Unspecified Resource Amts (MWh)	1,460	1,415	1,460	1,460	1,319
Unspecified Resource Amts (aMW)	1.963	1.963	1.963	1.963	1.963

17/ New Specified Resouces can be added to serve Above-RHWM Load. If customer must dedicate New Specifie
then customer may do so but the amounts will be reduced to match the Above-RHWM Load. If New Specified Re

Net Requirement Forecast (MWh)	6,015	25,914	25,695	31,320	25,767

18/ Net Requirements equals TRL less NLSLs, Existing Resources, New Resources (Specified and Unspecified), an

NLSL Calculations (if applicable)

Prepared by BPA, July 28, 2021

	October	November	December	January	February
NLSL Forecast (MWh)	58,153	56,356	58,153	85,752	77,453
Resources Serving an NLSL (MWh)	42,751	41,372	42,751	42,751	38,614
Change to NLSL Resources (MWh)	15,402	14,984	15,402	43,001	38,839
Updated Resources Serving NLSL (MWh)	58,153	56,356	58,153	85,752	77,453

18/ Original resource amounts from Exhibit A. Update NLSL resources in Exhibit A to match NLSL forecast.

Change to Existing Resources (MWh)	-15,402	-8,536	-12,061	-8,158	-4,344
Change to Existing Resources (aMW)	-20.702	-11.839	-16.212	-10.965	-6.464
Updated Total Existing Resources (MWh)	14,685	2,905	10,042	3,073	2,574
Updated Total Existing Resources (aMW)	19.737	4.029	13.497	4.130	3.830

19/ If customer has a single resource split amongst NLSL and non-NLSL load, then balance the single resource an

Removal of Existing Resources in Second Year of Rate Period (if applicable)

Prepared by BPA, July 28, 2021 — 0 1st Year = 0, Second Year = 1

[redacted]

29/ Existing Resource Removal for Subsequent Fiscal Years of Each Rate Period (section 10.5 of the Slice/Block Contracts) is applicable for customers that have Existing Resour
that is less than the preliminary Net Requirement in the first year of a rate period. Preliminary Net Requirement means BPA's forecast of Customer's Net Requirement for each

Customer Specific Data for Fiscal Year	2021	2021	2021	2022	2022

Prepared by BPA, July 28, 2021		10	11	12	1	2
RHWM	24.581	416	400	416	400	384
		328	321	328	344	288
BES Number	10306					
T2 Block Amounts	0					
TRL Forecast - Energy (MWh)		80,313	86,590	95,350	121,605	107,113
TRL Forecast - Peak (MW)		132.585	149.663	157.084	200.391	190.756
NLSL Forecast		58,153	56,356	58,153	85,752	77,453
Existing		30,087	11,441	22,103	11,231	6,918
New		0	0	0	0	0
NLSL		42,751	41,372	42,751	42,751	38,614
Block Shaping Factors		0.034	0.149	0.135	0.190	0.168
HLH Shaping Factors		0.559	0.555	0.559	0.538	0.571
LLH Shaping Factors		0.419	0.445	0.462	0.441	0.425
[redacted]						
Existing Resource Removal Shape		0.119	0.039	0.084	0.037	0.020
New Resource Removal Shape		0.000	0.000	0.000	0.000	0.000

Customer Charges and Load Shaping Charges
Prepared by BPA, July 28, 2021

	October	November	December	January	February
HLH by Month	416	400	416	400	384
LLH by Month	328	321	328	344	288
RHWM T1 System Capability HLH (MWh)	2,920,790	3,537,945	3,223,873	2,651,580	2,346,690
RHWM T1 System Capability LLH (MWh)	1,633,134	2,227,488	2,419,335	2,009,470	1,693,144
BP-22 Final Proposal Rates					
Composite Rate (TOCA) ($$/%)	$1,998,417	$1,998,417	$1,998,417	$1,998,417	$1,998,417
Non-Slice Rate ($$/%)	($329,943)	($329,943)	($329,943)	($329,943)	($329,943)
Slice Rate ($$/%)	$0	$0	$0	$0	$0
Load Shaping - HLH ($$/MWh)	$29.92	$31.71	$38.76	$34.29	$34.79
Load Shaping - LLH ($$/MWh)	$28.27	$29.14	$32.05	$25.85	$28.29
Financial Reserves Policy Surcharge	$0.00	$0.00	$0.00	$0.00	$0.00
Financial Reserves Policy Amount	$0.0	$-Millions			
Financial Reserves Policy Surcharge	$0.00				
FY2022 Billing Determinants					
TOCA %	0.36490%	0.36490%	0.36490%	0.36490%	0.36490%

Non-Slice TOCA %	0.36490%	0.36490%	0.36490%	0.36490%	0.36490%
Load Shaping - HLH (MWh)	-6,498	4,690	4,460	12,324	12,173
Load Shaping - LLH (MWh)	-2,679	5,996	3,964	11,587	9,374
FY2022 Tier 1 Power Charges without Low Density Discounts or Irrigation Rate Discounts					
Composite Charge	$729,222	$729,222	$729,222	$729,222	$729,222
Non-Slice Charge	($120,396)	($120,396)	($120,396)	($120,396)	($120,396)
Load Shaping - HLH	($194,419)	$148,721	$172,873	$422,603	$423,496
Load Shaping - LLH	($75,744)	$174,720	$127,041	$299,535	$265,183
Financial Reserves Policy Surcharge	$0	$0	$0	$0	$0
Total	$338,663	$932,267	$908,740	$1,330,964	$1,297,505
Steps in calculating Load Shaping Billing Determinants					
System Shaped Load HLH (MWh)	10,658	12,910	11,764	9,676	8,563
System Shaped Load LLH (MWh)	5,959	8,128	8,828	7,333	6,178
Actual Tier 1 Load HLH (MWh)	4,160	17,600	16,224	22,000	20,736
Actual Tier 1 Load LLH (MWh)	3,280	14,124	12,792	18,920	15,552

Step 3: Critical Slice & Block Amounts (with TOCAs)
(in annual aMW)

Tier 2 Block Amounts	0.000
Tier 1 Block Amounts 11/	24.581
Net Requirements	24.581

TOCAs 12/

Sum of RHWM	6736.361
Non-Slice TOCA	0.36490%
TOCA	0.36490%

Notes:
11/ Tier 1 Block Amounts equal Net Requirement less Tier 2 Amounts.
Annual Tier 1 Block Amounts (in aMW) go into section 1.1 of Exhibit C.
12/ TOCA equals minimum of Net Requirement or RHWM,
divided by the Sum of RHWM. Sum of RHWM in cell J18.
Non-Slice TOCA equals TOCA.

March	April	May	June	July	August	September	ANNUAL
743	720	744	720	744	744	720	8,760
0.159	0.010	0.000	0.000	0.038	0.039	0.078	1.000
34,237	2,153	0	0	8,183	8,398	16,796	215,330
0	0	0	0	0	0	0	0

g Factors * Annual Tier 1 Block Amounts in aMW (see Step 3) * Hours in Fiscal Year

N/A	N/A	N/A	N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	N/A	N/A	N/A	

o their Net Requirement. Not applicable to customers who elected flat Tier 1 block within-month shape.

46.0	3.0	0.0	0.0	11.0	11.0	23.0	214,654
46.0	3.0	0.0	0.0	11.0	11.0	23.0	
46.0	3.0	0.0	0.0	11.0	11.0	23.0	

calculated per 1.2.14 of Exhibit C multiplied by the diurnal shaping factor, divided by the hours in the month,
monthly MWh amounts calculated per 1.2.14 of Exhibit C divided by the hours in the month,
gawatt-hours established in cell O55 will be different than the megawatt-hours calculated in cell O50.

34,178	2,160	0	0	8,184	8,184	16,560	214,654

113,627	106,167	105,248	100,646	103,796	103,535	101,104	1,225,094
183.8	175.8	171.9	159.6	161.8	156.7	163.8	N/A
85,636	82,985	85,752	82,985	85,752	85,752	82,985	927,715
2,846	3,802	8,002	6,729	3,668	3,477	3,046	64,848
25,145	19,380	11,494	10,932	14,376	14,306	15,073	232,531

d.) TRL Forecast (energy and peak) goes into section 1.1 of Exhibit A. If NLSL see page 3 for additional calculations.
leed to add New Resources if customer has Above-RHWM Load before calculating Net Requirements.

0	0	0	0	0	0	0	0
0.000	0.000	0.000	0.000	0.000	0.000	0.000	
1,459	1,413	1,460	1,413	1,460	1,460	1,413	17,196
1.963	1.963	1.963	1.963	1.963	1.963	1.963	

ed Resources (ie Hydro Resources) and does not have enough (or any) Above-RHWM Load,
esources were not added to serve Above-RHWM Load, then Unspecified Resource Amounts will be added.

23,686	17,966	10,034	9,518	12,916	12,846	13,659	215,335

d plus T2 Amounts. Net Requirements goes into section 1.2 of Exhibit A.

March	April	May	June	July	August	September	ANNUAL
85,636	82,985	85,752	82,985	85,752	85,752	82,985	927,715
42,751	41,372	42,751	41,372	42,751	42,751	41,372	503,359
42,885	41,613	43,001	41,613	43,001	43,001	41,613	424,356
85,636	82,985	85,752	82,985	85,752	85,752	82,985	927,715
-4,194	-29,566	-34,850	-31,355	-19,615	-18,575	-11,293	-197,950
-5.645	-41.064	-46.841	-43.549	-26.364	-24.966	-15.685	
2,846	3,802	8,002	6,729	3,668	3,477	3,046	64,848
3.830	5.281	10.755	9.346	4.930	4.673	4.231	

nounts to match the NLSL forecast keeping the total dedicated amounts the same.

[redacted]

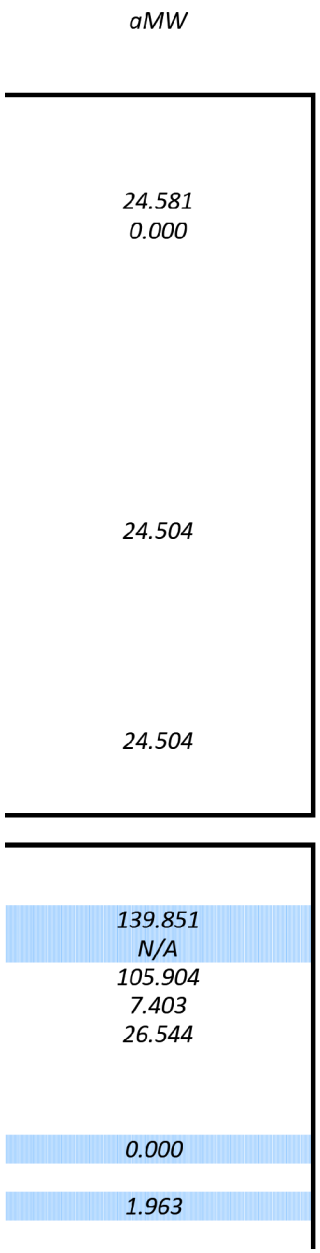
ces and have a Preliminary Net Requirement in the second year of a Rate Period
n Fiscal Year prior to the removal of any resources in accordance with section 10.

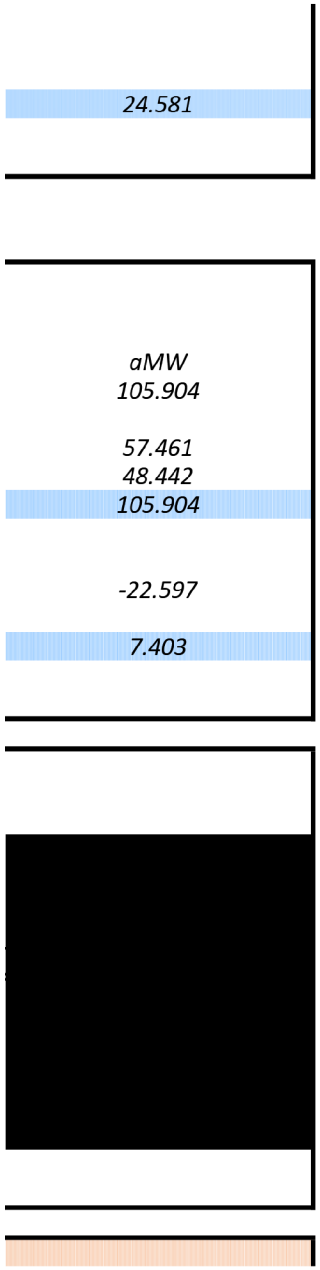
2022	2022	2022	2022	2022	2022	2022

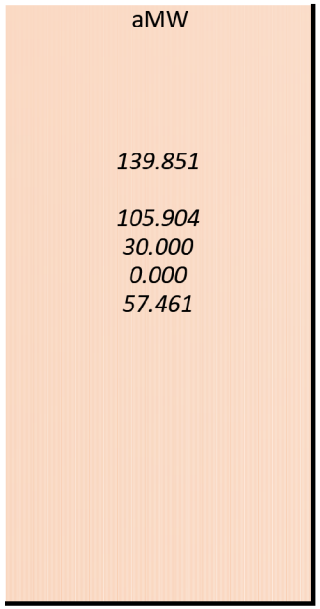
3	4	5	6	7	8	9	Annual
432	416	400	416	400	432	400	
311	304	344	304	344	312	320	
113,627	106,167	105,248	100,646	103,796	103,535	101,104	1,225,094
183.772	175.781	171.924	159.600	161.786	156.652	163.785	
85,636	82,985	85,752	82,985	85,752	85,752	82,985	927,715
7,040	33,368	42,852	38,084	23,283	22,052	14,339	262,798
0	0	0	0	0	0	0	0
42,751	41,372	42,751	41,372	42,751	42,751	41,372	503,359
0.159	0.010	0.000	0.000	0.038	0.039	0.078	1.000
0.581	0.578	0.538	0.578	0.538	0.581	0.556	
0.440	0.422	0.462	0.422	0.441	0.441	0.444	
0.019	0.133	0.173	0.154	0.089	0.084	0.051	1.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	

March	April	May	June	July	August	September	ANNUAL
432	416	400	416	400	432	400	4912
311	304	344	304	344	312	320	3848
2,961,839	2,307,314	3,495,710	3,952,933	3,505,339	3,425,259	2,999,685	37,328,957
1,860,906	1,436,906	1,691,935	1,590,174	1,757,589	1,660,955	1,700,508	21,681,545
$1,998,417	$1,998,417	$1,998,417	$1,998,417	$1,998,417	$1,998,417	$1,998,417	
($329,943)	($329,943)	($329,943)	($329,943)	($329,943)	($329,943)	($329,943)	
$0	$0	$0	$0	$0	$0	$0	
$27.57	$20.71	$16.28	$17.15	$36.83	$35.87	$28.15	
$28.44	$25.66	$16.30	$10.62	$21.36	$26.85	$28.95	
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
0.36490%	0.36490%	0.36490%	0.36490%	0.36490%	0.36490%	0.36490%	

0.36490%	0.36490%	0.36490%	0.36490%	0.36490%	0.36490%	0.36490%	
9,064	-7,171	-12,756	-14,424	-8,391	-7,747	-1,746	
7,516	-4,331	-6,174	-5,803	-2,629	-2,629	1,155	
$729,222	$729,222	$729,222	$729,222	$729,222	$729,222	$729,222	$8,750,664
($120,396)	($120,396)	($120,396)	($120,396)	($120,396)	($120,396)	($120,396)	($1,444,752)
$249,901	($148,519)	($207,665)	($247,376)	($309,040)	($277,877)	($49,146)	($16,448)
$213,742	($111,140)	($100,634)	($61,623)	($56,165)	($70,584)	$33,433	$637,764
$0	$0	$0	$0	$0	$0	$0	$0
$1,072,469	$349,167	$300,527	$299,827	$243,621	$260,365	$593,113	$7,927,228
10,808	8,419	12,756	14,424	12,791	12,499	10,946	136,213
6,790	5,243	6,174	5,803	6,413	6,061	6,205	79,116
19,872	1,248	0	0	4,400	4,752	9,200	120,192
14,306	912	0	0	3,784	3,432	7,360	94,462


aMW
24.581
0.000
24.504
24.504
139.851
N/A
105.904
7.403
26.544
0.000
1.963


24.581
aMW
105.904
57.461
48.442
105.904
-22.597
7.403



aMW

7,599.543 6736
5,634.497

28
21
24
25

From: Patton,Kathryn B (BPA) - PSS-SEATTLE

Sent: Wed Sep 01 15:20:10 2021

To: April Owen

Cc: Normandeau,Mike (BPA) - PSE-RONAN; Babaidhan,Sami A (BPA) - PSSE-MEAD-GOB

Subject: RE: Pend Oreille FY2022 Forecast Breakout 2021-8-18.xlsx

Importance: Normal

Attachments: FY2022_NetRequirement_PEND_OREILLE_Draft at different NLSL loads_210901.xlsx

Hello,

See attached for scenario 4.

Kathryn Patton

Public Utility Specialist | Power Account Services

Bonneville Power Administration
bpa.gov | P 206-403-8034 |

cid:image001.jpg@01D52C3E.DF0B9390cid:image008.jpg@01D52C3E.09FCE1E0cid:image009.jpg@

cid:image009.jpg@01D52C3E.09FCE1E0cid:image010.jpg@01D52C3E.09FCE1E0cid:image011.jpg@01D52C3E.09FCE1E0cid:image012.jpg@01D52C3E.09FCE1E0

From: April Owen <aowen@popud.org>
Sent: Wednesday, September 1, 2021 3:02 PM
To: Patton,Kathryn B (BPA) - PSS-SEATTLE <kbpatton@bpa.gov>
Cc: Normandeau,Mike (BPA) - PSE-RONAN <mrnormandeau@bpa.gov>; Babaidhan,Sami A (BPA) - PSSE-MEAD-GOB <sababaidhan@bpa.gov>
Subject: [EXTERNAL] FW: Pend Oreille FY2022 Forecast Breakout 2021-8-18.xlsx

Kate,

I wanted to double-check my numbers on one last scenario, which is just like scenario 3 except that the mill starts in November:

Oct

Nov

Dec

Jan

Feb

Mar

Apr

May

June

July

Aug

Sept

Mill Operations (NLSL)

0

85

85

85

85

85

85

85

85

85

85

85

Cryptomining (New NLSL)

0

20

20

20

20

59

59

59

59

59

59

59

59

Total additional load

0

105

105

105

105

144

144

144

144

144

144

144

144

We will meet either today or tomorrow to make a final decision and get back to you.

Thanks,

April.

From: Patton,Kathryn B (BPA) - PSS-SEATTLE <kbpatton@bpa.gov>
Sent: Monday, August 30, 2021 11:11 AM
To: April Owen <aowen@popud.org>
Cc: Normandeau,Mike (BPA) - PSE-RONAN <mrnormandeau@bpa.gov>; Babaidhan,Sami A (BPA) - PSSE-MEAD-GOB <sababaidhan@bpa.gov>
Subject: RE: Pend Oreille FY2022 Forecast Breakout 2021-8-18.xlsx

Hello April,

The attached has Scenario 3.

Annual Net Requirement: 16.633

Monthly Block Amounts:

October

November

December

January

February

March

April

May

June

July

August

September

5,208

21,630

19,344

27,528

24,192

23,033

1,440

0

0

5,208

5,952

11,520

Monthly Power Costs:

$234,228

$635,830

$604,528

$895,720

$866,362

$723,074

$235,772

$203,352

$202,879

$155,062

$189,470

$410,300

Kathryn Patton

Public Utility Specialist | Power Account Services

Bonneville Power Administration
bpa.gov | P 206-403-8034 |

cid:image001.jpg@01D52C3E.DF0B9390cid:image008.jpg@01D52C3E.09FCE1E0cid:image009.jpg@01D52C3E.09FCE1E0cid:image010.jpg@01D52C3E.09FCE1E0cid:image011.jpg@01D52C3E.09FCE1E0cid:image012.jpg@01D52C3E.09FCE1E0

From: April Owen <aowen@popud.org>
Sent: Monday, August 30, 2021 10:45 AM
To: Patton,Kathryn B (BPA) - PSS-SEATTLE <kbpatton@bpa.gov>
Cc: Normandeau,Mike (BPA) - PSE-RONAN <mrnormandeau@bpa.gov>; Babaidhan,Sami A (BPA) - PSSE-MEAD-GOB <sababaidhan@bpa.gov>
Subject: [EXTERNAL] RE: Pend Oreille FY2022 Forecast Breakout 2021-8-18.xlsx

Good morning Kate,

I was wondering where to go next when I got the notification from Andres, so thank you for running the numbers! That was very helpful, as I was not correctly incorporating in my estimates how the months with zero

NLSL reduced the overall Net Requirements annual average. Could you run one more scenario for me?

Oct

Nov

Dec

Jan

Feb

Mar

Apr

May

June

July

Aug

Sept

Mill Operations (NLSL)

0

0

85

85

85

85

85

85

85

85

85

85

Cryptomining (New NLSL)

0

20

20

20

20

59

59

59

59

59

59

59

Total additional load

0

20

105

105

105

144

144

144

144

144

144

144

We are meeting with the customer this afternoon, so I am hoping to be able to get back to everyone on our final number tomorrow. Thanks for all the help!

April.

From: Patton,Kathryn B (BPA) - PSS-SEATTLE <kbpatton@bpa.gov>
Sent: Monday, August 30, 2021 10:16 AM
To: April Owen <aowen@popud.org>; Cicarelli,Andres A (BPA) - KSL-BELL-1 <aacicarelli@bpa.gov>
Cc: Normandeau,Mike (BPA) - PSE-RONAN <mrnormandeau@bpa.gov>; Babaidhan,Sami A (BPA) - PSSE-MEAD-GOB <sababaidhan@bpa.gov>
Subject: RE: Pend Oreille FY2022 Forecast Breakout 2021-8-18.xlsx

Hello April,

Just to let you know Andres retired on Friday. Mike is working with our forecasting manager to find out who will be covering his accounts.

In the meantime I was able to mock up new Net Requirement calculations based on your two scenarios. You can reference attached to see the specifics but here is how it breaks down.

Scenario 1:

Annual aMW Net Requirement: 7.896 aMWs

Monthly Block amounts:

October

November

December

January

February

March

April

May

June

July

August

September

2,232

10,094

9,672

13,392

11,424

11,145

720

0

0

2,976

2,976

Monthly Total Power Costs:

$104,174

$296,516

$304,490

$435,058

$409,343

$349,143

$112,752

$96,532

$96,307

$88,557

$94,772

$182,554

Scenario 2:

Annual aMW Net Requirement: 6.354 aMWs

Monthly Block amounts:

October

November

December

January

February

March

April

May

June

July

August

September

2,232

8,652

7,440

10,416

9,408

8,916

720

0

0

2,232

2,232

4,320

Monthly Total Power Costs:

$96,556

$254,788

$232,742

$339,136

$336,285

$279,494

$93,940

$77,681

$77,501

$66,432

$71,041

$154,437

Please let me know if you have any questions.

Kathryn Patton

Public Utility Specialist | Power Account Services

Bonneville Power Administration
bpa.gov | P 206-403-8034 |

cid:image001.jpg@01D52C3E.DF0B9390cid:image008.jpg@01D52C3E.09FCE1E0cid:image009.jpg@01D52C3E.09FCE1E0cid:image010.jpg@01D52C3E.09FCE1E0cid:image011.jpg@01D52C3E.09FCE1E0cid:image012.jpg@01D52C3E.09FCE1E0

From: April Owen <aowen@popud.org>

Sent: Friday, August 27, 2021 4:05 PM
To: Cicarelli,Andres A (BPA) - KSL-BELL-1 <aacicarelli@bpa.gov>
Cc: Normandeau,Mike (BPA) - PSE-RONAN <mrnormandeau@bpa.gov>; Patton,Kathryn B (BPA) - PSS-SEATTLE <kbpatton@bpa.gov>
Subject: [EXTERNAL] RE: Pend Oreille FY2022 Forecast Breakout 2021-8-18.xlsx

Hi Andres,

Mike and Kate and I discussed the Net Requirements process, as BPA transmission will need to perform studies at the mill site that will delay their start date. We discussed running through some scenarios to see what difference it made (if any) on the Net Requirements calculation. Not sure if you are the right person for this, but started with you!

Here's what I would like to test:

Oct

Nov

Dec

Jan

Feb

Mar

Apr

May

June

July

Aug

Sept

Mill Operations (NLSL)

0

0

0

85

85

85

85

85

85

85

85

85

Cryptomining (New NLSL)

0

0

0

0

0

0

25

25

25

50

50

50

Total additional load

0

0

0

85

85

85

110

110

110

135

135

135

Oct

Nov

Dec

Jan

Feb

Mar

Apr

May

June

July

Aug

Sept

Mill Operations (NLSL)

0

0

0

0

80

80

80

80

80

80

80

80

Cryptomining (New NLSL)

0

20

20

20

20

20

20

20

20

20

20

20

Total additional load

0

20

20

20

100

100

100

100

100

100

100

100

Let me know if I should run this through someone else. Again, I am looking to see if it changes what our annual Net Requirements will be. Otherwise, we will stick with what you have outlined below.

Thanks!

April.

April Owen

Director, Audit, Finance & Power Supply

Public Utility District No. 1 of Pend Oreille County

P.O. Box 190 | 130 N. Washington | Newport, WA 99156

509.447.9321 | aowen@popud.org | www.popud.org

From: Cicarelli,Andres A (BPA) - KSL-BELL-1 <aacicarelli@bpa.gov>
Sent: Friday, August 20, 2021 12:09 PM
To: April Owen <aowen@popud.org>
Cc: Normandeau,Mike (BPA) - PSE-RONAN <mrnormandeau@bpa.gov>
Subject: Pend Oreille FY2022 Forecast Breakout 2021-8-18.xlsx

Hi April,

Attached is the revised FY2022 forecast for Pend Oreille based on the PUD's comments. Any thoughts?

Talk to you later,

Andres

Pend Oreille County Public Utility District #1

FY2022 Annual Net Requirement Calculations and Block Amounts

Prepared by BPA, July 28, 2021

Customer Name	**PEND OREILLE PUD**
BES Number	10306
Fiscal Year	2022
Hours	8,760

Step 1: Above-RHWM Load Calculation

(in annual aMW)

TRL Forecast 1/	116.349
NLSL Resources 2/	82.401
Existing Resources 3/	26.052
Gross Requirements 4/	7.896
RHWM 5/	24.581
Headroom 6/	16.685

Notes:
1/ TRL Forecast submitted by customer and approved by BPA (or BPA forecast if customer submitted forecast deemed not reasonable.)
2/ If NLSL see page 3 for additional calculations.
3/ Existing Resources are from Exhibit A and do not include resources serving NLSLs. Existing Resources can be removed in the second year of a Rate Period. See page 3 for removal of Existing Resource calculations.
4/ Gross Requirements is a preliminary Net Requirement calculation (preliminary since New Resources to serve Above-RHWM Load have not yet been added.)
5/ RHWM is from RHWM Process Outputs spreadsheet published on September 28, 2012, with updates for Provisional HWM if necessary.
6/ Headroom, if RHWM is greater than Gross Req, Above-RHWM Load, if RHWM is less than Gross Req.

Step 2: Annual Net Requirement Calcul

(in annual aMW)

Gross Requirements 7/
New Resources 8/
Net Requirements (NR) 9/

Tier 2 Block Amounts 10/

Notes:
7/ Gross Requirements from Step 1.
8/ New Resources equal Above-RHWM Load Amounts. If customer has New Specified Re T2 Block Amounts that sum to an amount gr the customer's Above-RHWM Load, then the to determine the order of resource removal/ per section 10 of the body of the Slice/Block
9/ Net Requirements equals Gross Requirem less New Resources.
10/ T2 Amounts based on customer's electio September 30, 2011 Notice Deadline. If T2 Amounts, then amounts go into section T2 Amounts plus T1 Amounts equal Net Requ

Monthly Net Requirement Calculations (with Block Amounts)

Prepared by BPA, July 28, 2021

	October	November	December
Hours	744	721	744

Step 4: Monthly Tier 1 Block Amount Calculations

Monthly Block Shaping Factors	0.034	0.149	0.135
Monthly T1 Block Amounts (MWh)	2,352	10,306	9,337
Monthly T2 Block Amounts (MWh)	0	0	0

13/ Exhibit C, Section 1.2.1.4 states that monthly Tier 1 Block amo Shaping Factors are in Exhibit C, Section 1.2.13

Diurnal Shaping Factors			
Monthly Block HLH Shaping Factors	N/A	N/A	N/A
Monthly Block LLH Shaping Factors	N/A	N/A	N/A

14/ Diurnal Shaping Factors per Exhibit C, Section 1.2.2.4 if custom

Total - T1 Block Amounts (MW/hr)	3.0	14.0	13.0
HLH - T1 Block Amounts (MW/hr)	3.0	14.0	13.0
LLH - T1 Block Amounts (MW/hr)	3.0	14.0	13.0

15/ Shaped within-month Block Amounts arre megawatt per hour and rounded to a whole number. Flat within-month Block Amounts rounded to a whole number. The diurnal amounts go into section 1

Tier 1 and Tier 2 Block Amounts (MWh)	2,232	10,094	9,672

Step 5: Net Requirement Calculations (and Unspecified Resources Amounts)

TRL Forecast Energy (MWh)	22,160	30,234	37,197
TRL Forecast Peak (MW)	132.6	149.7	157.1
NLSL Resources (MWh)	0	0	0
Existing Resources (MWh)	72,838	52,813	68,195
Monthly Gross Requirements (MWh)	-50,678	-22,579	-30,998

16/ TRL Forecast submitted by customer and approved by BPA (or I Existing Resources from Exhibit A. Monthly Gross Requirements ec

New Specified Resources (MWh)	0	0	0
New Specified Resources (aMW)	0.000	0.000	0.000
Unspecified Resource Amts (MWh)	0	0	0
Unspecified Resource Amts (aMW)	0.000	0.000	0.000

17/ New Specified Resouces can be added to serve Above-RHWM then customer may do so but the amounts will be reduced to matc

Net Requirement Forecast (MWh)	(50,678)	(22,579)	(30,998)

18/ Net Requirements equals TRL less NLSLs, Existing Resources, N

NLSL Calculations (if applicable)

Prepared by BPA, July 28, 2021

	October	November	December
NLSL Forecast (MWh)	0	0	0
Resources Serving an NLSL (MWh)	42,751	41,372	42,751
Change to NLSL Resources (MWh)	-42,751	-41,372	-42,751
Updated Resources Serving NLSL (MWh)	0	0	0

18/ Original resource amounts from Exhibit A. Update NLSL resou

Change to Existing Resources (MWh)	42,751	41,372	46,092
Change to Existing Resources (aMW)	57.461	57.381	61.952
Updated Total Existing Resources (MWh)	72,838	52,813	68,195
Updated Total Existing Resources (aMW)	97.901	73.250	91.660

19/ If customer has a single resource split amongst NLSL and non-N

Removal of Existing Resources in Second Year of Rate Period (if applicable)

Prepared by BPA, July 28, 2021 — 0 1st Year = 0, Second Year = 1

[redacted]

[redacted]

29/ Existing Resource Removal for Subsequent Fiscal Years of Each Rate Period (section 10.5 of the Slice/Block Contracts) is appli
that is less than the preliminary Net Requirement in the first year of a rate period. Preliminary Net Requirement means BPA's for

Customer Specific Data for Fiscal Year		2021	2021	2021
Prepared by BPA, July 28, 2021		10	11	12
RHWM	24.581	416	400	416
		328	321	328
BES Number	10306			
T2 Block Amounts	0			
TRL Forecast - Energy (MWh)		22,160	30,234	37,197
TRL Forecast - Peak (MW)		132.585	149.663	157.084
NLSL Forecast		0	0	0
Existing		30,087	11,441	22,103
New		0	0	0
NLSL		42,751	41,372	42,751
Block Shaping Factors		0.034	0.149	0.135
HLH Shaping Factors		0.559	0.555	0.559
LLH Shaping Factors		0.419	0.445	0.462
[redacted]				
Existing Resource Removal Shape		0.119	0.039	0.084
New Resource Removal Shape		0.000	0.000	0.000

Customer Charges and Load Shaping Charges
Prepared by BPA, July 28, 2021

	October	November	December
HLH by Month	416	400	416
LLH by Month	328	321	328
RHWM T1 System Capability HLH (MWh)	2,920,790	3,537,945	3,223,873
RHWM T1 System Capability LLH (MWh)	1,633,134	2,227,488	2,419,335

BP-22 Final Proposal Rates			
Composite Rate (TOCA) ($$/%)	$1,998,417	$1,998,417	$1,998,417
Non-Slice Rate ($$/%)	($329,943)	($329,943)	($329,943)
Slice Rate ($$/%)	$0	$0	$0
Load Shaping - HLH ($$/MWh)	$29.92	$31.71	$38.76
Load Shaping - LLH ($$/MWh)	$28.27	$29.14	$32.05
Financial Reserves Policy Surcharge	$0.00	$0.00	$0.00
Financial Reserves Policy Amount	**$0.0**	$-Millions	
Financial Reserves Policy Surcharge	$0.00		
FY2022 Billing Determinants			
TOCA %	0.11721%	0.11721%	0.11721%
Non-Slice TOCA %	0.11721%	0.11721%	0.11721%
Load Shaping - HLH (MWh)	-2,175	1,453	1,629
Load Shaping - LLH (MWh)	-930	1,883	1,428
FY2022 Tier 1 Power Charges without Low Density Discounts or Irrigation Rate Discounts			

Composite Charge	$234,234	$234,234	$234,234
Non-Slice Charge	($38,673)	($38,673)	($38,673)
Load Shaping - HLH	($65,090)	$46,080	$63,152
Load Shaping - LLH	($26,297)	$54,875	$45,777
Financial Reserves Policy Surcharge	$0	$0	$0
Total	$104,174	$296,516	$304,490

Steps in calculating Load Shaping Billing Determinants			
System Shaped Load HLH (MWh)	3,423	4,147	3,779
System Shaped Load LLH (MWh)	1,914	2,611	2,836
Actual Tier 1 Load HLH (MWh)	1,248	5,600	5,408
Actual Tier 1 Load LLH (MWh)	984	4,494	4,264

ation	Step 3: Critical Slice & Block Amounts (with TOCAs) *(in annual aMW)*	
7.896	Tier 2 Block Amounts	0.000
0.000	Tier 1 Block Amounts 11/	7.896
7.896	Net Requirements	7.896
0.000	TOCAs 12/	
	Sum of RHWM	6736.361
less T2	Non-Slice TOCA	0.11721%
sources and	TOCA	0.11721%
eater than		
customer needs	Notes:	
T2 remarketing	11/ Tier 1 Block Amounts equal Net Requirement less Tier 2 Amounts.	
Contract.	Annual Tier 1 Block Amounts (in aMW) go into section 1.1 of Exhibit C.	
nent Amounts	12/ TOCA equals minimum of Net Requirement or RHWM,	
	divided by the Sum of RHWM. Sum of RHWM in cell J18.	
n made by the	Non-Slice TOCA equals TOCA.	
2.5 of Exhibit C.		
uirements.		

January	February	March	April	May	June
744	672	743	720	744	720
0.190	0.168	0.159	0.010	0.000	0.000
13,141	11,620	10,997	692	0	0
0	0	0	0	0	0

unts in MWh are equal to the Monthly Shaping Factors * Annual Tier 1 Block Amounts in aMW (see Step 3) * Hours in Fiscal Year

N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A

er elected Tier 1 Block within-month shaped to their Net Requirement. Not applicable to customers who elected flat Tier 1 block within

18.0	17.0	15.0	1.0	0.0	0.0
18.0	17.0	15.0	1.0	0.0	0.0
18.0	17.0	15.0	1.0	0.0	0.0

amounts equal to the monthly MWh amounts calculated per 1.2.14 of Exhibit C multiplied by the diurnal shaping factor, divided by the
are megawatt per hour amounts equal to the monthly MWh amounts calculated per 1.2.14 of Exhibit C divided by the hours in the mc
1.3 of Exhibit C. Due to rounding the total megawatt-hours established in cell O55 will be different than the megawatt-hours calculatec

13,392	11,424	11,145	720	0	0

99,093	86,780	91,146	102,382	101,336	96,861
200.4	190.8	183.8	175.8	171.9	159.6
63,240	57,120	63,155	79,200	81,840	79,200
3,073	2,574	0	3,802	8,002	6,729
32,780	27,086	27,991	19,380	11,494	10,932

BPA forecast if customer forecast not approved.) TRL Forecast (energy and peak) goes into section 1.1 of Exhibit A. If NLSL see page 3 f
uals TRL less NLSLs and Exisiting Resources. Need to add New Resources if customer has Above-RHWM Load before calculating Net Re

0	0	0	0	0	0
0.000	0.000	0.000	0.000	0.000	0.000
0	0	0	0	0	0
0.000	0.000	0.000	0.000	0.000	0.000

Load. If customer must dedicate New Specified Resources (ie Hydro Resources) and does not have enough (or any) Above-RHWM Loac
h the Above-RHWM Load. If New Specified Resources were not added to serve Above-RHWM Load, then Unspecified Resource Amour

32,780	27,086	27,991	19,380	11,494	10,932

ew Resources (Specified and Unspecified), and plus T2 Amounts. Net Requirements goes into section 1.2 of Exhibit A.

Revised: No Oct-Dec Load, Jan-Sep Mill on full, Crypto starts in April with full ramp

January	February	March	April	May	June
63,240	57,120	63,155	79,200	81,840	79,200
42,751	38,614	42,751	41,372	42,751	41,372
20,489	18,506	20,404	37,828	39,089	37,828
63,240	57,120	63,155	79,200	81,840	79,200

ces in Exhibit A to match NLSL forecast.

-8,158	-4,344	-20,404	-29,566	-34,850	-31,355
-10.965	-6.464	-27.462	-41.064	-46.841	-43.549
3,073	2,574	0	3,802	8,002	6,729
4.130	3.830	0.000	5.281	10.755	9.346

NLSL load, then balance the single resource amounts to match the NLSL forecast keeping the total dedicated amounts the same.

[redacted]

[redacted]

cable for customers that have Existing Resources and have a Preliminary Net Requirement in the second year of a Rate Period
ecast of Customer's Net Requirement for each Fiscal Year prior to the removal of any resources in accordance with section 10.

2022	2022	2022	2022	2022	2022
1	2	3	4	5	6
400	384	432	416	400	416
344	288	311	304	344	304
99,093	86,780	91,146	102,382	101,336	96,861
200.391	190.756	183.772	175.781	171.924	159.600
63,240	57,120	63,155	79,200	81,840	79,200
11,231	6,918	7,040	33,368	42,852	38,084
0	0	0	0	0	0
42,751	38,614	42,751	41,372	42,751	41,372
0.190	0.168	0.159	0.010	0.000	0.000
0.538	0.571	0.581	0.578	0.538	0.578
0.441	0.425	0.440	0.422	0.462	0.422
0.037	0.020	0.019	0.133	0.173	0.154
0.000	0.000	0.000	0.000	0.000	0.000

January	February	March	April	May	June
400	384	432	416	400	416
344	288	311	304	344	304
2,651,580	2,346,690	2,961,839	2,307,314	3,495,710	3,952,933
2,009,470	1,693,144	1,860,906	1,436,906	1,691,935	1,590,174
$1,998,417	$1,998,417	$1,998,417	$1,998,417	$1,998,417	$1,998,417
($329,943)	($329,943)	($329,943)	($329,943)	($329,943)	($329,943)
$0	$0	$0	$0	$0	$0
$34.29	$34.79	$27.57	$20.71	$16.28	$17.15
$25.85	$28.29	$28.44	$25.66	$16.30	$10.62
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
0.11721%	0.11721%	0.11721%	0.11721%	0.11721%	0.11721%
0.11721%	0.11721%	0.11721%	0.11721%	0.11721%	0.11721%
4,092	3,777	3,008	-2,288	-4,097	-4,633
3,837	2,911	2,484	-1,380	-1,983	-1,864

$234,234	$234,234	$234,234	$234,234	$234,234	$234,234
($38,673)	($38,673)	($38,673)	($38,673)	($38,673)	($38,673)
$140,318	$131,417	$82,942	($47,393)	($66,704)	($79,460)
$99,179	$82,365	$70,640	($35,416)	($32,325)	($19,794)
$0	$0	$0	$0	$0	$0
$435,058	$409,343	$349,143	$112,752	$96,532	$96,307
3,108	2,751	3,472	2,704	4,097	4,633
2,355	1,985	2,181	1,684	1,983	1,864
7,200	6,528	6,480	416	0	0
6,192	4,896	4,665	304	0	0

July	August	September	ANNUAL	*aMW*
744	744	720	8,760	
0.038	0.039	0.078	1.000	
2,628	2,697	5,395	69,166	*7.896*
0	0	0	0	*0.000*
N/A	N/A	N/A		
N/A	N/A	N/A		

ı-month shape.

4.0	4.0	7.0	69,671	*7.953*
4.0	4.0	7.0		
4.0	4.0	7.0		

hours in the month,
nth,
l in cell O50.

2,976	2,976	5,040	69,671	*7.953*

118,484	118,223	115,319	1,019,214	*116.349*
161.8	156.7	163.8	N/A	*N/A*
100,440	100,440	97,200	721,835	*82.401*
3,668	3,477	3,046	228,217	*26.052*
14,376	14,306	15,073	69,162	*7.896*

or additional calculations.
quirements.

0	0	0	0	*0.000*
0.000	0.000	0.000		
0	0	0	0	*0.000*
0.000	0.000	0.000		

l,
ts will be added.

14,376	14,306	15,073	69,162	*7.896*

July	August	September	ANNUAL	*aMW*
100,440	100,440	97,200	721,835	*82.401*
42,751	42,751	41,372	503,359	*57.461*
57,689	57,689	55,828	218,476	*24.940*
100,440	100,440	97,200	721,835	*82.401*
-19,615	-18,575	-11,293	-47,945	*-5.473*
-26.364	-24.966	-15.685		
3,668	3,477	3,046	228,217	*26.052*
4.930	4.673	4.231		

[redacted]

2022	2022	2022		
7	8	9	Annual	aMW
400	432	400		
344	312	320		
118,484	118,223	115,319	1,019,214	*116.349*
161.786	156.652	163.785		
100,440	100,440	97,200	721,835	*82.401*
23,283	22,052	14,339	262,798	*30.000*
0	0	0	0	*0.000*
42,751	42,751	41,372	503,359	*57.461*
0.038	0.039	0.078	1.000	
0.538	0.581	0.556		
0.441	0.441	0.444		
0.089	0.084	0.051	1.000	
0.000	0.000	0.000		

July	August	September	ANNUAL	*aMW*
400	432	400	4912	
344	312	320	3848	
3,505,339	3,425,259	2,999,685	37,328,957	7,599.543
1,757,589	1,660,955	1,700,508	21,681,545	5,634.497

$1,998,417	$1,998,417	$1,998,417	
($329,943)	($329,943)	($329,943)	
$0	$0	$0	
$36.83	$35.87	$28.15	
$21.36	$26.85	$28.95	
$0.00	$0.00	$0.00	
0.11721%	0.11721%	0.11721%	
0.11721%	0.11721%	0.11721%	
-2,509	-2,287	-716	
-684	-699	247	

$234,234	$234,234	$234,234	$2,810,808	
($38,673)	($38,673)	($38,673)	($464,076)	
($92,392)	($82,026)	($20,153)	$10,691	
($14,612)	($18,763)	$7,146	$212,775	
$0	$0	$0	$0	
$88,557	$94,772	$182,554	$2,570,198	
4,109	4,015	3,516	43,753	9
2,060	1,947	1,993	25,413	7
1,600	1,728	2,800	39,008	8
1,376	1,248	2,240	30,663	8

6736

FY2022 Annual Net Requirement Calculations and Block Amounts

Prepared by BPA, July 28, 2021

Customer Name	**PEND OREILLE PUD**
BES Number	10306
Fiscal Year	2022
Hours	8,760

Step 1: Above-RHWM Load Calculation

(in annual aMW)

TRL Forecast 1/	105.281
NLSL Resources 2/	71.333
Existing Resources 3/	27.594
Gross Requirements 4/	6.354
RHWM 5/	24.581
Headroom 6/	18.227

Notes:
1/ TRL Forecast submitted by customer and approved by BPA (or BPA forecast if customer submitted forecast deemed not reasonable.)
2/ If NLSL see page 3 for additional calculations.
3/ Existing Resources are from Exhibit A and do not include resources serving NLSLs. Existing Resources can be removed in the second year of a Rate Period. See page 3 for removal of Existing Resource calculations.
4/ Gross Requirements is a preliminary Net Requirement calculation (preliminary since New Resources to serve Above-RHWM Load have not yet been added.)
5/ RHWM is from RHWM Process Outputs spreadsheet published on September 28, 2012, with updates for Provisional HWM if necessary.
6/ Headroom, if RHWM is greater than Gross Req, Above-RHWM Load, if RHWM is less than Gross Req.

Step 2: Annual Net Requirement Calcul

(in annual aMW)

Gross Requirements 7/
New Resources 8/
Net Requirements (NR) 9/

Tier 2 Block Amounts 10/

Notes:
7/ Gross Requirements from Step 1.
8/ New Resources equal Above-RHWM Load Amounts. If customer has New Specified Re T2 Block Amounts that sum to an amount gr the customer's Above-RHWM Load, then the to determine the order of resource removal/ per section 10 of the body of the Slice/Block
9/ Net Requirements equals Gross Requirem less New Resources.
10/ T2 Amounts based on customer's electio September 30, 2011 Notice Deadline. If T2 Amounts, then amounts go into section T2 Amounts plus T1 Amounts equal Net Requ

Monthly Net Requirement Calculations (with Block Amounts)

Prepared by BPA, July 28, 2021

	October	November	December
Hours	744	721	744

Step 4: Monthly Tier 1 Block Amount Calculations

Monthly Block Shaping Factors	0.034	0.149	0.135
Monthly T1 Block Amounts (MWh)	1,892	8,293	7,514
Monthly T2 Block Amounts (MWh)	0	0	0

13/ Exhibit C, Section 1.2.1.4 states that monthly Tier 1 Block amo Shaping Factors are in Exhibit C, Section 1.2.13

Diurnal Shaping Factors			
Monthly Block HLH Shaping Factors	N/A	N/A	N/A
Monthly Block LLH Shaping Factors	N/A	N/A	N/A

14/ Diurnal Shaping Factors per Exhibit C, Section 1.2.2.4 if custom

Total - T1 Block Amounts (MW/hr)	3.0	12.0	10.0
HLH - T1 Block Amounts (MW/hr)	3.0	12.0	10.0
LLH - T1 Block Amounts (MW/hr)	3.0	12.0	10.0

15/ Shaped within-month Block Amounts arre megawatt per hour and rounded to a whole number. Flat within-month Block Amounts rounded to a whole number. The diurnal amounts go into section 1

Tier 1 and Tier 2 Block Amounts (MWh)	2,232	8,652	7,440

Step 5: Net Requirement Calculations (and Unspecified Resources Amounts)

TRL Forecast Energy (MWh)	22,160	44,654	52,077
TRL Forecast Peak (MW)	132.6	149.7	157.1
NLSL Resources (MWh)	0	14,420	14,880
Existing Resources (MWh)	72,838	38,393	53,315
Monthly Gross Requirements (MWh)	-50,678	-8,159	-16,118

16/ TRL Forecast submitted by customer and approved by BPA (or I Existing Resources from Exhibit A. Monthly Gross Requirements ec

New Specified Resources (MWh)	0	0	0
New Specified Resources (aMW)	0.000	0.000	0.000
Unspecified Resource Amts (MWh)	0	0	0
Unspecified Resource Amts (aMW)	0.000	0.000	0.000

17/ New Specified Resouces can be added to serve Above-RHWM then customer may do so but the amounts will be reduced to matc

Net Requirement Forecast (MWh)	(50,678)	(8,159)	(16,118)

18/ Net Requirements equals TRL less NLSLs, Existing Resources, N

NLSL Calculations (if applicable)

Prepared by BPA, July 28, 2021

	October	November	December
NLSL Forecast (MWh)	0	14,420	14,880
Resources Serving an NLSL (MWh)	42,751	41,372	42,751
Change to NLSL Resources (MWh)	-42,751	-26,952	-27,871
Updated Resources Serving NLSL (MWh)	0	14,420	14,880

18/ Original resource amounts from Exhibit A. Update NLSL resou

Change to Existing Resources (MWh)	42,751	26,952	31,212
Change to Existing Resources (aMW)	57.461	37.381	41.952
Updated Total Existing Resources (MWh)	72,838	38,393	53,315
Updated Total Existing Resources (aMW)	97.901	53.250	71.660

19/ If customer has a single resource split amongst NLSL and non-N

Removal of Existing Resources in Second Year of Rate Period (if applicable)

Prepared by BPA, July 28, 2021 — 0 1st Year = 0, Second Year = 1

[redacted]

[redacted]

29/ Existing Resource Removal for Subsequent Fiscal Years of Each Rate Period (section 10.5 of the Slice/Block Contracts) is appli
that is less than the preliminary Net Requirement in the first year of a rate period. Preliminary Net Requirement means BPA's for

Customer Specific Data for Fiscal Year		2021	2021	2021
Prepared by BPA, July 28, 2021		10	11	12
RHWM	24.581	416	400	416
		328	321	328
BES Number	10306			
T2 Block Amounts	0			
TRL Forecast - Energy (MWh)		22,160	44,654	52,077
TRL Forecast - Peak (MW)		132.585	149.663	157.084
NLSL Forecast		0	14,420	14,880
Existing		30,087	11,441	22,103
New		0	0	0
NLSL		42,751	41,372	42,751
Block Shaping Factors		0.034	0.149	0.135
HLH Shaping Factors		0.559	0.555	0.559
LLH Shaping Factors		0.419	0.445	0.462
[redacted]				
Existing Resource Removal Shape		0.119	0.039	0.084
New Resource Removal Shape		0.000	0.000	0.000

Customer Charges and Load Shaping Charges
Prepared by BPA, July 28, 2021

	October	November	December
HLH by Month	416	400	416
LLH by Month	328	321	328
RHWM T1 System Capability HLH (MWh)	2,920,790	3,537,945	3,223,873
RHWM T1 System Capability LLH (MWh)	1,633,134	2,227,488	2,419,335

BP-22 Final Proposal Rates			
Composite Rate (TOCA) ($$/%)	$1,998,417	$1,998,417	$1,998,417
Non-Slice Rate ($$/%)	($329,943)	($329,943)	($329,943)
Slice Rate ($$/%)	$0	$0	$0
Load Shaping - HLH ($$/MWh)	$29.92	$31.71	$38.76
Load Shaping - LLH ($$/MWh)	$28.27	$29.14	$32.05
Financial Reserves Policy Surcharge	$0.00	$0.00	$0.00
Financial Reserves Policy Amount	**$0.0**	$-Millions	
Financial Reserves Policy Surcharge	$0.00		
FY2022 Billing Determinants			
TOCA %	0.09432%	0.09432%	0.09432%
Non-Slice TOCA %	0.09432%	0.09432%	0.09432%
Load Shaping - HLH (MWh)	-1,507	1,463	1,119
Load Shaping - LLH (MWh)	-556	1,751	998
FY2022 Tier 1 Power Charges without Low Density Discounts or Irrigation Rate Discounts			

Composite Charge	$188,491	$188,491	$188,491
Non-Slice Charge	($31,120)	($31,120)	($31,120)
Load Shaping - HLH	($45,086)	$46,392	$43,382
Load Shaping - LLH	($15,729)	$51,025	$31,989
Financial Reserves Policy Surcharge	$0	$0	$0
Total	$96,556	$254,788	$232,742

Steps in calculating Load Shaping Billing Determinants			
System Shaped Load HLH (MWh)	2,755	3,337	3,041
System Shaped Load LLH (MWh)	1,540	2,101	2,282
Actual Tier 1 Load HLH (MWh)	1,248	4,800	4,160
Actual Tier 1 Load LLH (MWh)	984	3,852	3,280

ation	Step 3: Critical Slice & Block Amounts (with TOCAs) *(in annual aMW)*	
6.354	Tier 2 Block Amounts	0.000
0.000	Tier 1 Block Amounts 11/	6.354
6.354	Net Requirements	6.354
0.000	TOCAs 12/	
	Sum of RHWM	6736.361
less T2	Non-Slice TOCA	0.09432%
sources and	TOCA	0.09432%
eater than		
customer needs	Notes:	
T2 remarketing	11/ Tier 1 Block Amounts equal Net Requirement less Tier 2 Amounts.	
Contract.	Annual Tier 1 Block Amounts (in aMW) go into section 1.1 of Exhibit C.	
nent Amounts	12/ TOCA equals minimum of Net Requirement or RHWM,	
	divided by the Sum of RHWM. Sum of RHWM in cell J18.	
n made by the	Non-Slice TOCA equals TOCA.	
2.5 of Exhibit C.		
uirements.		

January	February	March	April	May	June
744	672	743	720	744	720
0.190	0.168	0.159	0.010	0.000	0.000
10,575	9,351	8,850	557	0	0
0	0	0	0	0	0

unts in MWh are equal to the Monthly Shaping Factors * Annual Tier 1 Block Amounts in aMW (see Step 3) * Hours in Fiscal Year

N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A

er elected Tier 1 Block within-month shaped to their Net Requirement. Not applicable to customers who elected flat Tier 1 block within

14.0	14.0	12.0	1.0	0.0	0.0
14.0	14.0	12.0	1.0	0.0	0.0
14.0	14.0	12.0	1.0	0.0	0.0

amounts equal to the monthly MWh amounts calculated per 1.2.14 of Exhibit C multiplied by the diurnal shaping factor, divided by the
are megawatt per hour amounts equal to the monthly MWh amounts calculated per 1.2.14 of Exhibit C divided by the hours in the mc
1.3 of Exhibit C. Due to rounding the total megawatt-hours established in cell O55 will be different than the megawatt-hours calculatec

10,416	9,408	8,916	720	0	0

50,733	96,860	102,291	95,182	93,896	89,661
200.4	190.8	183.8	175.8	171.9	159.6
14,880	67,200	74,300	72,000	74,400	72,000
39,102	2,574	2,846	3,802	11,203	7,456
-3,249	27,086	25,145	19,380	8,293	10,205

BPA forecast if customer forecast not approved.) TRL Forecast (energy and peak) goes into section 1.1 of Exhibit A. If NLSL see page 3 f
uals TRL less NLSLs and Exisiting Resources. Need to add New Resources if customer has Above-RHWM Load before calculating Net Re

0	0	0	0	0	0
0.000	0.000	0.000	0.000	0.000	0.000
0	0	0	0	0	0
0.000	0.000	0.000	0.000	0.000	0.000

Load. If customer must dedicate New Specified Resources (ie Hydro Resources) and does not have enough (or any) Above-RHWM Loac
h the Above-RHWM Load. If New Specified Resources were not added to serve Above-RHWM Load, then Unspecified Resource Amour

(3,249)	27,086	25,145	19,380	8,293	10,205

ew Resources (Specified and Unspecified), and plus T2 Amounts. Net Requirements goes into section 1.2 of Exhibit A.

Revised: No Oct Load, Mill starts in Feb, Crypto flat at 20 MW starting Nov

January	February	March	April	May	June
14,880	67,200	74,300	72,000	74,400	72,000
42,751	38,614	42,751	41,372	42,751	41,372
-27,871	28,586	31,549	30,628	31,649	30,628
14,880	67,200	74,300	72,000	74,400	72,000

ces in Exhibit A to match NLSL forecast.

27,871	-4,344	-4,194	-29,566	-31,649	-30,628
37.461	-6.464	-5.645	-41.064	-42.539	-42.539
39,102	2,574	2,846	3,802	11,203	7,456
52.556	3.830	3.830	5.281	15.058	10.356

NLSL load, then balance the single resource amounts to match the NLSL forecast keeping the total dedicated amounts the same.

[redacted]

[redacted]

cable for customers that have Existing Resources and have a Preliminary Net Requirement in the second year of a Rate Period
ecast of Customer's Net Requirement for each Fiscal Year prior to the removal of any resources in accordance with section 10.

2022	2022	2022	2022	2022	2022
1	2	3	4	5	6
400	384	432	416	400	416
344	288	311	304	344	304
50,733	96,860	102,291	95,182	93,896	89,661
200.391	190.756	183.772	175.781	171.924	159.600
14,880	67,200	74,300	72,000	74,400	72,000
11,231	6,918	7,040	33,368	42,852	38,084
0	0	0	0	0	0
42,751	38,614	42,751	41,372	42,751	41,372
0.190	0.168	0.159	0.010	0.000	0.000
0.538	0.571	0.581	0.578	0.538	0.578
0.441	0.425	0.440	0.422	0.462	0.422
0.037	0.020	0.019	0.133	0.173	0.154
0.000	0.000	0.000	0.000	0.000	0.000

January	February	March	April	May	June
400	384	432	416	400	416
344	288	311	304	344	304
2,651,580	2,346,690	2,961,839	2,307,314	3,495,710	3,952,933
2,009,470	1,693,144	1,860,906	1,436,906	1,691,935	1,590,174
$1,998,417	$1,998,417	$1,998,417	$1,998,417	$1,998,417	$1,998,417
($329,943)	($329,943)	($329,943)	($329,943)	($329,943)	($329,943)
$0	$0	$0	$0	$0	$0
$34.29	$34.79	$27.57	$20.71	$16.28	$17.15
$25.85	$28.29	$28.44	$25.66	$16.30	$10.62
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
0.09432%	0.09432%	0.09432%	0.09432%	0.09432%	0.09432%
0.09432%	0.09432%	0.09432%	0.09432%	0.09432%	0.09432%
3,099	3,163	2,390	-1,760	-3,297	-3,728
2,921	2,435	1,977	-1,051	-1,596	-1,500

$188,491	$188,491	$188,491	$188,491	$188,491	$188,491
($31,120)	($31,120)	($31,120)	($31,120)	($31,120)	($31,120)
$106,266	$110,027	$65,903	($36,455)	($53,678)	($63,942)
$75,499	$68,887	$56,220	($26,976)	($26,012)	($15,928)
$0	$0	$0	$0	$0	$0
$339,136	$336,285	$279,494	$93,940	$77,681	$77,501
2,501	2,213	2,794	2,176	3,297	3,728
1,895	1,597	1,755	1,355	1,596	1,500
5,600	5,376	5,184	416	0	0
4,816	4,032	3,732	304	0	0

July	August	September	ANNUAL	*aMW*
744	744	720	8,760	
0.038	0.039	0.078	1.000	
2,115	2,171	4,341	55,658	*6.354*
0	0	0	0	*0.000*
N/A	N/A	N/A		
N/A	N/A	N/A		

ı-month shape.

3.0	3.0	6.0	56,568	*6.458*
3.0	3.0	6.0		
3.0	3.0	6.0		

hours in the month,
nth,
l in cell O50.

2,232	2,232	4,320	56,568	*6.458*

92,444	92,183	90,119	922,259	*105.281*
161.8	156.7	163.8	N/A	*N/A*
74,400	74,400	72,000	624,880	*71.333*
3,668	3,477	3,046	241,720	*27.594*
14,376	14,306	15,073	55,659	*6.354*

or additional calculations.
quirements.

0	0	0	0	*0.000*
0.000	0.000	0.000		
0	0	0	0	*0.000*
0.000	0.000	0.000		

l,
ıts will be added.

14,376	14,306	15,073	55,659	*6.354*

July	August	September	ANNUAL	*aMW*
74,400	74,400	72,000	624,880	*71.333*
42,751	42,751	41,372	503,359	*57.461*
31,649	31,649	30,628	121,521	*13.872*
74,400	74,400	72,000	624,880	*71.333*
-19,615	-18,575	-11,293	-21,078	*-2.406*
-26.364	-24.966	-15.685		
3,668	3,477	3,046	241,720	*27.594*
4.930	4.673	4.231		

[redacted]

[redacted]

2022	2022	2022		
7	8	9	Annual	aMW
400	432	400		
344	312	320		
92,444	92,183	90,119	922,259	*105.281*
161.786	156.652	163.785		
74,400	74,400	72,000	624,880	*71.333*
23,283	22,052	14,339	262,798	*30.000*
0	0	0	0	*0.000*
42,751	42,751	41,372	503,359	*57.461*
0.038	0.039	0.078	1.000	
0.538	0.581	0.556		
0.441	0.441	0.444		
0.089	0.084	0.051	1.000	
0.000	0.000	0.000		

July	August	September	ANNUAL	*aMW*
400	432	400	4912	
344	312	320	3848	
3,505,339	3,425,259	2,999,685	37,328,957	7,599.543
1,757,589	1,660,955	1,700,508	21,681,545	5,634.497

$1,998,417	$1,998,417	$1,998,417
($329,943)	($329,943)	($329,943)
$0	$0	$0
$36.83	$35.87	$28.15
$21.36	$26.85	$28.95
$0.00	$0.00	$0.00
0.09432%	0.09432%	0.09432%
0.09432%	0.09432%	0.09432%
-2,106	-1,935	-429
-626	-631	316

$188,491	$188,491	$188,491	$2,261,892	
($31,120)	($31,120)	($31,120)	($373,440)	
($77,573)	($69,398)	($12,085)	$13,753	
($13,366)	($16,932)	$9,151	$177,828	
$0	$0	$0	$0	
$66,432	$71,041	$154,437	$2,080,033	
3,306	3,231	2,829	35,209	7
1,658	1,567	1,604	20,450	5
1,200	1,296	2,400	31,680	6
1,032	936	1,920	24,888	6

6736

FY2022 Annual Net Requirement Calculations and Block Amounts

Prepared by BPA, July 28, 2021

Customer Name	PEND OREILLE PUD
BES Number	10306
Fiscal Year	2022
Hours	8,760

Step 1: Above-RHWM Load Calculation

(in annual aMW)

TRL Forecast 1/	145.895
NLSL Resources 2/	111.947
Existing Resources 3/	17.315
Gross Requirements 4/	16.633
RHWM 5/	24.581
Headroom 6/	7.948

Notes:
1/ TRL Forecast submitted by customer and approved by BPA (or BPA forecast if customer submitted forecast deemed not reasonable.)
2/ If NLSL see page 3 for additional calculations.
3/ Existing Resources are from Exhibit A and do not include resources serving NLSLs. Existing Resources can be removed in the second year of a Rate Period. See page 3 for removal of Existing Resource calculations.
4/ Gross Requirements is a preliminary Net Requirement calculation (preliminary since New Resources to serve Above-RHWM Load have not yet been added.)
5/ RHWM is from RHWM Process Outputs spreadsheet published on September 28, 2012, with updates for Provisional HWM if necessary.
6/ Headroom, if RHWM is greater than Gross Req, Above-RHWM Load, if RHWM is less than Gross Req.

Step 2: Annual Net Requirement Calcul

(in annual aMW)

Gross Requirements 7/
New Resources 8/
Net Requirements (NR) 9/

Tier 2 Block Amounts 10/

Notes:
7/ Gross Requirements from Step 1.
8/ New Resources equal Above-RHWM Load Amounts. If customer has New Specified Re T2 Block Amounts that sum to an amount gr the customer's Above-RHWM Load, then the to determine the order of resource removal/ per section 10 of the body of the Slice/Block
9/ Net Requirements equals Gross Requirem less New Resources.
10/ T2 Amounts based on customer's electio September 30, 2011 Notice Deadline. If T2 Amounts, then amounts go into section T2 Amounts plus T1 Amounts equal Net Requ

Monthly Net Requirement Calculations (with Block Amounts)

Prepared by BPA, July 28, 2021

	October	November	December
Hours	744	721	744

Step 4: Monthly Tier 1 Block Amount Calculations

Monthly Block Shaping Factors	0.034	0.149	0.135
Monthly T1 Block Amounts (MWh)	4,954	21,710	19,670
Monthly T2 Block Amounts (MWh)	0	0	0

13/ Exhibit C, Section 1.2.1.4 states that monthly Tier 1 Block amo Shaping Factors are in Exhibit C, Section 1.2.13

Diurnal Shaping Factors			
Monthly Block HLH Shaping Factors	N/A	N/A	N/A
Monthly Block LLH Shaping Factors	N/A	N/A	N/A

14/ Diurnal Shaping Factors per Exhibit C, Section 1.2.2.4 if custom

Total - T1 Block Amounts (MW/hr)	7.0	30.0	26.0
HLH - T1 Block Amounts (MW/hr)	7.0	30.0	26.0
LLH - T1 Block Amounts (MW/hr)	7.0	30.0	26.0

15/ Shaped within-month Block Amounts arre megawatt per hour and rounded to a whole number. Flat within-month Block Amounts rounded to a whole number. The diurnal amounts go into section 1

Tier 1 and Tier 2 Block Amounts (MWh)	5,208	21,630	19,344

Step 5: Net Requirement Calculations (and Unspecified Resources Amounts)

TRL Forecast Energy (MWh)	22,160	44,654	115,317
TRL Forecast Peak (MW)	132.6	149.7	157.1
NLSL Resources (MWh)	0	14,420	78,120
Existing Resources (MWh)	72,838	38,393	3,234
Monthly Gross Requirements (MWh)	-50,678	-8,159	33,963

16/ TRL Forecast submitted by customer and approved by BPA (or I Existing Resources from Exhibit A. Monthly Gross Requirements ec

New Specified Resources (MWh)	0	0	0
New Specified Resources (aMW)	0.000	0.000	0.000
Unspecified Resource Amts (MWh)	0	0	0
Unspecified Resource Amts (aMW)	0.000	0.000	0.000

17/ New Specified Resouces can be added to serve Above-RHWM then customer may do so but the amounts will be reduced to matc

Net Requirement Forecast (MWh)	(50,678)	(8,159)	33,963

18/ Net Requirements equals TRL less NLSLs, Existing Resources, N

NLSL Calculations (if applicable)

Prepared by BPA, July 28, 2021

	October	November	December
NLSL Forecast (MWh)	0	14,420	78,120
Resources Serving an NLSL (MWh)	42,751	41,372	42,751
Change to NLSL Resources (MWh)	-42,751	-26,952	35,369
Updated Resources Serving NLSL (MWh)	0	14,420	78,120

18/ Original resource amounts from Exhibit A. Update NLSL resou

Change to Existing Resources (MWh)	42,751	26,952	-18,869
Change to Existing Resources (aMW)	57.461	37.381	-25.362
Updated Total Existing Resources (MWh)	72,838	38,393	3,234
Updated Total Existing Resources (aMW)	97.901	53.250	4.347

19/ If customer has a single resource split amongst NLSL and non-N

Removal of Existing Resources in Second Year of Rate Period (if applicable)

Prepared by BPA, July 28, 2021

0 1st Year = 0, Second Year = 1

[redacted]

[redacted]

29/ Existing Resource Removal for Subsequent Fiscal Years of Each Rate Period (section 10.5 of the Slice/Block Contracts) is appli
that is less than the preliminary Net Requirement in the first year of a rate period. Preliminary Net Requirement means BPA's for

Customer Specific Data for Fiscal Year		2021	2021	2021
Prepared by BPA, July 28, 2021		10	11	12
RHWM	24.581	416	400	416
		328	321	328
BES Number	10306			
T2 Block Amounts	0			
TRL Forecast - Energy (MWh)		22,160	44,654	115,317
TRL Forecast - Peak (MW)		132.585	149.663	157.084
NLSL Forecast		0	14,420	78,120
Existing		30,087	11,441	22,103
New		0	0	0
NLSL		42,751	41,372	42,751
Block Shaping Factors		0.034	0.149	0.135
HLH Shaping Factors		0.559	0.555	0.559
LLH Shaping Factors		0.419	0.445	0.462
[redacted]				
Existing Resource Removal Shape		0.119	0.039	0.084
New Resource Removal Shape		0.000	0.000	0.000

Customer Charges and Load Shaping Charges
Prepared by BPA, July 28, 2021

	October	November	December
HLH by Month	416	400	416
LLH by Month	328	321	328
RHWM T1 System Capability HLH (MWh)	2,920,790	3,537,945	3,223,873
RHWM T1 System Capability LLH (MWh)	1,633,134	2,227,488	2,419,335

BP-22 Final Proposal Rates			
Composite Rate (TOCA) ($$/%)	$1,998,417	$1,998,417	$1,998,417
Non-Slice Rate ($$/%)	($329,943)	($329,943)	($329,943)
Slice Rate ($$/%)	$0	$0	$0
Load Shaping - HLH ($$/MWh)	$29.92	$31.71	$38.76
Load Shaping - LLH ($$/MWh)	$28.27	$29.14	$32.05
Financial Reserves Policy Surcharge	$0.00	$0.00	$0.00
Financial Reserves Policy Amount	**$0.0**	$-Millions	
Financial Reserves Policy Surcharge	$0.00		
FY2022 Billing Determinants			
TOCA %	0.24691%	0.24691%	0.24691%
Non-Slice TOCA %	0.24691%	0.24691%	0.24691%
Load Shaping - HLH (MWh)	-4,300	3,264	2,856
Load Shaping - LLH (MWh)	-1,736	4,130	2,554
FY2022 Tier 1 Power Charges without Low Density Discounts or Irrigation Rate Discounts			

Composite Charge	$493,429	$493,429	$493,429
Non-Slice Charge	($81,466)	($81,466)	($81,466)
Load Shaping - HLH	($128,648)	$103,516	$110,696
Load Shaping - LLH	($49,087)	$120,351	$81,869
Financial Reserves Policy Surcharge	$0	$0	$0
Total	$234,228	$635,830	$604,528

Steps in calculating Load Shaping Billing Determinants			
System Shaped Load HLH (MWh)	7,212	8,736	7,960
System Shaped Load LLH (MWh)	4,032	5,500	5,974
Actual Tier 1 Load HLH (MWh)	2,912	12,000	10,816
Actual Tier 1 Load LLH (MWh)	2,296	9,630	8,528

ation		Step 3: Critical Slice & Block Amounts (with TOCAs)	
		(in annual aMW)	
16.633		Tier 2 Block Amounts	0.000
0.000		Tier 1 Block Amounts 11/	16.633
16.633		Net Requirements	16.633
0.000		TOCAs 12/	
		Sum of RHWM	6736.361
less T2		Non-Slice TOCA	0.24691%
sources and		TOCA	0.24691%
eater than			
customer needs		Notes:	
T2 remarketing		11/ Tier 1 Block Amounts equal Net Requirement less Tier 2 Amounts.	
Contract.		Annual Tier 1 Block Amounts (in aMW) go into section 1.1 of Exhibit C.	
ent Amounts		12/ TOCA equals minimum of Net Requirement or RHWM,	
n made by the		divided by the Sum of RHWM. Sum of RHWM in cell J18.	
2.5 of Exhibit C.		Non-Slice TOCA equals TOCA.	
uirements.			

January	February	March	April	May	June
744	672	743	720	744	720
0.190	0.168	0.159	0.010	0.000	0.000
27,684	24,478	23,167	1,457	0	0
0	0	0	0	0	0

unts in MWh are equal to the Monthly Shaping Factors * Annual Tier 1 Block Amounts in aMW (see Step 3) * Hours in Fiscal Year

N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A

er elected Tier 1 Block within-month shaped to their Net Requirement. Not applicable to customers who elected flat Tier 1 block within

37.0	36.0	31.0	2.0	0.0	0.0
37.0	36.0	31.0	2.0	0.0	0.0
37.0	36.0	31.0	2.0	0.0	0.0

amounts equal to the monthly MWh amounts calculated per 1.2.14 of Exhibit C multiplied by the diurnal shaping factor, divided by the
are megawatt per hour amounts equal to the monthly MWh amounts calculated per 1.2.14 of Exhibit C divided by the hours in the mc
1.3 of Exhibit C. Due to rounding the total megawatt-hours established in cell O55 will be different than the megawatt-hours calculatec

27,528	24,192	23,033	1,440	0	0

113,973	100,220	134,983	126,862	126,632	121,341
200.4	190.8	183.8	175.8	171.9	159.6
78,120	70,560	106,992	103,680	107,136	103,680
3,073	2,574	2,846	3,802	8,002	6,729
32,780	27,086	25,145	19,380	11,494	10,932

BPA forecast if customer forecast not approved.) TRL Forecast (energy and peak) goes into section 1.1 of Exhibit A. If NLSL see page 3 f
uals TRL less NLSLs and Exisiting Resources. Need to add New Resources if customer has Above-RHWM Load before calculating Net Re

0	0	0	0	0	0
0.000	0.000	0.000	0.000	0.000	0.000
0	0	0	0	0	0
0.000	0.000	0.000	0.000	0.000	0.000

Load. If customer must dedicate New Specified Resources (ie Hydro Resources) and does not have enough (or any) Above-RHWM Loac
h the Above-RHWM Load. If New Specified Resources were not added to serve Above-RHWM Load, then Unspecified Resource Amour

32,780	27,086	25,145	19,380	11,494	10,932

ew Resources (Specified and Unspecified), and plus T2 Amounts. Net Requirements goes into section 1.2 of Exhibit A.

Revised: No Oct Load, Mill starts in December, Crypto ramp up starting Nov

January	February	March	April	May	June
78,120	70,560	106,992	103,680	107,136	103,680
42,751	38,614	42,751	41,372	42,751	41,372
35,369	31,946	64,241	62,308	64,385	62,308
78,120	70,560	106,992	103,680	107,136	103,680

rces in Exhibit A to match NLSL forecast.

-8,158	-4,344	-4,194	-29,566	-34,850	-31,355
-10.965	-6.464	-5.645	-41.064	-46.841	-43.549
3,073	2,574	2,846	3,802	8,002	6,729
4.130	3.830	3.830	5.281	10.755	9.346

NLSL load, then balance the single resource amounts to match the NLSL forecast keeping the total dedicated amounts the same.

[redacted]

[redacted]

cable for customers that have Existing Resources and have a Preliminary Net Requirement in the second year of a Rate Period
ecast of Customer's Net Requirement for each Fiscal Year prior to the removal of any resources in accordance with section 10.

2022	2022	2022	2022	2022	2022
1	2	3	4	5	6
400	384	432	416	400	416
344	288	311	304	344	304
113,973	100,220	134,983	126,862	126,632	121,341
200.391	190.756	183.772	175.781	171.924	159.600
78,120	70,560	106,992	103,680	107,136	103,680
11,231	6,918	7,040	33,368	42,852	38,084
0	0	0	0	0	0
42,751	38,614	42,751	41,372	42,751	41,372
0.190	0.168	0.159	0.010	0.000	0.000
0.538	0.571	0.581	0.578	0.538	0.578
0.441	0.425	0.440	0.422	0.462	0.422
0.037	0.020	0.019	0.133	0.173	0.154
0.000	0.000	0.000	0.000	0.000	0.000

January	February	March	April	May	June
400	384	432	416	400	416
344	288	311	304	344	304
2,651,580	2,346,690	2,961,839	2,307,314	3,495,710	3,952,933
2,009,470	1,693,144	1,860,906	1,436,906	1,691,935	1,590,174
$1,998,417	$1,998,417	$1,998,417	$1,998,417	$1,998,417	$1,998,417
($329,943)	($329,943)	($329,943)	($329,943)	($329,943)	($329,943)
$0	$0	$0	$0	$0	$0
$34.29	$34.79	$27.57	$20.71	$16.28	$17.15
$25.85	$28.29	$28.44	$25.66	$16.30	$10.62
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
0.24691%	0.24691%	0.24691%	0.24691%	0.24691%	0.24691%
0.24691%	0.24691%	0.24691%	0.24691%	0.24691%	0.24691%
8,253	8,030	6,079	-4,865	-8,631	-9,760
7,766	6,187	5,046	-2,940	-4,178	-3,926

$493,429	$493,429	$493,429	$493,429	$493,429	$493,429
($81,466)	($81,466)	($81,466)	($81,466)	($81,466)	($81,466)
$282,995	$279,356	$167,596	($100,754)	($140,517)	($167,387)
$200,762	$175,043	$143,515	($75,437)	($68,094)	($41,697)
$0	$0	$0	$0	$0	$0
$895,720	$866,362	$723,074	$235,772	$203,352	$202,879
6,547	5,794	7,313	5,697	8,631	9,760
4,962	4,181	4,595	3,548	4,178	3,926
14,800	13,824	13,392	832	0	0
12,728	10,368	9,641	608	0	0

July	August	September	ANNUAL	*aMW*
744	744	720	8,760	
0.038	0.039	0.078	1.000	
5,537	5,682	11,365	145,704	*16.633*
0	0	0	0	*0.000*
N/A	N/A	N/A		
N/A	N/A	N/A		

ı-month shape.

7.0	8.0	16.0	145,055	*16.559*
7.0	8.0	16.0		
7.0	8.0	16.0		

hours in the month,
nth,
l in cell O50.

5,208	5,952	11,520	145,055	*16.559*

125,180	124,919	121,799	1,278,039	*145.895*
161.8	156.7	163.8	N/A	*N/A*
107,136	107,136	103,680	980,660	*111.947*
3,668	3,477	3,046	151,682	*17.315*
14,376	14,306	15,073	145,697	*16.633*

or additional calculations.
quirements.

0	0	0	0	*0.000*
0.000	0.000	0.000		
0	0	0	0	*0.000*
0.000	0.000	0.000		

l,
ıts will be added.

14,376	14,306	15,073	145,697	*16.633*

July	August	September	ANNUAL	*aMW*
107,136	107,136	103,680	980,660	*111.947*
42,751	42,751	41,372	503,359	*57.461*
64,385	64,385	62,308	477,301	*54.486*
107,136	107,136	103,680	980,660	*111.947*
-19,615	-18,575	-11,293	-111,116	*-12.684*
-26.364	-24.966	-15.685		
3,668	3,477	3,046	151,682	*17.315*
4.930	4.673	4.231		

[redacted]

2022	2022	2022		
7	8	9	Annual	aMW
400	432	400		
344	312	320		
125,180	124,919	121,799	1,278,039	*145.895*
161.786	156.652	163.785		
107,136	107,136	103,680	980,660	*111.947*
23,283	22,052	14,339	262,798	*30.000*
0	0	0	0	*0.000*
42,751	42,751	41,372	503,359	*57.461*
0.038	0.039	0.078	1.000	
0.538	0.581	0.556		
0.441	0.441	0.444		
0.089	0.084	0.051	1.000	
0.000	0.000	0.000		

July	August	September	ANNUAL	*aMW*
400	432	400	4912	
344	312	320	3848	
3,505,339	3,425,259	2,999,685	37,328,957	7,599.543
1,757,589	1,660,955	1,700,508	21,681,545	5,634.497

$1,998,417	$1,998,417	$1,998,417
($329,943)	($329,943)	($329,943)
$0	$0	$0
$36.83	$35.87	$28.15
$21.36	$26.85	$28.95
$0.00	$0.00	$0.00
0.24691%	0.24691%	0.24691%
0.24691%	0.24691%	0.24691%
-5,855	-5,001	-1,007
-1,932	-1,605	921

$493,429	$493,429	$493,429	$5,921,148	
($81,466)	($81,466)	($81,466)	($977,592)	
($215,641)	($179,397)	($28,334)	($16,519)	
($41,260)	($43,096)	$26,671	$429,540	
$0	$0	$0	$0	
$155,062	$189,470	$410,300	$5,356,577	
8,655	8,457	7,407	92,169	19
4,340	4,101	4,199	53,534	14
2,800	3,456	6,400	81,232	17
2,408	2,496	5,120	63,823	17

6736

FY2022 Annual Net Requirement Calculations and Block Amounts

Prepared by BPA, July 28, 2021

Customer Name	**PEND OREILLE PUD**
BES Number	10306
Fiscal Year	2022
Hours	8,760

Step 1: Above-RHWM Load Calculation

(in annual aMW)

TRL Forecast 1/	152.891
NLSL Resources 2/	118.943
Existing Resources 3/	13.264
Gross Requirements 4/	20.684
RHWM 5/	24.581
Headroom 6/	3.897

Notes:
1/ TRL Forecast submitted by customer and approved by BPA (or BPA forecast if customer submitted forecast deemed not reasonable.)
2/ If NLSL see page 3 for additional calculations.
3/ Existing Resources are from Exhibit A and do not include resources serving NLSLs. Existing Resources can be removed in the second year of a Rate Period. See page 3 for removal of Existing Resource calculations.
4/ Gross Requirements is a preliminary Net Requirement calculation (preliminary since New Resources to serve Above-RHWM Load have not yet been added.)
5/ RHWM is from RHWM Process Outputs spreadsheet published on September 28, 2012, with updates for Provisional HWM if necessary.
6/ Headroom, if RHWM is greater than Gross Req, Above-RHWM Load, if RHWM is less than Gross Req.

Step 2: Annual Net Requirement Calcul

(in annual aMW)

Gross Requirements 7/
New Resources 8/
Net Requirements (NR) 9/

Tier 2 Block Amounts 10/

Notes:
7/ Gross Requirements from Step 1.
8/ New Resources equal Above-RHWM Load Amounts. If customer has New Specified Re T2 Block Amounts that sum to an amount gr the customer's Above-RHWM Load, then the to determine the order of resource removal/ per section 10 of the body of the Slice/Block
9/ Net Requirements equals Gross Requirem less New Resources.
10/ T2 Amounts based on customer's electio September 30, 2011 Notice Deadline. If T2 Amounts, then amounts go into section T2 Amounts plus T1 Amounts equal Net Requ

Monthly Net Requirement Calculations (with Block Amounts)

Prepared by BPA, July 28, 2021

	October	November	December
Hours	744	721	744

Step 4: Monthly Tier 1 Block Amount Calculations

Monthly Block Shaping Factors	0.034	0.149	0.135
Monthly T1 Block Amounts (MWh)	6,160	26,997	24,461
Monthly T2 Block Amounts (MWh)	0	0	0

13/ Exhibit C, Section 1.2.1.4 states that monthly Tier 1 Block amo Shaping Factors are in Exhibit C, Section 1.2.13

Diurnal Shaping Factors			
Monthly Block HLH Shaping Factors	N/A	N/A	N/A
Monthly Block LLH Shaping Factors	N/A	N/A	N/A

14/ Diurnal Shaping Factors per Exhibit C, Section 1.2.2.4 if custom

Total - T1 Block Amounts (MW/hr)	8.0	37.0	33.0
HLH - T1 Block Amounts (MW/hr)	8.0	37.0	33.0
LLH - T1 Block Amounts (MW/hr)	8.0	37.0	33.0

15/ Shaped within-month Block Amounts arre megawatt per hour and rounded to a whole number. Flat within-month Block Amounts rounded to a whole number. The diurnal amounts go into section 1

Tier 1 and Tier 2 Block Amounts (MWh)	5,952	26,677	24,552

Step 5: Net Requirement Calculations (and Unspecified Resources Amounts)

TRL Forecast Energy (MWh)	22,160	105,939	115,317
TRL Forecast Peak (MW)	132.6	149.7	157.1
NLSL Resources (MWh)	0	75,705	78,120
Existing Resources (MWh)	72,838	2,905	3,234
Monthly Gross Requirements (MWh)	-50,678	27,329	33,963

16/ TRL Forecast submitted by customer and approved by BPA (or I Existing Resources from Exhibit A. Monthly Gross Requirements ec

New Specified Resources (MWh)	0	0	0
New Specified Resources (aMW)	0.000	0.000	0.000
Unspecified Resource Amts (MWh)	0	0	0
Unspecified Resource Amts (aMW)	0.000	0.000	0.000

17/ New Specified Resouces can be added to serve Above-RHWM then customer may do so but the amounts will be reduced to matc

Net Requirement Forecast (MWh)	(50,678)	27,329	33,963

18/ Net Requirements equals TRL less NLSLs, Existing Resources, N

NLSL Calculations (if applicable)

Prepared by BPA, July 28, 2021

	October	November	December
NLSL Forecast (MWh)	0	75,705	78,120
Resources Serving an NLSL (MWh)	42,751	41,372	42,751
Change to NLSL Resources (MWh)	-42,751	34,333	35,369
Updated Resources Serving NLSL (MWh)	0	75,705	78,120

18/ Original resource amounts from Exhibit A. Update NLSL resou

Change to Existing Resources (MWh)	42,751	-8,536	-18,869
Change to Existing Resources (aMW)	57.461	-11.839	-25.362
Updated Total Existing Resources (MWh)	72,838	2,905	3,234
Updated Total Existing Resources (aMW)	97.901	4.029	4.347

19/ If customer has a single resource split amongst NLSL and non-N

Removal of Existing Resources in Second Year of Rate Period (if applicable)

Prepared by BPA, July 28, 2021

0 1st Year = 0, Second Year = 1

[redacted]

[redacted]

29/ Existing Resource Removal for Subsequent Fiscal Years of Each Rate Period (section 10.5 of the Slice/Block Contracts) is appli
that is less than the preliminary Net Requirement in the first year of a rate period. Preliminary Net Requirement means BPA's for

Customer Specific Data for Fiscal Year		2021	2021	2021
Prepared by BPA, July 28, 2021		10	11	12
RHWM	24.581	416	400	416
		328	321	328
BES Number	10306			
T2 Block Amounts	0			
TRL Forecast - Energy (MWh)		22,160	105,939	115,317
TRL Forecast - Peak (MW)		132.585	149.663	157.084
NLSL Forecast		0	75,705	78,120
Existing		30,087	11,441	22,103
New		0	0	0
NLSL		42,751	41,372	42,751
Block Shaping Factors		0.034	0.149	0.135
HLH Shaping Factors		0.559	0.555	0.559
LLH Shaping Factors		0.419	0.445	0.462
[redacted]				
Existing Resource Removal Shape		0.119	0.039	0.084
New Resource Removal Shape		0.000	0.000	0.000

Customer Charges and Load Shaping Charges
Prepared by BPA, July 28, 2021

	October	November	December
HLH by Month	416	400	416
LLH by Month	328	321	328
RHWM T1 System Capability HLH (MWh)	2,920,790	3,537,945	3,223,873
RHWM T1 System Capability LLH (MWh)	1,633,134	2,227,488	2,419,335

BP-22 Final Proposal Rates			
Composite Rate (TOCA) ($$/%)	$1,998,417	$1,998,417	$1,998,417
Non-Slice Rate ($$/%)	($329,943)	($329,943)	($329,943)
Slice Rate ($$/%)	$0	$0	$0
Load Shaping - HLH ($$/MWh)	$29.92	$31.71	$38.76
Load Shaping - LLH ($$/MWh)	$28.27	$29.14	$32.05
Financial Reserves Policy Surcharge	$0.00	$0.00	$0.00
Financial Reserves Policy Amount	**$0.0**	$-Millions	
Financial Reserves Policy Surcharge	$0.00		
FY2022 Billing Determinants			
TOCA %	0.30705%	0.30705%	0.30705%
Non-Slice TOCA %	0.30705%	0.30705%	0.30705%
Load Shaping - HLH (MWh)	-5,640	3,937	3,829
Load Shaping - LLH (MWh)	-2,391	5,037	3,395
FY2022 Tier 1 Power Charges without Low Density Discounts or Irrigation Rate Discounts			

Composite Charge	$613,614	$613,614	$613,614
Non-Slice Charge	($101,309)	($101,309)	($101,309)
Load Shaping - HLH	($168,757)	$124,834	$148,416
Load Shaping - LLH	($67,581)	$146,793	$108,824
Financial Reserves Policy Surcharge	$0	$0	$0
Total	$275,967	$783,932	$769,545

Steps in calculating Load Shaping Billing Determinants			
System Shaped Load HLH (MWh)	8,968	10,863	9,899
System Shaped Load LLH (MWh)	5,015	6,840	7,429
Actual Tier 1 Load HLH (MWh)	3,328	14,800	13,728
Actual Tier 1 Load LLH (MWh)	2,624	11,877	10,824

ation		Step 3: Critical Slice & Block Amounts (with TOCAs) *(in annual aMW)*	
20.684		Tier 2 Block Amounts	0.000
0.000		Tier 1 Block Amounts 11/	20.684
20.684		Net Requirements	20.684
0.000		TOCAs 12/	
		Sum of RHWM	6736.361
less T2		Non-Slice TOCA	0.30705%
sources and		TOCA	0.30705%
eater than			
customer needs		Notes:	
T2 remarketing		11/ Tier 1 Block Amounts equal Net Requirement less Tier 2 Amounts.	
Contract.		Annual Tier 1 Block Amounts (in aMW) go into section 1.1 of Exhibit C.	
ent Amounts		12/ TOCA equals minimum of Net Requirement or RHWM,	
n made by the		divided by the Sum of RHWM. Sum of RHWM in cell J18.	
2.5 of Exhibit C.		Non-Slice TOCA equals TOCA.	
uirements.			

January	February	March	April	May	June
744	672	743	720	744	720
0.190	0.168	0.159	0.010	0.000	0.000
34,426	30,440	28,809	1,812	0	0
0	0	0	0	0	0

unts in MWh are equal to the Monthly Shaping Factors * Annual Tier 1 Block Amounts in aMW (see Step 3) * Hours in Fiscal Year

N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A

er elected Tier 1 Block within-month shaped to their Net Requirement. Not applicable to customers who elected flat Tier 1 block within

46.0	45.0	39.0	3.0	0.0	0.0
46.0	45.0	39.0	3.0	0.0	0.0
46.0	45.0	39.0	3.0	0.0	0.0

amounts equal to the monthly MWh amounts calculated per 1.2.14 of Exhibit C multiplied by the diurnal shaping factor, divided by the
are megawatt per hour amounts equal to the monthly MWh amounts calculated per 1.2.14 of Exhibit C divided by the hours in the mc
1.3 of Exhibit C. Due to rounding the total megawatt-hours established in cell O55 will be different than the megawatt-hours calculatec

34,224	30,240	28,977	2,160	0	0

113,973	100,220	134,983	126,862	126,632	121,341
200.4	190.8	183.8	175.8	171.9	159.6
78,120	70,560	106,992	103,680	107,136	103,680
3,073	2,574	2,846	3,802	8,002	6,729
32,780	27,086	25,145	19,380	11,494	10,932

BPA forecast if customer forecast not approved.) TRL Forecast (energy and peak) goes into section 1.1 of Exhibit A. If NLSL see page 3 f
uals TRL less NLSLs and Exisiting Resources. Need to add New Resources if customer has Above-RHWM Load before calculating Net Re

0	0	0	0	0	0
0.000	0.000	0.000	0.000	0.000	0.000
0	0	0	0	0	0
0.000	0.000	0.000	0.000	0.000	0.000

Load. If customer must dedicate New Specified Resources (ie Hydro Resources) and does not have enough (or any) Above-RHWM Loac
h the Above-RHWM Load. If New Specified Resources were not added to serve Above-RHWM Load, then Unspecified Resource Amour

32,780	27,086	25,145	19,380	11,494	10,932

ew Resources (Specified and Unspecified), and plus T2 Amounts. Net Requirements goes into section 1.2 of Exhibit A.

Revised: No Oct Load, Mill starts in Nov, Crypto ramp up starting Nov

January	February	March	April	May	June
78,120	70,560	106,992	103,680	107,136	103,680
42,751	38,614	42,751	41,372	42,751	41,372
35,369	31,946	64,241	62,308	64,385	62,308
78,120	70,560	106,992	103,680	107,136	103,680

rces in Exhibit A to match NLSL forecast.

-8,158	-4,344	-4,194	-29,566	-34,850	-31,355
-10.965	-6.464	-5.645	-41.064	-46.841	-43.549
3,073	2,574	2,846	3,802	8,002	6,729
4.130	3.830	3.830	5.281	10.755	9.346

NLSL load, then balance the single resource amounts to match the NLSL forecast keeping the total dedicated amounts the same.

[redacted]

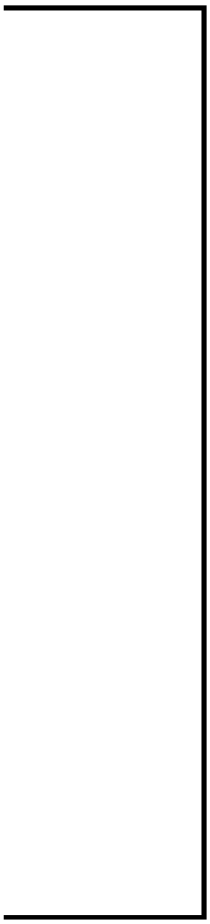
[redacted]

cable for customers that have Existing Resources and have a Preliminary Net Requirement in the second year of a Rate Period
ecast of Customer's Net Requirement for each Fiscal Year prior to the removal of any resources in accordance with section 10.

2022	2022	2022	2022	2022	2022
1	2	3	4	5	6
400	384	432	416	400	416
344	288	311	304	344	304
113,973	100,220	134,983	126,862	126,632	121,341
200.391	190.756	183.772	175.781	171.924	159.600
78,120	70,560	106,992	103,680	107,136	103,680
11,231	6,918	7,040	33,368	42,852	38,084
0	0	0	0	0	0
42,751	38,614	42,751	41,372	42,751	41,372
0.190	0.168	0.159	0.010	0.000	0.000
0.538	0.571	0.581	0.578	0.538	0.578
0.441	0.425	0.440	0.422	0.462	0.422
0.037	0.020	0.019	0.133	0.173	0.154
0.000	0.000	0.000	0.000	0.000	0.000

January	February	March	April	May	June
400	384	432	416	400	416
344	288	311	304	344	304
2,651,580	2,346,690	2,961,839	2,307,314	3,495,710	3,952,933
2,009,470	1,693,144	1,860,906	1,436,906	1,691,935	1,590,174
$1,998,417	$1,998,417	$1,998,417	$1,998,417	$1,998,417	$1,998,417
($329,943)	($329,943)	($329,943)	($329,943)	($329,943)	($329,943)
$0	$0	$0	$0	$0	$0
$34.29	$34.79	$27.57	$20.71	$16.28	$17.15
$25.85	$28.29	$28.44	$25.66	$16.30	$10.62
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
0.30705%	0.30705%	0.30705%	0.30705%	0.30705%	0.30705%
0.30705%	0.30705%	0.30705%	0.30705%	0.30705%	0.30705%
10,258	10,074	7,754	-5,837	-10,734	-12,137
9,654	7,761	6,415	-3,500	-5,195	-4,883

$613,614	$613,614	$613,614	$613,614	$613,614	$613,614
($101,309)	($101,309)	($101,309)	($101,309)	($101,309)	($101,309)
$351,758	$350,491	$213,769	($120,876)	($174,743)	($208,158)
$249,554	$219,564	$182,445	($89,811)	($84,680)	($51,854)
$0	$0	$0	$0	$0	$0
$1,113,617	$1,082,360	$908,519	$301,618	$252,882	$252,293
8,142	7,206	9,094	7,085	10,734	12,137
6,170	5,199	5,714	4,412	5,195	4,883
18,400	17,280	16,848	1,248	0	0
15,824	12,960	12,129	912	0	0



July	August	September	ANNUAL	*aMW*
744	744	720	8,760	
0.038	0.039	0.078	1.000	
6,885	7,066	14,133	181,191	*20.684*
0	0	0	0	*0.000*
N/A	N/A	N/A		
N/A	N/A	N/A		

ı-month shape.

9.0	9.0	20.0	180,574	*20.613*
9.0	9.0	20.0		
9.0	9.0	20.0		

hours in the month,
nth,
l in cell O50.

6,696	6,696	14,400	180,574	*20.613*

125,180	124,919	121,799	1,339,324	*152.891*
161.8	156.7	163.8	N/A	*N/A*
107,136	107,136	103,680	1,041,945	*118.943*
3,668	3,477	3,046	116,194	*13.264*
14,376	14,306	15,073	181,185	*20.684*

or additional calculations.
quirements.

0	0	0	0	*0.000*
0.000	0.000	0.000		
0	0	0	0	*0.000*
0.000	0.000	0.000		

l,
ıts will be added.

14,376	14,306	15,073	181,185	*20.684*

July	August	September	ANNUAL	*aMW*
107,136	107,136	103,680	1,041,945	*118.943*
42,751	42,751	41,372	503,359	*57.461*
64,385	64,385	62,308	538,586	*61.482*
107,136	107,136	103,680	1,041,945	*118.943*
-19,615	-18,575	-11,293	-146,604	*-16.736*
-26.364	-24.966	-15.685		
3,668	3,477	3,046	116,194	*13.264*
4.930	4.673	4.231		

[redacted]

2022	2022	2022		
7	8	9	Annual	aMW
400	432	400		
344	312	320		
125,180	124,919	121,799	1,339,324	*152.891*
161.786	156.652	163.785		
107,136	107,136	103,680	1,041,945	*118.943*
23,283	22,052	14,339	262,798	*30.000*
0	0	0	0	*0.000*
42,751	42,751	41,372	503,359	*57.461*
0.038	0.039	0.078	1.000	
0.538	0.581	0.556		
0.441	0.441	0.444		
0.089	0.084	0.051	1.000	
0.000	0.000	0.000		

July	August	September	ANNUAL	*aMW*
400	432	400	4912	
344	312	320	3848	
3,505,339	3,425,259	2,999,685	37,328,957	7,599.543
1,757,589	1,660,955	1,700,508	21,681,545	5,634.497

$1,998,417	$1,998,417	$1,998,417
($329,943)	($329,943)	($329,943)
$0	$0	$0
$36.83	$35.87	$28.15
$21.36	$26.85	$28.95
$0.00	$0.00	$0.00
0.30705%	0.30705%	0.30705%
0.30705%	0.30705%	0.30705%
-7,163	-6,629	-1,211
-2,301	-2,292	1,179

$613,614	$613,614	$613,614	$7,363,368	
($101,309)	($101,309)	($101,309)	($1,215,708)	
($263,819)	($237,791)	($34,077)	($18,953)	
($49,142)	($61,539)	$34,120	$536,693	
$0	$0	$0	$0	
$199,344	$212,975	$512,348	$6,665,400	
10,763	10,517	9,211	114,619	23
5,397	5,100	5,221	66,573	17
3,600	3,888	8,000	101,120	21
3,096	2,808	6,400	79,454	21

6736

FY2022 Annual Net Requirement Calculations and Block Amounts

Prepared by BPA, July 28, 2021

Customer Name	**PEND OREILLE PUD**
BES Number	10306
Fiscal Year	2022
Hours	8,760

Step 1: Above-RHWM Load Calculation

(in annual aMW)

TRL Forecast 1/	139.851
NLSL Resources 2/	105.904
Existing Resources 3/	7.403
Gross Requirements 4/	26.544
RHWM 5/	24.581
Above-RHWM Load 6/	1.963

Notes:
1/ TRL Forecast submitted by customer and approved by BPA (or BPA forecast if customer submitted forecast deemed not reasonable.)
2/ If NLSL see page 3 for additional calculations.
3/ Existing Resources are from Exhibit A and do not include resources serving NLSLs. Existing Resources can be removed in the second year of a Rate Period. See page 3 for removal of Existing Resource calculations.
4/ Gross Requirements is a preliminary Net Requirement calculation (preliminary since New Resources to serve Above-RHWM Load have not yet been added.)
5/ RHWM is from RHWM Process Outputs spreadsheet published on September 28, 2012, with updates for Provisional HWM if necessary.
6/ Headroom, if RHWM is greater than Gross Req, Above-RHWM Load, if RHWM is less than Gross Req.

Step 2: Annual Net Requirement Calculation

(in annual aMW)

Gross Requirements 7/	26.544
New Resources 8/	1.963
Net Requirements (NR) 9/	24.581
Tier 2 Block Amounts 10/	0.000

Notes:
7/ Gross Requirements from Step 1.
8/ New Resources equal Above-RHWM Load less T2 Amounts. If customer has New Specified Resources and T2 Block Amounts that sum to an amount greater than the customer's Above-RHWM Load, then the customer needs to determine the order of resource removal/T2 remarketing per section 10 of the body of the Slice/Block Contract.
9/ Net Requirements equals Gross Requirement Amounts less New Resources.
10/ T2 Amounts based on customer's election made by the September 30, 2011 Notice Deadline.
If T2 Amounts, then amounts go into section 2.5 of Exhibit C.
T2 Amounts plus T1 Amounts equal Net Requirements.

Monthly Net Requirement Calculations (with Block Amounts)

Prepared by BPA, July 28, 2021

	October	November	December	January	February
Hours	744	721	744	744	672
Step 4: Monthly Tier 1 Block Amount Calculations					
Monthly Block Shaping Factors	0.034	0.149	0.135	0.190	0.168
Monthly T1 Block Amounts (MWh)	7,321	32,084	29,069	40,913	36,175
Monthly T2 Block Amounts (MWh)	0	0	0	0	0
13/ Exhibit C, Section 1.2.1.4 states that monthly Tier 1 Block amounts in MWh are equal to the Monthly Shapin Shaping Factors are in Exhibit C, Section 1.2.13					
Diurnal Shaping Factors					
Monthly Block HLH Shaping Factors	N/A	N/A	N/A	N/A	N/A
Monthly Block LLH Shaping Factors	N/A	N/A	N/A	N/A	N/A
14/ Diurnal Shaping Factors per Exhibit C, Section 1.2.2.4 if customer elected Tier 1 Block within-month shaped t					
Total - T1 Block Amounts (MW/hr)	10.0	44.0	39.0	55.0	54.0
HLH - T1 Block Amounts (MW/hr)	10.0	44.0	39.0	55.0	54.0
LLH - T1 Block Amounts (MW/hr)	10.0	44.0	39.0	55.0	54.0
15/ Shaped within-month Block Amounts arre megawatt per hour amounts equal to the monthly MWh amounts and rounded to a whole number. Flat within-month Block Amounts are megawatt per hour amounts equal to the rounded to a whole number. The diurnal amounts go into section 1.3 of Exhibit C. Due to rounding the total me					
Tier 1 and Tier 2 Block Amounts (MWh)	7,440	31,724	29,016	40,920	36,288
Step 5: Net Requirement Calculations (and Unspecified Resources Amounts)					
TRL Forecast Energy (MWh)	80,313	86,590	95,350	121,605	107,113
TRL Forecast Peak (MW)	132.6	149.7	157.1	200.4	190.8
NLSL Resources (MWh)	58,153	56,356	58,153	85,752	77,453
Existing Resources (MWh)	14,685	2,905	10,042	3,073	2,574
Monthly Gross Requirements (MWh)	7,475	27,329	27,155	32,780	27,086
16/ TRL Forecast submitted by customer and approved by BPA (or BPA forecast if customer forecast not approve Existing Resources from Exhibit A. Monthly Gross Requirements equals TRL less NLSLs and Exisiting Resources. N					
New Specified Resources (MWh)	0	0	0	0	0
New Specified Resources (aMW)	0.000	0.000	0.000	0.000	0.000
Unspecified Resource Amts (MWh)	1,460	1,415	1,460	1,460	1,319
Unspecified Resource Amts (aMW)	1.963	1.963	1.963	1.963	1.963

17/ New Specified Resouces can be added to serve Above-RHWM Load. If customer must dedicate New Specifie
then customer may do so but the amounts will be reduced to match the Above-RHWM Load. If New Specified Re

Net Requirement Forecast (MWh)	6,015	25,914	25,695	31,320	25,767

18/ Net Requirements equals TRL less NLSLs, Existing Resources, New Resources (Specified and Unspecified), an

NLSL Calculations (if applicable)

Prepared by BPA, July 28, 2021

	October	November	December	January	February
NLSL Forecast (MWh)	58,153	56,356	58,153	85,752	77,453
Resources Serving an NLSL (MWh)	42,751	41,372	42,751	42,751	38,614
Change to NLSL Resources (MWh)	15,402	14,984	15,402	43,001	38,839
Updated Resources Serving NLSL (MWh)	58,153	56,356	58,153	85,752	77,453

18/ Original resource amounts from Exhibit A. Update NLSL resources in Exhibit A to match NLSL forecast.

Change to Existing Resources (MWh)	-15,402	-8,536	-12,061	-8,158	-4,344
Change to Existing Resources (aMW)	-20.702	-11.839	-16.212	-10.965	-6.464
Updated Total Existing Resources (MWh)	14,685	2,905	10,042	3,073	2,574
Updated Total Existing Resources (aMW)	19.737	4.029	13.497	4.130	3.830

19/ If customer has a single resource split amongst NLSL and non-NLSL load, then balance the single resource an

Removal of Existing Resources in Second Year of Rate Period (if applicable)

Prepared by BPA, July 28, 2021 — 0 1st Year = 0, Second Year = 1

[redacted]

29/ Existing Resource Removal for Subsequent Fiscal Years of Each Rate Period (section 10.5 of the Slice/Block Contracts) is applicable for customers that have Existing Resour
that is less than the preliminary Net Requirement in the first year of a rate period. Preliminary Net Requirement means BPA's forecast of Customer's Net Requirement for each

Customer Specific Data for Fiscal Year	2021	2021	2021	2022	2022

Prepared by BPA, July 28, 2021		10	11	12	1	2
RHWM	24.581	416	400	416	400	384
		328	321	328	344	288
BES Number	10306					
T2 Block Amounts	0					
TRL Forecast - Energy (MWh)		80,313	86,590	95,350	121,605	107,113
TRL Forecast - Peak (MW)		132.585	149.663	157.084	200.391	190.756
NLSL Forecast		58,153	56,356	58,153	85,752	77,453
Existing		30,087	11,441	22,103	11,231	6,918
New		0	0	0	0	0
NLSL		42,751	41,372	42,751	42,751	38,614
Block Shaping Factors		0.034	0.149	0.135	0.190	0.168
HLH Shaping Factors		0.559	0.555	0.559	0.538	0.571
LLH Shaping Factors		0.419	0.445	0.462	0.441	0.425
[redacted]						
Existing Resource Removal Shape		0.119	0.039	0.084	0.037	0.020
New Resource Removal Shape		0.000	0.000	0.000	0.000	0.000

Customer Charges and Load Shaping Charges
Prepared by BPA, July 28, 2021

	October	November	December	January	February
HLH by Month	416	400	416	400	384
LLH by Month	328	321	328	344	288
RHWM T1 System Capability HLH (MWh)	2,920,790	3,537,945	3,223,873	2,651,580	2,346,690
RHWM T1 System Capability LLH (MWh)	1,633,134	2,227,488	2,419,335	2,009,470	1,693,144
BP-22 Final Proposal Rates					
Composite Rate (TOCA) ($$/%)	$1,998,417	$1,998,417	$1,998,417	$1,998,417	$1,998,417
Non-Slice Rate ($$/%)	($329,943)	($329,943)	($329,943)	($329,943)	($329,943)
Slice Rate ($$/%)	$0	$0	$0	$0	$0
Load Shaping - HLH ($$/MWh)	$29.92	$31.71	$38.76	$34.29	$34.79
Load Shaping - LLH ($$/MWh)	$28.27	$29.14	$32.05	$25.85	$28.29
Financial Reserves Policy Surcharge	$0.00	$0.00	$0.00	$0.00	$0.00
Financial Reserves Policy Amount	**$0.0**	$-Millions			
Financial Reserves Policy Surcharge	$0.00				
FY2022 Billing Determinants					
TOCA %	0.36490%	0.36490%	0.36490%	0.36490%	0.36490%

Non-Slice TOCA %	0.36490%	0.36490%	0.36490%	0.36490%	0.36490%
Load Shaping - HLH (MWh)	-6,498	4,690	4,460	12,324	12,173
Load Shaping - LLH (MWh)	-2,679	5,996	3,964	11,587	9,374
FY2022 Tier 1 Power Charges without Low Density Discounts or Irrigation Rate Discounts					
Composite Charge	$729,222	$729,222	$729,222	$729,222	$729,222
Non-Slice Charge	($120,396)	($120,396)	($120,396)	($120,396)	($120,396)
Load Shaping - HLH	($194,419)	$148,721	$172,873	$422,603	$423,496
Load Shaping - LLH	($75,744)	$174,720	$127,041	$299,535	$265,183
Financial Reserves Policy Surcharge	$0	$0	$0	$0	$0
Total	$338,663	$932,267	$908,740	$1,330,964	$1,297,505
Steps in calculating Load Shaping Billing Determinants					
System Shaped Load HLH (MWh)	10,658	12,910	11,764	9,676	8,563
System Shaped Load LLH (MWh)	5,959	8,128	8,828	7,333	6,178
Actual Tier 1 Load HLH (MWh)	4,160	17,600	16,224	22,000	20,736
Actual Tier 1 Load LLH (MWh)	3,280	14,124	12,792	18,920	15,552

Step 3: Critical Slice & Block Amounts (with TOCAs)
(in annual aMW)

Tier 2 Block Amounts	0.000
Tier 1 Block Amounts 11/	24.581
Net Requirements	24.581

TOCAs 12/

Sum of RHWM	6736.361
Non-Slice TOCA	0.36490%
TOCA	0.36490%

Notes:
11/ Tier 1 Block Amounts equal Net Requirement less Tier 2 Amounts.
Annual Tier 1 Block Amounts (in aMW) go into section 1.1 of Exhibit C.
12/ TOCA equals minimum of Net Requirement or RHWM,
divided by the Sum of RHWM. Sum of RHWM in cell J18.
Non-Slice TOCA equals TOCA.

March	April	May	June	July	August	September	ANNUAL
743	720	744	720	744	744	720	8,760
0.159	0.010	0.000	0.000	0.038	0.039	0.078	1.000
34,237	2,153	0	0	8,183	8,398	16,796	215,330
0	0	0	0	0	0	0	0

g Factors * Annual Tier 1 Block Amounts in aMW (see Step 3) * Hours in Fiscal Year

N/A	N/A	N/A	N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	N/A	N/A	N/A	

o their Net Requirement. Not applicable to customers who elected flat Tier 1 block within-month shape.

46.0	3.0	0.0	0.0	11.0	11.0	23.0	214,654
46.0	3.0	0.0	0.0	11.0	11.0	23.0	
46.0	3.0	0.0	0.0	11.0	11.0	23.0	

calculated per 1.2.14 of Exhibit C multiplied by the diurnal shaping factor, divided by the hours in the month,
monthly MWh amounts calculated per 1.2.14 of Exhibit C divided by the hours in the month,
gawatt-hours established in cell O55 will be different than the megawatt-hours calculated in cell O50.

34,178	2,160	0	0	8,184	8,184	16,560	214,654

113,627	106,167	105,248	100,646	103,796	103,535	101,104	1,225,094
183.8	175.8	171.9	159.6	161.8	156.7	163.8	N/A
85,636	82,985	85,752	82,985	85,752	85,752	82,985	927,715
2,846	3,802	8,002	6,729	3,668	3,477	3,046	64,848
25,145	19,380	11,494	10,932	14,376	14,306	15,073	232,531

d.) TRL Forecast (energy and peak) goes into section 1.1 of Exhibit A. If NLSL see page 3 for additional calculations.
leed to add New Resources if customer has Above-RHWM Load before calculating Net Requirements.

0	0	0	0	0	0	0	0
0.000	0.000	0.000	0.000	0.000	0.000	0.000	
1,459	1,413	1,460	1,413	1,460	1,460	1,413	17,196
1.963	1.963	1.963	1.963	1.963	1.963	1.963	

ed Resources (ie Hydro Resources) and does not have enough (or any) Above-RHWM Load,
esources were not added to serve Above-RHWM Load, then Unspecified Resource Amounts will be added.

23,686	17,966	10,034	9,518	12,916	12,846	13,659	215,335

d plus T2 Amounts. Net Requirements goes into section 1.2 of Exhibit A.

March	April	May	June	July	August	September	ANNUAL
85,636	82,985	85,752	82,985	85,752	85,752	82,985	927,715
42,751	41,372	42,751	41,372	42,751	42,751	41,372	503,359
42,885	41,613	43,001	41,613	43,001	43,001	41,613	424,356
85,636	82,985	85,752	82,985	85,752	85,752	82,985	927,715
-4,194	-29,566	-34,850	-31,355	-19,615	-18,575	-11,293	-197,950
-5.645	-41.064	-46.841	-43.549	-26.364	-24.966	-15.685	
2,846	3,802	8,002	6,729	3,668	3,477	3,046	64,848
3.830	5.281	10.755	9.346	4.930	4.673	4.231	

nounts to match the NLSL forecast keeping the total dedicated amounts the same.

[redacted]

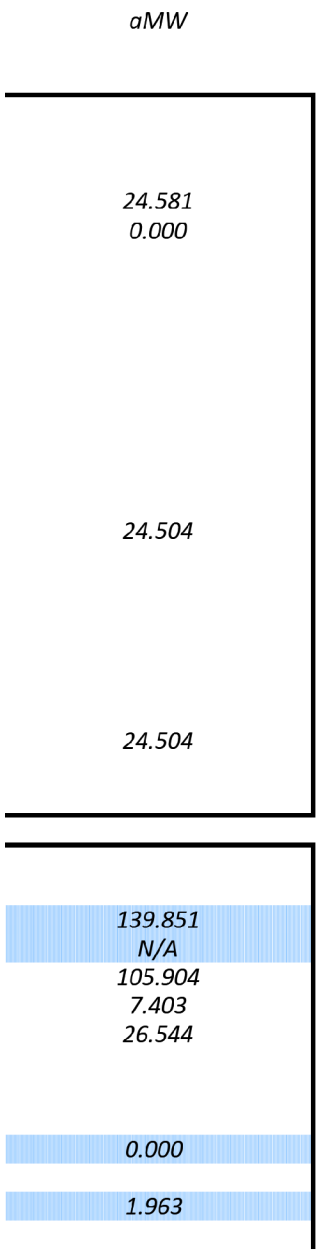
ces and have a Preliminary Net Requirement in the second year of a Rate Period
n Fiscal Year prior to the removal of any resources in accordance with section 10.

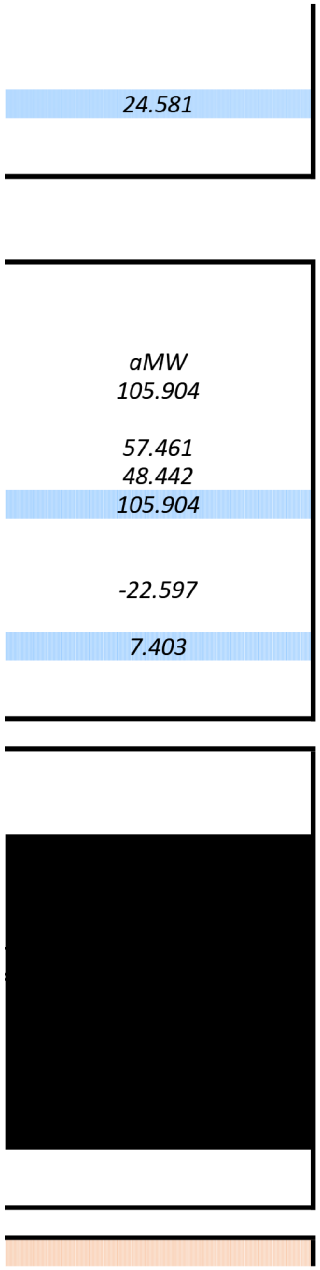
2022	2022	2022	2022	2022	2022	2022

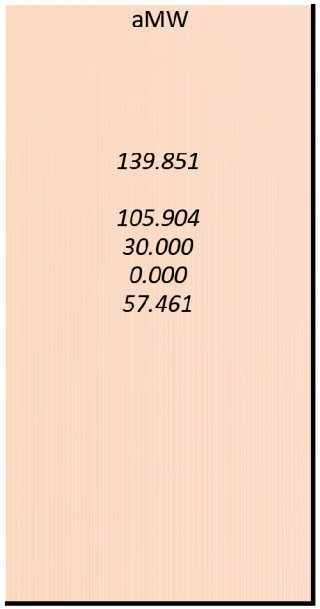
3	4	5	6	7	8	9	Annual
432	416	400	416	400	432	400	
311	304	344	304	344	312	320	
113,627	106,167	105,248	100,646	103,796	103,535	101,104	1,225,094
183.772	175.781	171.924	159.600	161.786	156.652	163.785	
85,636	82,985	85,752	82,985	85,752	85,752	82,985	927,715
7,040	33,368	42,852	38,084	23,283	22,052	14,339	262,798
0	0	0	0	0	0	0	0
42,751	41,372	42,751	41,372	42,751	42,751	41,372	503,359
0.159	0.010	0.000	0.000	0.038	0.039	0.078	1.000
0.581	0.578	0.538	0.578	0.538	0.581	0.556	
0.440	0.422	0.462	0.422	0.441	0.441	0.444	
0.019	0.133	0.173	0.154	0.089	0.084	0.051	1.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	

March	April	May	June	July	August	September	ANNUAL
432	416	400	416	400	432	400	4912
311	304	344	304	344	312	320	3848
2,961,839	2,307,314	3,495,710	3,952,933	3,505,339	3,425,259	2,999,685	37,328,957
1,860,906	1,436,906	1,691,935	1,590,174	1,757,589	1,660,955	1,700,508	21,681,545
$1,998,417	$1,998,417	$1,998,417	$1,998,417	$1,998,417	$1,998,417	$1,998,417	
($329,943)	($329,943)	($329,943)	($329,943)	($329,943)	($329,943)	($329,943)	
$0	$0	$0	$0	$0	$0	$0	
$27.57	$20.71	$16.28	$17.15	$36.83	$35.87	$28.15	
$28.44	$25.66	$16.30	$10.62	$21.36	$26.85	$28.95	
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
0.36490%	0.36490%	0.36490%	0.36490%	0.36490%	0.36490%	0.36490%	

0.36490%	0.36490%	0.36490%	0.36490%	0.36490%	0.36490%	0.36490%	
9,064	-7,171	-12,756	-14,424	-8,391	-7,747	-1,746	
7,516	-4,331	-6,174	-5,803	-2,629	-2,629	1,155	
$729,222	$729,222	$729,222	$729,222	$729,222	$729,222	$729,222	$8,750,664
($120,396)	($120,396)	($120,396)	($120,396)	($120,396)	($120,396)	($120,396)	($1,444,752)
$249,901	($148,519)	($207,665)	($247,376)	($309,040)	($277,877)	($49,146)	($16,448)
$213,742	($111,140)	($100,634)	($61,623)	($56,165)	($70,584)	$33,433	$637,764
$0	$0	$0	$0	$0	$0	$0	$0
$1,072,469	$349,167	$300,527	$299,827	$243,621	$260,365	$593,113	$7,927,228
10,808	8,419	12,756	14,424	12,791	12,499	10,946	136,213
6,790	5,243	6,174	5,803	6,413	6,061	6,205	79,116
19,872	1,248	0	0	4,400	4,752	9,200	120,192
14,306	912	0	0	3,784	3,432	7,360	94,462


aMW
24.581
0.000
24.504
24.504
139.851
N/A
105.904
7.403
26.544
0.000
1.963


24.581
aMW
105.904
57.461
48.442
105.904
-22.597
7.403



aMW

7,599.543 6736
5,634.497

28
21
24
25

From: David Hodder

Sent: Thu Sep 09 08:12:52 2021

To: Lacambra,Jared M (BPA) - TPCF-MEAD-GOB

Subject: [EXTERNAL] RE: Ponderay Industries PNC 230kV work

Importance: Normal

Todd B at Ponderay will be out of town on the 16th.

David

From: Lacambra,Jared M (BPA) - TPCF-MEAD-GOB <jmlacambra@bpa.gov>
Sent: Thursday, September 9, 2021 7:21 AM
To: David Hodder <DHodder@popud.org>
Subject: RE: Ponderay Industries PNC 230kV work

CAUTION: This email originated from outside of the POPUD. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hey Dave,

Ops and Electricians work 4-10's so Friday is a no go the 16th is preferred and I know the following week they are pretty busy. I'll get some dates and send them over. In case Ponderay industries can't move things around.

Jared

From: David Hodder <DHodder@popud.org>
Sent: Wednesday, September 8, 2021 4:00 PM
To: Lacambra,Jared M (BPA) - TPCF-MEAD-GOB <jmlacambra@bpa.gov>
Subject: [EXTERNAL] Ponderay Industries PNC 230kV work

Hi Jared,

The 16th doesn't work for Ponderay Industries, the 17th does. Can you make it work with Kendrick and Marcus?

The October 5th date works for the outage and trip checks. You may want to plan a backup date in case of weather.

I explained the need for the metering and Todd B. said they wanted to take part of their load from each of the 2- 75 MVA transformers. So they will need 2 sets of switchgear or one set with 2 feeds and a tie breaker. I also advised

them to get a revenue grade metering package on any switchgear they purchase.

Thanks,

Regards,

David J Hodder P.E.

Engineering Manager

Phone 509 447-3137

Cell (b)(6)

Public Utility District No. 1 of Pend Oreille County

P.O. Box 190 | 130 N. Washington

Newport, Washington 99156

From: Lacambra,Jared M (BPA) - TPCF-MEAD-GOB

Sent: Thu Sep 09 08:34:30 2021

To: David Hodder

Subject: RE: Ponderay Industries PNC 230kV work

Importance: Normal

Gotcha. Is he available the following week?

jared

From: David Hodder <DHodder@popud.org>
Sent: Thursday, September 9, 2021 8:13 AM
To: Lacambra,Jared M (BPA) - TPCF-MEAD-GOB <jmlacambra@bpa.gov>
Subject: [EXTERNAL] RE: Ponderay Industries PNC 230kV work

Todd B at Ponderay will be out of town on the 16th.

David

From: Lacambra,Jared M (BPA) - TPCF-MEAD-GOB <jmlacambra@bpa.gov>

Sent: Thursday, September 9, 2021 7:21 AM
To: David Hodder <DHodder@popud.org>
Subject: RE: Ponderay Industries PNC 230kV work

CAUTION: This email originated from outside of the POPUD. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hey Dave,

Ops and Electricians work 4-10's so Friday is a no go the 16th is preferred and I know the following week they are pretty busy. I'll get some dates and send them over. In case Ponderay industries can't move things around.

Jared

From: David Hodder <DHodder@popud.org>
Sent: Wednesday, September 8, 2021 4:00 PM
To: Lacambra,Jared M (BPA) - TPCF-MEAD-GOB <jmlacambra@bpa.gov>
Subject: [EXTERNAL] Ponderay Industries PNC 230kV work

Hi Jared,

The 16th doesn't work for Ponderay Industries, the 17th does. Can you make it work with Kendrick and Marcus?

The October 5th date works for the outage and trip checks. You may want to plan a backup date in case of weather.

I explained the need for the metering and Todd B. said they wanted to take part of their load from each of the 2- 75 MVA transformers. So they will need 2 sets of switchgear or one set with 2 feeds and a tie breaker. I also advised them to get a revenue grade metering package on any switchgear they purchase.

Thanks,

Regards,

David J Hodder P.E.

Engineering Manager

Phone 509 447-3137

Cell (b)(6)

Public Utility District No. 1 of Pend Oreille County

P.O. Box 190 | 130 N. Washington

Newport, Washington 99156

Pend Oreille County Public Utility District #1

From: Normandeau,Mike (BPA) - PSE-RONAN

Sent: Thu Sep 09 08:36:54 2021

To: Colin Willenbrock

Subject: RE: Net Requirement Extension Request - Please Respond

Importance: Normal

Great. Thank for responding so quickly. We're scheduled for a follow up discussion next week. We'll be sure to update you on this process.

Mike

From: Colin Willenbrock <cwillenbrock@popud.org>
Sent: Thursday, September 9, 2021 9:29 AM
To: Normandeau,Mike (BPA) - PSE-RONAN <mrnormandeau@bpa.gov>; April Owen <aowen@popud.org>; Tyler Whitney <TWhitney@popud.org>
Cc: Moore,Lisa A (BPA) - PSSE-MEAD-GOB <lamoore@bpa.gov>; Patton,Kathryn B (BPA) - PSS-SEATTLE <kbpatton@bpa.gov>; Babaidhan,Sami A (BPA) - PSSE-MEAD-GOB <sababaidhan@bpa.gov>
Subject: [EXTERNAL] RE: Net Requirement Extension Request - Please Respond

Mike,

Pend Oreille PUD agrees to the requested extension of time for revisions to Exhibit A and Exhibit C to on or before September 30, 2021.

Thank you,
Colin

F. Colin Willenbrock
General Manager

Public Utility District No. 1 of Pend Oreille County
P.O. Box 190 | 130 N. Washington
Newport, Washington 99156
509.447.3137 | cwillenbrock@popud.org | www.popud.org

From: Normandeau,Mike (BPA) - PSE-RONAN <mrnormandeau@bpa.gov>
Sent: Wednesday, September 8, 2021 4:55 PM
To: Colin Willenbrock <cwillenbrock@popud.org>; April Owen <aowen@popud.org>
Cc: Moore,Lisa A (BPA) - PSSE-MEAD-GOB <lamoore@bpa.gov>; Patton,Kathryn B (BPA) - PSS-SEATTLE <kbpatton@bpa.gov>; Babaidhan,Sami A (BPA) - PSSE-MEAD-GOB <sababaidhan@bpa.gov>
Subject: Net Requirement Extension Request - Please Respond
Importance: High

CAUTION: This email originated from outside of the POPUD. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Dear Colin,

BPA and Pend Oreille are currently working together to determine Pend Oreille's Net Requirement for Fiscal Year 2022. With the paper mill returning to service and the addition of crypto load that is expected to be a Planned New Large Single Load (NLSL) being served by Pend Oreille, BPA is requesting additional time to finalize the forecast and complete the Net Requirement calculation. The Regional Dialogue contract stipulates that BPA provide revisions to Exhibit A and Exhibit C by September 15th, we may not be able to provide the revisions by that date. BPA will provide the revisions to you on or before September 30, 2021.

If this is acceptable, would you please reply with your acceptance.

Respectfully Yours,

Michael Normandeau

Michael R. Normandeau
Account Executive | PSE – Power Services
Bonneville Power Administration
bpa.gov | P 406-676-2669 | C (b)(6)
cid:image001.jpg@01D52C3E.DF0B9390cid:image008.jpg@01D52C3E.09FCE1E0cid:image009.jpg@01D52C3E.09FCE1E0cid:image010.jpg@01D52C3E.09FCE1E0cid:image011.jpg@01D52C3E.09FCE1E0cid:image012.jpg@01D52C3E.09FCE1E0

From: Colin Willenbrock

Sent: Thu Sep 09 08:38:31 2021

To: Normandeau,Mike (BPA) - PSE-RONAN

Subject: [EXTERNAL] RE: Net Requirement Extension Request - Please Respond

Importance: Normal

Sounds good. Thanks again for all of your help on this.

Colin

From: Normandeau,Mike (BPA) - PSE-RONAN <mrnormandeau@bpa.gov>
Sent: Thursday, September 9, 2021 8:37 AM
To: Colin Willenbrock <cwillenbrock@popud.org>
Subject: RE: Net Requirement Extension Request - Please Respond

Great. Thank for responding so quickly. We're scheduled for a follow up discussion next week. We'll be sure to update you on this process.

Mike

From: Colin Willenbrock <cwillenbrock@popud.org>
Sent: Thursday, September 9, 2021 9:29 AM
To: Normandeau,Mike (BPA) - PSE-RONAN <mrnormandeau@bpa.gov>; April Owen <aowen@popud.org>; Tyler Whitney <TWhitney@popud.org>
Cc: Moore,Lisa A (BPA) - PSSE-MEAD-GOB <lamoore@bpa.gov>; Patton,Kathryn B (BPA) - PSS-SEATTLE <kbpatton@bpa.gov>; Babaidhan,Sami A (BPA) - PSSE-MEAD-GOB <sababaidhan@bpa.gov>
Subject: [EXTERNAL] RE: Net Requirement Extension Request - Please Respond

Mike,

Pend Oreille PUD agrees to the requested extension of time for revisions to Exhibit A and Exhibit C to on or before September 30, 2021.

Thank you,

Colin

F. Colin Willenbrock

General Manager

Public Utility District No. 1 of Pend Oreille County

P.O. Box 190 | 130 N. Washington

Newport, Washington 99156
509.447.3137 | cwillenbrock@popud.org | www.popud.org

From: Normandeau,Mike (BPA) - PSE-RONAN <mrnormandeau@bpa.gov>
Sent: Wednesday, September 8, 2021 4:55 PM
To: Colin Willenbrock <cwillenbrock@popud.org>; April Owen <aowen@popud.org>
Cc: Moore,Lisa A (BPA) - PSSE-MEAD-GOB <lamoore@bpa.gov>; Patton,Kathryn B (BPA) - PSS-SEATTLE <kbpatton@bpa.gov>; Babaidhan,Sami A (BPA) - PSSE-MEAD-GOB <sababaidhan@bpa.gov>
Subject: Net Requirement Extension Request - Please Respond
Importance: High

CAUTION: This email originated from outside of the POPUD. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Dear Colin,

BPA and Pend Oreille are currently working together to determine Pend Oreille's Net Requirement for Fiscal Year 2022. With the paper mill returning to service and the addition of crypto load that is expected to be a Planned New Large Single Load (NLSL) being served by Pend Oreille, BPA is requesting additional time to finalize the forecast

and complete the Net Requirement calculation. The Regional Dialogue contract stipulates that BPA provide revisions to Exhibit A and Exhibit C by September 15th, we may not be able to provide the revisions by that date. BPA will provide the revisions to you on or before September 30, 2021.

If this is acceptable, would you please reply with your acceptance.

Respectfully Yours,

Michael Normandeau

Michael R. Normandeau

Account Executive | PSE – Power Services

Bonneville Power Administration
bpa.gov | P 406-676-2669 | C (b)(6)

cid:image001.jpg@01D52C3E.DF0B9390cid:image008.jpg@01D52C3E.09FCE1E0cid:image009.jpg@01D52C3E.09FCE1E0cid:image010.jpg@01D52C3E.09FCE1E0cid:image011.jpg@01D52C3E.09FCE1E0cid:image012.jpg@01D52C3E.09FCE1E0

Pend Oreille County Public Utility District #1

From: Lacambra,Jared M (BPA) - TPCF-MEAD-GOB

Sent: Mon Sep 13 09:20:45 2021

To: David Hodder

Cc: Keyannie,Kendrick (BPA) - TFSD-BELL; Walker,Nichloas P (BPA) - TFSB-BELL; Fedchun,Pavel (BPA) - TFSB-USFS NEWPORT

Subject: RE: Ponderay Industries PNC 230kV work

Importance: Normal

Hey David,

Kendrick is available on the 17th and can update the electricians. What time on the 17th works to meet up on site and do the walk through? As a reminder please bring any schematics you have for POPUD and PNC.

Thanks

jared

From: David Hodder <DHodder@popud.org>
Sent: Thursday, September 9, 2021 8:13 AM
To: Lacambra,Jared M (BPA) - TPCF-MEAD-GOB <jmlacambra@bpa.gov>
Subject: [EXTERNAL] RE: Ponderay Industries PNC 230kV work

Todd B at Ponderay will be out of town on the 16th.

David

From: Lacambra,Jared M (BPA) - TPCF-MEAD-GOB <jmlacambra@bpa.gov>
Sent: Thursday, September 9, 2021 7:21 AM
To: David Hodder <DHodder@popud.org>
Subject: RE: Ponderay Industries PNC 230kV work

Hey Dave,

Ops and Electricians work 4-10's so Friday is a no go the 16th is preferred and I know the following week they are pretty busy. I'll get some dates and send them over. In case Ponderay industries can't move things around.

Jared

From: David Hodder <DHodder@popud.org>
Sent: Wednesday, September 8, 2021 4:00 PM
To: Lacambra,Jared M (BPA) - TPCF-MEAD-GOB <jmlacambra@bpa.gov>
Subject: [EXTERNAL] Ponderay Industries PNC 230kV work

Hi Jared,

The 16th doesn't work for Ponderay Industries, the 17th does. Can you make it work with Kendrick and Marcus?

The October 5th date works for the outage and trip checks. You may want to plan a backup date in case of weather.

I explained the need for the metering and Todd B. said they wanted to take part of their load from each of the 2- 75 MVA transformers. So they will need 2 sets of switchgear or one set with 2 feeds and a tie breaker. I also advised them to get a revenue grade metering package on any switchgear they purchase.

Thanks,

Regards,

David J Hodder P.E.

Engineering Manager

Phone 509 447-3137

Cell (b)(6)

Public Utility District No. 1 of Pend Oreille County

P.O. Box 190 | 130 N. Washington

Newport, Washington 99156

Pend Oreille County Public Utility District #1

From: April Owen

Sent: Thu Sep 16 09:49:43 2021

To: Normandeau,Mike (BPA) - PSE-RONAN

Cc: Patton,Kathryn B (BPA) - PSS-SEATTLE

Bcc: mrnormandeau@bpa.gov

Subject: [EXTERNAL] FW: Check in prior to check in

Importance: Normal

Attachments: FY2022_NetRequirement_PEND_OREILLE_Draft at different NLSL loads_210901.xlsx; FW: Pend Oreille FY2022 Forecast Breakout 2021-8-18.xlsx

Hi Mike,

It looks like the Current Net Requirement tab is the same as what was originally calculated at the beginning of July (?). Andres had sent me new TRL numbers based on our public comment submission in August, but I never saw the results actually put into the net requirement calculation spreadsheet. You can see what he sent in the email attached. I just want to make sure we are all using the same numbers.

Thanks,

April.

From: Normandeau,Mike (BPA) - PSE-RONAN <mrnormandeau@bpa.gov>
Sent: Thursday, September 16, 2021 8:53 AM
To: April Owen <aowen@popud.org>
Subject: RE: Check in prior to check in

April- here's the most recent set of scenarios. The last tab, current Net Requirement is the one we're using to revise exhibits. Should have the dollar amounts you are looking for. We can go over this during the meeting.

From: April Owen <aowen@popud.org>
Sent: Wednesday, September 15, 2021 5:28 PM
To: Normandeau,Mike (BPA) - PSE-RONAN <mrnormandeau@bpa.gov>
Subject: [EXTERNAL] RE: Check in prior to check in

I am wondering about getting a new spreadsheet with allocations and dollar values. I haven't seen that yet with the final load submission yet.

Thanks,

April.

From: Normandeau,Mike (BPA) - PSE-RONAN <mrnormandeau@bpa.gov>

Sent: Wednesday, September 15, 2021 12:49 PM
To: April Owen <aowen@popud.org>
Subject: Check in prior to check in

CAUTION: This email originated from outside of the POPUD. Do not click links or open attachments unless you recognize the sender and know the content is safe.

April- Do you have a few mins today. Want to have a quick chat before we check in tomorrow. I'm free all afternoon.

Thanks

Mike

Pend Oreille County Public Utility District #1

FY2022 Annual Net Requirement Calculations and Block Amounts

Prepared by BPA, July 28, 2021

Customer Name	**PEND OREILLE PUD**
BES Number	10306
Fiscal Year	2022
Hours	8,760

Step 1: Above-RHWM Load Calculation

(in annual aMW)

TRL Forecast 1/	116.349
NLSL Resources 2/	82.401
Existing Resources 3/	26.052
Gross Requirements 4/	7.896
RHWM 5/	24.581
Headroom 6/	16.685

Notes:
1/ TRL Forecast submitted by customer and approved by BPA (or BPA forecast if customer submitted forecast deemed not reasonable.)
2/ If NLSL see page 3 for additional calculations.
3/ Existing Resources are from Exhibit A and do not include resources serving NLSLs. Existing Resources can be removed in the second year of a Rate Period. See page 3 for removal of Existing Resource calculations.
4/ Gross Requirements is a preliminary Net Requirement calculation (preliminary since New Resources to serve Above-RHWM Load have not yet been added.)
5/ RHWM is from RHWM Process Outputs spreadsheet published on September 28, 2012, with updates for Provisional HWM if necessary.
6/ Headroom, if RHWM is greater than Gross Req, Above-RHWM Load, if RHWM is less than Gross Req.

Step 2: Annual Net Requirement Calcul

(in annual aMW)

Gross Requirements 7/
New Resources 8/
Net Requirements (NR) 9/

Tier 2 Block Amounts 10/

Notes:
7/ Gross Requirements from Step 1.
8/ New Resources equal Above-RHWM Load Amounts. If customer has New Specified Re T2 Block Amounts that sum to an amount gr the customer's Above-RHWM Load, then the to determine the order of resource removal/ per section 10 of the body of the Slice/Block
9/ Net Requirements equals Gross Requirem less New Resources.
10/ T2 Amounts based on customer's electio September 30, 2011 Notice Deadline. If T2 Amounts, then amounts go into section T2 Amounts plus T1 Amounts equal Net Requ

Monthly Net Requirement Calculations (with Block Amounts)

Prepared by BPA, July 28, 2021

	October	November	December
Hours	744	721	744

Step 4: Monthly Tier 1 Block Amount Calculations

Monthly Block Shaping Factors	0.034	0.149	0.135
Monthly T1 Block Amounts (MWh)	2,352	10,306	9,337
Monthly T2 Block Amounts (MWh)	0	0	0

13/ Exhibit C, Section 1.2.1.4 states that monthly Tier 1 Block amo Shaping Factors are in Exhibit C, Section 1.2.13

Diurnal Shaping Factors			
Monthly Block HLH Shaping Factors	N/A	N/A	N/A
Monthly Block LLH Shaping Factors	N/A	N/A	N/A

14/ Diurnal Shaping Factors per Exhibit C, Section 1.2.2.4 if custom

Total - T1 Block Amounts (MW/hr)	3.0	14.0	13.0
HLH - T1 Block Amounts (MW/hr)	3.0	14.0	13.0
LLH - T1 Block Amounts (MW/hr)	3.0	14.0	13.0

15/ Shaped within-month Block Amounts arre megawatt per hour and rounded to a whole number. Flat within-month Block Amounts rounded to a whole number. The diurnal amounts go into section 1

Tier 1 and Tier 2 Block Amounts (MWh)	2,232	10,094	9,672

Step 5: Net Requirement Calculations (and Unspecified Resources Amounts)

TRL Forecast Energy (MWh)	22,160	30,234	37,197
TRL Forecast Peak (MW)	132.6	149.7	157.1
NLSL Resources (MWh)	0	0	0
Existing Resources (MWh)	72,838	52,813	68,195
Monthly Gross Requirements (MWh)	-50,678	-22,579	-30,998

16/ TRL Forecast submitted by customer and approved by BPA (or I Existing Resources from Exhibit A. Monthly Gross Requirements ec

New Specified Resources (MWh)	0	0	0
New Specified Resources (aMW)	0.000	0.000	0.000
Unspecified Resource Amts (MWh)	0	0	0
Unspecified Resource Amts (aMW)	0.000	0.000	0.000

17/ New Specified Resouces can be added to serve Above-RHWM then customer may do so but the amounts will be reduced to matc

Net Requirement Forecast (MWh)	(50,678)	(22,579)	(30,998)

18/ Net Requirements equals TRL less NLSLs, Existing Resources, N

NLSL Calculations (if applicable)

Prepared by BPA, July 28, 2021

	October	November	December
NLSL Forecast (MWh)	0	0	0
Resources Serving an NLSL (MWh)	42,751	41,372	42,751
Change to NLSL Resources (MWh)	-42,751	-41,372	-42,751
Updated Resources Serving NLSL (MWh)	0	0	0

18/ Original resource amounts from Exhibit A. Update NLSL resou

Change to Existing Resources (MWh)	42,751	41,372	46,092
Change to Existing Resources (aMW)	57.461	57.381	61.952
Updated Total Existing Resources (MWh)	72,838	52,813	68,195
Updated Total Existing Resources (aMW)	97.901	73.250	91.660

19/ If customer has a single resource split amongst NLSL and non-N

Removal of Existing Resources in Second Year of Rate Period (if applicable)

Prepared by BPA, July 28, 2021

0 1st Year = 0, Second Year = 1

[redacted]

[redacted]

29/ Existing Resource Removal for Subsequent Fiscal Years of Each Rate Period (section 10.5 of the Slice/Block Contracts) is appli
that is less than the preliminary Net Requirement in the first year of a rate period. Preliminary Net Requirement means BPA's for

Customer Specific Data for Fiscal Year		2021	2021	2021
Prepared by BPA, July 28, 2021		10	11	12
RHWM	24.581	416	400	416
		328	321	328
BES Number	10306			
T2 Block Amounts	0			
TRL Forecast - Energy (MWh)		22,160	30,234	37,197
TRL Forecast - Peak (MW)		132.585	149.663	157.084
NLSL Forecast		0	0	0
Existing		30,087	11,441	22,103
New		0	0	0
NLSL		42,751	41,372	42,751
Block Shaping Factors		0.034	0.149	0.135
HLH Shaping Factors		0.559	0.555	0.559
LLH Shaping Factors		0.419	0.445	0.462
[redacted]				
Existing Resource Removal Shape		0.119	0.039	0.084
New Resource Removal Shape		0.000	0.000	0.000

Customer Charges and Load Shaping Charges
Prepared by BPA, July 28, 2021

	October	November	December
HLH by Month	416	400	416
LLH by Month	328	321	328
RHWM T1 System Capability HLH (MWh)	2,920,790	3,537,945	3,223,873
RHWM T1 System Capability LLH (MWh)	1,633,134	2,227,488	2,419,335

BP-22 Final Proposal Rates			
Composite Rate (TOCA) ($$/%)	$1,998,417	$1,998,417	$1,998,417
Non-Slice Rate ($$/%)	($329,943)	($329,943)	($329,943)
Slice Rate ($$/%)	$0	$0	$0
Load Shaping - HLH ($$/MWh)	$29.92	$31.71	$38.76
Load Shaping - LLH ($$/MWh)	$28.27	$29.14	$32.05
Financial Reserves Policy Surcharge	$0.00	$0.00	$0.00
Financial Reserves Policy Amount	**$0.0**	$-Millions	
Financial Reserves Policy Surcharge	$0.00		
FY2022 Billing Determinants			
TOCA %	0.11721%	0.11721%	0.11721%
Non-Slice TOCA %	0.11721%	0.11721%	0.11721%
Load Shaping - HLH (MWh)	-2,175	1,453	1,629
Load Shaping - LLH (MWh)	-930	1,883	1,428
FY2022 Tier 1 Power Charges without Low Density Discounts or Irrigation Rate Discounts			

Composite Charge	$234,234	$234,234	$234,234
Non-Slice Charge	($38,673)	($38,673)	($38,673)
Load Shaping - HLH	($65,090)	$46,080	$63,152
Load Shaping - LLH	($26,297)	$54,875	$45,777
Financial Reserves Policy Surcharge	$0	$0	$0
Total	$104,174	$296,516	$304,490

Steps in calculating Load Shaping Billing Determinants			
System Shaped Load HLH (MWh)	3,423	4,147	3,779
System Shaped Load LLH (MWh)	1,914	2,611	2,836
Actual Tier 1 Load HLH (MWh)	1,248	5,600	5,408
Actual Tier 1 Load LLH (MWh)	984	4,494	4,264

ation	Step 3: Critical Slice & Block Amounts (with TOCAs) *(in annual aMW)*	
7.896	Tier 2 Block Amounts	0.000
0.000	Tier 1 Block Amounts 11/	7.896
7.896	Net Requirements	7.896
0.000	TOCAs 12/	
	Sum of RHWM	6736.361
less T2	Non-Slice TOCA	0.11721%
sources and	TOCA	0.11721%
eater than		
customer needs	Notes:	
T2 remarketing	11/ Tier 1 Block Amounts equal Net Requirement less Tier 2 Amounts.	
Contract.	Annual Tier 1 Block Amounts (in aMW) go into section 1.1 of Exhibit C.	
nent Amounts	12/ TOCA equals minimum of Net Requirement or RHWM,	
	divided by the Sum of RHWM. Sum of RHWM in cell J18.	
n made by the	Non-Slice TOCA equals TOCA.	
2.5 of Exhibit C.		
uirements.		

January	February	March	April	May	June
744	672	743	720	744	720
0.190	0.168	0.159	0.010	0.000	0.000
13,141	11,620	10,997	692	0	0
0	0	0	0	0	0

unts in MWh are equal to the Monthly Shaping Factors * Annual Tier 1 Block Amounts in aMW (see Step 3) * Hours in Fiscal Year

N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A

er elected Tier 1 Block within-month shaped to their Net Requirement. Not applicable to customers who elected flat Tier 1 block within

18.0	17.0	15.0	1.0	0.0	0.0
18.0	17.0	15.0	1.0	0.0	0.0
18.0	17.0	15.0	1.0	0.0	0.0

amounts equal to the monthly MWh amounts calculated per 1.2.14 of Exhibit C multiplied by the diurnal shaping factor, divided by the
are megawatt per hour amounts equal to the monthly MWh amounts calculated per 1.2.14 of Exhibit C divided by the hours in the mc
1.3 of Exhibit C. Due to rounding the total megawatt-hours established in cell O55 will be different than the megawatt-hours calculatec

13,392	11,424	11,145	720	0	0

99,093	86,780	91,146	102,382	101,336	96,861
200.4	190.8	183.8	175.8	171.9	159.6
63,240	57,120	63,155	79,200	81,840	79,200
3,073	2,574	0	3,802	8,002	6,729
32,780	27,086	27,991	19,380	11,494	10,932

BPA forecast if customer forecast not approved.) TRL Forecast (energy and peak) goes into section 1.1 of Exhibit A. If NLSL see page 3 f
uals TRL less NLSLs and Exisiting Resources. Need to add New Resources if customer has Above-RHWM Load before calculating Net Re

0	0	0	0	0	0
0.000	0.000	0.000	0.000	0.000	0.000
0	0	0	0	0	0
0.000	0.000	0.000	0.000	0.000	0.000

Load. If customer must dedicate New Specified Resources (ie Hydro Resources) and does not have enough (or any) Above-RHWM Loac
h the Above-RHWM Load. If New Specified Resources were not added to serve Above-RHWM Load, then Unspecified Resource Amour

32,780	27,086	27,991	19,380	11,494	10,932

ew Resources (Specified and Unspecified), and plus T2 Amounts. Net Requirements goes into section 1.2 of Exhibit A.

Revised: No Oct-Dec Load, Jan-Sep Mill on full, Crypto starts in April with full ramp

January	February	March	April	May	June
63,240	57,120	63,155	79,200	81,840	79,200
42,751	38,614	42,751	41,372	42,751	41,372
20,489	18,506	20,404	37,828	39,089	37,828
63,240	57,120	63,155	79,200	81,840	79,200

ces in Exhibit A to match NLSL forecast.

-8,158	-4,344	-20,404	-29,566	-34,850	-31,355
-10.965	-6.464	-27.462	-41.064	-46.841	-43.549
3,073	2,574	0	3,802	8,002	6,729
4.130	3.830	0.000	5.281	10.755	9.346

NLSL load, then balance the single resource amounts to match the NLSL forecast keeping the total dedicated amounts the same.

[redacted]

[redacted]

cable for customers that have Existing Resources and have a Preliminary Net Requirement in the second year of a Rate Period
ecast of Customer's Net Requirement for each Fiscal Year prior to the removal of any resources in accordance with section 10.

2022	2022	2022	2022	2022	2022
1	2	3	4	5	6
400	384	432	416	400	416
344	288	311	304	344	304
99,093	86,780	91,146	102,382	101,336	96,861
200.391	190.756	183.772	175.781	171.924	159.600
63,240	57,120	63,155	79,200	81,840	79,200
11,231	6,918	7,040	33,368	42,852	38,084
0	0	0	0	0	0
42,751	38,614	42,751	41,372	42,751	41,372
0.190	0.168	0.159	0.010	0.000	0.000
0.538	0.571	0.581	0.578	0.538	0.578
0.441	0.425	0.440	0.422	0.462	0.422
0.037	0.020	0.019	0.133	0.173	0.154
0.000	0.000	0.000	0.000	0.000	0.000

January	February	March	April	May	June
400	384	432	416	400	416
344	288	311	304	344	304
2,651,580	2,346,690	2,961,839	2,307,314	3,495,710	3,952,933
2,009,470	1,693,144	1,860,906	1,436,906	1,691,935	1,590,174
$1,998,417	$1,998,417	$1,998,417	$1,998,417	$1,998,417	$1,998,417
($329,943)	($329,943)	($329,943)	($329,943)	($329,943)	($329,943)
$0	$0	$0	$0	$0	$0
$34.29	$34.79	$27.57	$20.71	$16.28	$17.15
$25.85	$28.29	$28.44	$25.66	$16.30	$10.62
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
0.11721%	0.11721%	0.11721%	0.11721%	0.11721%	0.11721%
0.11721%	0.11721%	0.11721%	0.11721%	0.11721%	0.11721%
4,092	3,777	3,008	-2,288	-4,097	-4,633
3,837	2,911	2,484	-1,380	-1,983	-1,864

$234,234	$234,234	$234,234	$234,234	$234,234	$234,234
($38,673)	($38,673)	($38,673)	($38,673)	($38,673)	($38,673)
$140,318	$131,417	$82,942	($47,393)	($66,704)	($79,460)
$99,179	$82,365	$70,640	($35,416)	($32,325)	($19,794)
$0	$0	$0	$0	$0	$0
$435,058	$409,343	$349,143	$112,752	$96,532	$96,307
3,108	2,751	3,472	2,704	4,097	4,633
2,355	1,985	2,181	1,684	1,983	1,864
7,200	6,528	6,480	416	0	0
6,192	4,896	4,665	304	0	0

July	August	September	ANNUAL	*aMW*
744	744	720	8,760	
0.038	0.039	0.078	1.000	
2,628	2,697	5,395	69,166	*7.896*
0	0	0	0	*0.000*
N/A	N/A	N/A		
N/A	N/A	N/A		

ı-month shape.

4.0	4.0	7.0	69,671	*7.953*
4.0	4.0	7.0		
4.0	4.0	7.0		

hours in the month,
nth,
l in cell O50.

2,976	2,976	5,040	69,671	*7.953*

118,484	118,223	115,319	1,019,214	*116.349*
161.8	156.7	163.8	N/A	*N/A*
100,440	100,440	97,200	721,835	*82.401*
3,668	3,477	3,046	228,217	*26.052*
14,376	14,306	15,073	69,162	*7.896*

or additional calculations.
quirements.

0	0	0	0	*0.000*
0.000	0.000	0.000		
0	0	0	0	*0.000*
0.000	0.000	0.000		

l,
ts will be added.

14,376	14,306	15,073	69,162	*7.896*

July	August	September	ANNUAL	*aMW*
100,440	100,440	97,200	721,835	*82.401*
42,751	42,751	41,372	503,359	*57.461*
57,689	57,689	55,828	218,476	*24.940*
100,440	100,440	97,200	721,835	*82.401*
-19,615	-18,575	-11,293	-47,945	*-5.473*
-26.364	-24.966	-15.685		
3,668	3,477	3,046	228,217	*26.052*
4.930	4.673	4.231		

[redacted]

2022	2022	2022		
7	8	9	Annual	aMW
400	432	400		
344	312	320		
118,484	118,223	115,319	1,019,214	*116.349*
161.786	156.652	163.785		
100,440	100,440	97,200	721,835	*82.401*
23,283	22,052	14,339	262,798	*30.000*
0	0	0	0	*0.000*
42,751	42,751	41,372	503,359	*57.461*
0.038	0.039	0.078	1.000	
0.538	0.581	0.556		
0.441	0.441	0.444		
0.089	0.084	0.051	1.000	
0.000	0.000	0.000		

July	August	September	ANNUAL	*aMW*
400	432	400	4912	
344	312	320	3848	
3,505,339	3,425,259	2,999,685	37,328,957	7,599.543
1,757,589	1,660,955	1,700,508	21,681,545	5,634.497

$1,998,417	$1,998,417	$1,998,417
($329,943)	($329,943)	($329,943)
$0	$0	$0
$36.83	$35.87	$28.15
$21.36	$26.85	$28.95
$0.00	$0.00	$0.00
0.11721%	0.11721%	0.11721%
0.11721%	0.11721%	0.11721%
-2,509	-2,287	-716
-684	-699	247

$234,234	$234,234	$234,234	$2,810,808	
($38,673)	($38,673)	($38,673)	($464,076)	
($92,392)	($82,026)	($20,153)	$10,691	
($14,612)	($18,763)	$7,146	$212,775	
$0	$0	$0	$0	
$88,557	$94,772	$182,554	$2,570,198	
4,109	4,015	3,516	43,753	9
2,060	1,947	1,993	25,413	7
1,600	1,728	2,800	39,008	8
1,376	1,248	2,240	30,663	8

6736

FY2022 Annual Net Requirement Calculations and Block Amounts

Prepared by BPA, July 28, 2021

Customer Name	PEND OREILLE PUD
BES Number	10306
Fiscal Year	2022
Hours	8,760

Step 1: Above-RHWM Load Calculation

(in annual aMW)

TRL Forecast 1/	105.281
NLSL Resources 2/	71.333
Existing Resources 3/	27.594
Gross Requirements 4/	6.354
RHWM 5/	24.581
Headroom 6/	18.227

Notes:
1/ TRL Forecast submitted by customer and approved by BPA (or BPA forecast if customer submitted forecast deemed not reasonable.)
2/ If NLSL see page 3 for additional calculations.
3/ Existing Resources are from Exhibit A and do not include resources serving NLSLs. Existing Resources can be removed in the second year of a Rate Period. See page 3 for removal of Existing Resource calculations.
4/ Gross Requirements is a preliminary Net Requirement calculation (preliminary since New Resources to serve Above-RHWM Load have not yet been added.)
5/ RHWM is from RHWM Process Outputs spreadsheet published on September 28, 2012, with updates for Provisional HWM if necessary.
6/ Headroom, if RHWM is greater than Gross Req, Above-RHWM Load, if RHWM is less than Gross Req.

Step 2: Annual Net Requirement Calcul

(in annual aMW)

Gross Requirements 7/
New Resources 8/
Net Requirements (NR) 9/

Tier 2 Block Amounts 10/

Notes:
7/ Gross Requirements from Step 1.
8/ New Resources equal Above-RHWM Load Amounts. If customer has New Specified Re T2 Block Amounts that sum to an amount gr the customer's Above-RHWM Load, then the to determine the order of resource removal/ per section 10 of the body of the Slice/Block
9/ Net Requirements equals Gross Requirem less New Resources.
10/ T2 Amounts based on customer's electio September 30, 2011 Notice Deadline. If T2 Amounts, then amounts go into section T2 Amounts plus T1 Amounts equal Net Requ

Monthly Net Requirement Calculations (with Block Amounts)

Prepared by BPA, July 28, 2021

	October	November	December
Hours	744	721	744

Step 4: Monthly Tier 1 Block Amount Calculations

Monthly Block Shaping Factors	0.034	0.149	0.135
Monthly T1 Block Amounts (MWh)	1,892	8,293	7,514
Monthly T2 Block Amounts (MWh)	0	0	0

13/ Exhibit C, Section 1.2.1.4 states that monthly Tier 1 Block amo Shaping Factors are in Exhibit C, Section 1.2.13

Diurnal Shaping Factors			
Monthly Block HLH Shaping Factors	N/A	N/A	N/A
Monthly Block LLH Shaping Factors	N/A	N/A	N/A

14/ Diurnal Shaping Factors per Exhibit C, Section 1.2.2.4 if custom

Total - T1 Block Amounts (MW/hr)	3.0	12.0	10.0
HLH - T1 Block Amounts (MW/hr)	3.0	12.0	10.0
LLH - T1 Block Amounts (MW/hr)	3.0	12.0	10.0

15/ Shaped within-month Block Amounts arre megawatt per hour and rounded to a whole number. Flat within-month Block Amounts rounded to a whole number. The diurnal amounts go into section 1

Tier 1 and Tier 2 Block Amounts (MWh)	2,232	8,652	7,440

Step 5: Net Requirement Calculations (and Unspecified Resources Amounts)

TRL Forecast Energy (MWh)	22,160	44,654	52,077
TRL Forecast Peak (MW)	132.6	149.7	157.1
NLSL Resources (MWh)	0	14,420	14,880
Existing Resources (MWh)	72,838	38,393	53,315
Monthly Gross Requirements (MWh)	-50,678	-8,159	-16,118

16/ TRL Forecast submitted by customer and approved by BPA (or I Existing Resources from Exhibit A. Monthly Gross Requirements ec

New Specified Resources (MWh)	0	0	0
New Specified Resources (aMW)	0.000	0.000	0.000
Unspecified Resource Amts (MWh)	0	0	0
Unspecified Resource Amts (aMW)	0.000	0.000	0.000

17/ New Specified Resouces can be added to serve Above-RHWM then customer may do so but the amounts will be reduced to matc

Net Requirement Forecast (MWh)	(50,678)	(8,159)	(16,118)

18/ Net Requirements equals TRL less NLSLs, Existing Resources, N

NLSL Calculations (if applicable)

Prepared by BPA, July 28, 2021

	October	November	December
NLSL Forecast (MWh)	0	14,420	14,880
Resources Serving an NLSL (MWh)	42,751	41,372	42,751
Change to NLSL Resources (MWh)	-42,751	-26,952	-27,871
Updated Resources Serving NLSL (MWh)	0	14,420	14,880

18/ Original resource amounts from Exhibit A. Update NLSL resou

Change to Existing Resources (MWh)	42,751	26,952	31,212
Change to Existing Resources (aMW)	57.461	37.381	41.952
Updated Total Existing Resources (MWh)	72,838	38,393	53,315
Updated Total Existing Resources (aMW)	97.901	53.250	71.660

19/ If customer has a single resource split amongst NLSL and non-N

Removal of Existing Resources in Second Year of Rate Period (if applicable)

Prepared by BPA, July 28, 2021

0 1st Year = 0, Second Year = 1

[redacted]

[redacted]

29/ Existing Resource Removal for Subsequent Fiscal Years of Each Rate Period (section 10.5 of the Slice/Block Contracts) is appli
that is less than the preliminary Net Requirement in the first year of a rate period. Preliminary Net Requirement means BPA's for

Customer Specific Data for Fiscal Year		2021	2021	2021
Prepared by BPA, July 28, 2021		10	11	12
RHWM	24.581	416	400	416
		328	321	328
BES Number	10306			
T2 Block Amounts	0			
TRL Forecast - Energy (MWh)		22,160	44,654	52,077
TRL Forecast - Peak (MW)		132.585	149.663	157.084
NLSL Forecast		0	14,420	14,880
Existing		30,087	11,441	22,103
New		0	0	0
NLSL		42,751	41,372	42,751
Block Shaping Factors		0.034	0.149	0.135
HLH Shaping Factors		0.559	0.555	0.559
LLH Shaping Factors		0.419	0.445	0.462
[redacted]				
Existing Resource Removal Shape		0.119	0.039	0.084
New Resource Removal Shape		0.000	0.000	0.000

Customer Charges and Load Shaping Charges
Prepared by BPA, July 28, 2021

	October	November	December
HLH by Month	416	400	416
LLH by Month	328	321	328
RHWM T1 System Capability HLH (MWh)	2,920,790	3,537,945	3,223,873
RHWM T1 System Capability LLH (MWh)	1,633,134	2,227,488	2,419,335

BP-22 Final Proposal Rates			
Composite Rate (TOCA) ($$/%)	$1,998,417	$1,998,417	$1,998,417
Non-Slice Rate ($$/%)	($329,943)	($329,943)	($329,943)
Slice Rate ($$/%)	$0	$0	$0
Load Shaping - HLH ($$/MWh)	$29.92	$31.71	$38.76
Load Shaping - LLH ($$/MWh)	$28.27	$29.14	$32.05
Financial Reserves Policy Surcharge	$0.00	$0.00	$0.00
Financial Reserves Policy Amount	**$0.0**	$-Millions	
Financial Reserves Policy Surcharge	$0.00		
FY2022 Billing Determinants			
TOCA %	0.09432%	0.09432%	0.09432%
Non-Slice TOCA %	0.09432%	0.09432%	0.09432%
Load Shaping - HLH (MWh)	-1,507	1,463	1,119
Load Shaping - LLH (MWh)	-556	1,751	998
FY2022 Tier 1 Power Charges without Low Density Discounts or Irrigation Rate Discounts			

Composite Charge	$188,491	$188,491	$188,491
Non-Slice Charge	($31,120)	($31,120)	($31,120)
Load Shaping - HLH	($45,086)	$46,392	$43,382
Load Shaping - LLH	($15,729)	$51,025	$31,989
Financial Reserves Policy Surcharge	$0	$0	$0
Total	$96,556	$254,788	$232,742

Steps in calculating Load Shaping Billing Determinants			
System Shaped Load HLH (MWh)	2,755	3,337	3,041
System Shaped Load LLH (MWh)	1,540	2,101	2,282
Actual Tier 1 Load HLH (MWh)	1,248	4,800	4,160
Actual Tier 1 Load LLH (MWh)	984	3,852	3,280

ation		Step 3: Critical Slice & Block Amounts (with TOCAs)	
		(in annual aMW)	
6.354		Tier 2 Block Amounts	0.000
0.000		Tier 1 Block Amounts 11/	6.354
6.354		Net Requirements	6.354
0.000		TOCAs 12/	
		Sum of RHWM	6736.361
less T2		Non-Slice TOCA	0.09432%
sources and		TOCA	0.09432%
eater than			
customer needs		Notes:	
T2 remarketing		11/ Tier 1 Block Amounts equal Net Requirement less Tier 2 Amounts.	
Contract.		Annual Tier 1 Block Amounts (in aMW) go into section 1.1 of Exhibit C.	
ent Amounts		12/ TOCA equals minimum of Net Requirement or RHWM,	
n made by the		divided by the Sum of RHWM. Sum of RHWM in cell J18.	
2.5 of Exhibit C.		Non-Slice TOCA equals TOCA.	
uirements.			

January	February	March	April	May	June
744	672	743	720	744	720
0.190	0.168	0.159	0.010	0.000	0.000
10,575	9,351	8,850	557	0	0
0	0	0	0	0	0

unts in MWh are equal to the Monthly Shaping Factors * Annual Tier 1 Block Amounts in aMW (see Step 3) * Hours in Fiscal Year

N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A

er elected Tier 1 Block within-month shaped to their Net Requirement. Not applicable to customers who elected flat Tier 1 block within

14.0	14.0	12.0	1.0	0.0	0.0
14.0	14.0	12.0	1.0	0.0	0.0
14.0	14.0	12.0	1.0	0.0	0.0

amounts equal to the monthly MWh amounts calculated per 1.2.14 of Exhibit C multiplied by the diurnal shaping factor, divided by the
are megawatt per hour amounts equal to the monthly MWh amounts calculated per 1.2.14 of Exhibit C divided by the hours in the mc
1.3 of Exhibit C. Due to rounding the total megawatt-hours established in cell O55 will be different than the megawatt-hours calculatec

10,416	9,408	8,916	720	0	0

50,733	96,860	102,291	95,182	93,896	89,661
200.4	190.8	183.8	175.8	171.9	159.6
14,880	67,200	74,300	72,000	74,400	72,000
39,102	2,574	2,846	3,802	11,203	7,456
-3,249	27,086	25,145	19,380	8,293	10,205

BPA forecast if customer forecast not approved.) TRL Forecast (energy and peak) goes into section 1.1 of Exhibit A. If NLSL see page 3 f
uals TRL less NLSLs and Exisiting Resources. Need to add New Resources if customer has Above-RHWM Load before calculating Net Re

0	0	0	0	0	0
0.000	0.000	0.000	0.000	0.000	0.000
0	0	0	0	0	0
0.000	0.000	0.000	0.000	0.000	0.000

Load. If customer must dedicate New Specified Resources (ie Hydro Resources) and does not have enough (or any) Above-RHWM Loac
h the Above-RHWM Load. If New Specified Resources were not added to serve Above-RHWM Load, then Unspecified Resource Amour

(3,249)	27,086	25,145	19,380	8,293	10,205

ew Resources (Specified and Unspecified), and plus T2 Amounts. Net Requirements goes into section 1.2 of Exhibit A.

Revised: No Oct Load, Mill starts in Feb, Crypto flat at 20 MW starting Nov

January	February	March	April	May	June
14,880	67,200	74,300	72,000	74,400	72,000
42,751	38,614	42,751	41,372	42,751	41,372
-27,871	28,586	31,549	30,628	31,649	30,628
14,880	67,200	74,300	72,000	74,400	72,000

ces in Exhibit A to match NLSL forecast.

27,871	-4,344	-4,194	-29,566	-31,649	-30,628
37.461	-6.464	-5.645	-41.064	-42.539	-42.539
39,102	2,574	2,846	3,802	11,203	7,456
52.556	3.830	3.830	5.281	15.058	10.356

NLSL load, then balance the single resource amounts to match the NLSL forecast keeping the total dedicated amounts the same.

[redacted]

[redacted]

cable for customers that have Existing Resources and have a Preliminary Net Requirement in the second year of a Rate Period
ecast of Customer's Net Requirement for each Fiscal Year prior to the removal of any resources in accordance with section 10.

2022	2022	2022	2022	2022	2022
1	2	3	4	5	6
400	384	432	416	400	416
344	288	311	304	344	304
50,733	96,860	102,291	95,182	93,896	89,661
200.391	190.756	183.772	175.781	171.924	159.600
14,880	67,200	74,300	72,000	74,400	72,000
11,231	6,918	7,040	33,368	42,852	38,084
0	0	0	0	0	0
42,751	38,614	42,751	41,372	42,751	41,372
0.190	0.168	0.159	0.010	0.000	0.000
0.538	0.571	0.581	0.578	0.538	0.578
0.441	0.425	0.440	0.422	0.462	0.422
0.037	0.020	0.019	0.133	0.173	0.154
0.000	0.000	0.000	0.000	0.000	0.000

January	February	March	April	May	June
400	384	432	416	400	416
344	288	311	304	344	304
2,651,580	2,346,690	2,961,839	2,307,314	3,495,710	3,952,933
2,009,470	1,693,144	1,860,906	1,436,906	1,691,935	1,590,174
$1,998,417	$1,998,417	$1,998,417	$1,998,417	$1,998,417	$1,998,417
($329,943)	($329,943)	($329,943)	($329,943)	($329,943)	($329,943)
$0	$0	$0	$0	$0	$0
$34.29	$34.79	$27.57	$20.71	$16.28	$17.15
$25.85	$28.29	$28.44	$25.66	$16.30	$10.62
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
0.09432%	0.09432%	0.09432%	0.09432%	0.09432%	0.09432%
0.09432%	0.09432%	0.09432%	0.09432%	0.09432%	0.09432%
3,099	3,163	2,390	-1,760	-3,297	-3,728
2,921	2,435	1,977	-1,051	-1,596	-1,500

$188,491	$188,491	$188,491	$188,491	$188,491	$188,491
($31,120)	($31,120)	($31,120)	($31,120)	($31,120)	($31,120)
$106,266	$110,027	$65,903	($36,455)	($53,678)	($63,942)
$75,499	$68,887	$56,220	($26,976)	($26,012)	($15,928)
$0	$0	$0	$0	$0	$0
$339,136	$336,285	$279,494	$93,940	$77,681	$77,501
2,501	2,213	2,794	2,176	3,297	3,728
1,895	1,597	1,755	1,355	1,596	1,500
5,600	5,376	5,184	416	0	0
4,816	4,032	3,732	304	0	0

July	August	September	ANNUAL	*aMW*
744	744	720	8,760	
0.038	0.039	0.078	1.000	
2,115	2,171	4,341	55,658	*6.354*
0	0	0	0	*0.000*
N/A	N/A	N/A		
N/A	N/A	N/A		

ı-month shape.

3.0	3.0	6.0	56,568	*6.458*
3.0	3.0	6.0		
3.0	3.0	6.0		

hours in the month,
nth,
l in cell O50.

2,232	2,232	4,320	56,568	*6.458*

92,444	92,183	90,119	922,259	*105.281*
161.8	156.7	163.8	N/A	*N/A*
74,400	74,400	72,000	624,880	*71.333*
3,668	3,477	3,046	241,720	*27.594*
14,376	14,306	15,073	55,659	*6.354*

or additional calculations.
quirements.

0	0	0	0	*0.000*
0.000	0.000	0.000		
0	0	0	0	*0.000*
0.000	0.000	0.000		

l,
ıts will be added.

14,376	14,306	15,073	55,659	*6.354*

July	August	September	ANNUAL	*aMW*
74,400	74,400	72,000	624,880	*71.333*
42,751	42,751	41,372	503,359	*57.461*
31,649	31,649	30,628	121,521	*13.872*
74,400	74,400	72,000	624,880	*71.333*
-19,615	-18,575	-11,293	-21,078	*-2.406*
-26.364	-24.966	-15.685		
3,668	3,477	3,046	241,720	*27.594*
4.930	4.673	4.231		

[redacted]

2022	2022	2022		
7	8	9	Annual	aMW
400	432	400		
344	312	320		
92,444	92,183	90,119	922,259	*105.281*
161.786	156.652	163.785		
74,400	74,400	72,000	624,880	*71.333*
23,283	22,052	14,339	262,798	*30.000*
0	0	0	0	*0.000*
42,751	42,751	41,372	503,359	*57.461*
0.038	0.039	0.078	1.000	
0.538	0.581	0.556		
0.441	0.441	0.444		
0.089	0.084	0.051	1.000	
0.000	0.000	0.000		

July	August	September	ANNUAL	*aMW*
400	432	400	4912	
344	312	320	3848	
3,505,339	3,425,259	2,999,685	37,328,957	7,599.543
1,757,589	1,660,955	1,700,508	21,681,545	5,634.497

$1,998,417	$1,998,417	$1,998,417
($329,943)	($329,943)	($329,943)
$0	$0	$0
$36.83	$35.87	$28.15
$21.36	$26.85	$28.95
$0.00	$0.00	$0.00

0.09432%	0.09432%	0.09432%
0.09432%	0.09432%	0.09432%
-2,106	-1,935	-429
-626	-631	316

$188,491	$188,491	$188,491	$2,261,892	
($31,120)	($31,120)	($31,120)	($373,440)	
($77,573)	($69,398)	($12,085)	$13,753	
($13,366)	($16,932)	$9,151	$177,828	
$0	$0	$0	$0	
$66,432	$71,041	$154,437	$2,080,033	
3,306	3,231	2,829	35,209	7
1,658	1,567	1,604	20,450	5
1,200	1,296	2,400	31,680	6
1,032	936	1,920	24,888	6

6736

FY2022 Annual Net Requirement Calculations and Block Amounts

Prepared by BPA, July 28, 2021

Customer Name	PEND OREILLE PUD
BES Number	10306
Fiscal Year	2022
Hours	8,760

Step 1: Above-RHWM Load Calculation

(in annual aMW)

TRL Forecast 1/	145.895
NLSL Resources 2/	111.947
Existing Resources 3/	17.315
Gross Requirements 4/	16.633
RHWM 5/	24.581
Headroom 6/	7.948

Notes:
1/ TRL Forecast submitted by customer and approved by BPA (or BPA forecast if customer submitted forecast deemed not reasonable.)
2/ If NLSL see page 3 for additional calculations.
3/ Existing Resources are from Exhibit A and do not include resources serving NLSLs. Existing Resources can be removed in the second year of a Rate Period. See page 3 for removal of Existing Resource calculations.
4/ Gross Requirements is a preliminary Net Requirement calculation (preliminary since New Resources to serve Above-RHWM Load have not yet been added.)
5/ RHWM is from RHWM Process Outputs spreadsheet published on September 28, 2012, with updates for Provisional HWM if necessary.
6/ Headroom, if RHWM is greater than Gross Req, Above-RHWM Load, if RHWM is less than Gross Req.

Step 2: Annual Net Requirement Calcul

(in annual aMW)

Gross Requirements 7/
New Resources 8/
Net Requirements (NR) 9/

Tier 2 Block Amounts 10/

Notes:
7/ Gross Requirements from Step 1.
8/ New Resources equal Above-RHWM Load Amounts. If customer has New Specified Re T2 Block Amounts that sum to an amount gr the customer's Above-RHWM Load, then the to determine the order of resource removal/ per section 10 of the body of the Slice/Block
9/ Net Requirements equals Gross Requirem less New Resources.
10/ T2 Amounts based on customer's electio September 30, 2011 Notice Deadline. If T2 Amounts, then amounts go into section T2 Amounts plus T1 Amounts equal Net Requ

Monthly Net Requirement Calculations (with Block Amounts)

Prepared by BPA, July 28, 2021

	October	November	December
Hours	744	721	744

Step 4: Monthly Tier 1 Block Amount Calculations

Monthly Block Shaping Factors	0.034	0.149	0.135
Monthly T1 Block Amounts (MWh)	4,954	21,710	19,670
Monthly T2 Block Amounts (MWh)	0	0	0

13/ Exhibit C, Section 1.2.1.4 states that monthly Tier 1 Block amo Shaping Factors are in Exhibit C, Section 1.2.13

Diurnal Shaping Factors			
Monthly Block HLH Shaping Factors	N/A	N/A	N/A
Monthly Block LLH Shaping Factors	N/A	N/A	N/A

14/ Diurnal Shaping Factors per Exhibit C, Section 1.2.2.4 if custom

Total - T1 Block Amounts (MW/hr)	7.0	30.0	26.0
HLH - T1 Block Amounts (MW/hr)	7.0	30.0	26.0
LLH - T1 Block Amounts (MW/hr)	7.0	30.0	26.0

15/ Shaped within-month Block Amounts arre megawatt per hour and rounded to a whole number. Flat within-month Block Amounts rounded to a whole number. The diurnal amounts go into section 1

Tier 1 and Tier 2 Block Amounts (MWh)	5,208	21,630	19,344

Step 5: Net Requirement Calculations (and Unspecified Resources Amounts)

TRL Forecast Energy (MWh)	22,160	44,654	115,317
TRL Forecast Peak (MW)	132.6	149.7	157.1
NLSL Resources (MWh)	0	14,420	78,120
Existing Resources (MWh)	72,838	38,393	3,234
Monthly Gross Requirements (MWh)	-50,678	-8,159	33,963

16/ TRL Forecast submitted by customer and approved by BPA (or I Existing Resources from Exhibit A. Monthly Gross Requirements ec

New Specified Resources (MWh)	0	0	0
New Specified Resources (aMW)	0.000	0.000	0.000
Unspecified Resource Amts (MWh)	0	0	0
Unspecified Resource Amts (aMW)	0.000	0.000	0.000

17/ New Specified Resouces can be added to serve Above-RHWM then customer may do so but the amounts will be reduced to matc

Net Requirement Forecast (MWh)	(50,678)	(8,159)	33,963

18/ Net Requirements equals TRL less NLSLs, Existing Resources, N

NLSL Calculations (if applicable)

Prepared by BPA, July 28, 2021

	October	November	December
NLSL Forecast (MWh)	0	14,420	78,120
Resources Serving an NLSL (MWh)	42,751	41,372	42,751
Change to NLSL Resources (MWh)	-42,751	-26,952	35,369
Updated Resources Serving NLSL (MWh)	0	14,420	78,120

18/ Original resource amounts from Exhibit A. Update NLSL resou

Change to Existing Resources (MWh)	42,751	26,952	-18,869
Change to Existing Resources (aMW)	57.461	37.381	-25.362
Updated Total Existing Resources (MWh)	72,838	38,393	3,234
Updated Total Existing Resources (aMW)	97.901	53.250	4.347

19/ If customer has a single resource split amongst NLSL and non-N

Removal of Existing Resources in Second Year of Rate Period (if applicable)

Prepared by BPA, July 28, 2021

0 1st Year = 0, Second Year = 1

[redacted]

[redacted]

29/ Existing Resource Removal for Subsequent Fiscal Years of Each Rate Period (section 10.5 of the Slice/Block Contracts) is appli
that is less than the preliminary Net Requirement in the first year of a rate period. Preliminary Net Requirement means BPA's for

Customer Specific Data for Fiscal Year		2021	2021	2021
Prepared by BPA, July 28, 2021		10	11	12
RHWM	24.581	416	400	416
		328	321	328
BES Number	10306			
T2 Block Amounts	0			
TRL Forecast - Energy (MWh)		22,160	44,654	115,317
TRL Forecast - Peak (MW)		132.585	149.663	157.084
NLSL Forecast		0	14,420	78,120
Existing		30,087	11,441	22,103
New		0	0	0
NLSL		42,751	41,372	42,751
Block Shaping Factors		0.034	0.149	0.135
HLH Shaping Factors		0.559	0.555	0.559
LLH Shaping Factors		0.419	0.445	0.462
[redacted]				
Existing Resource Removal Shape		0.119	0.039	0.084
New Resource Removal Shape		0.000	0.000	0.000

Customer Charges and Load Shaping Charges
Prepared by BPA, July 28, 2021

	October	November	December
HLH by Month	416	400	416
LLH by Month	328	321	328
RHWM T1 System Capability HLH (MWh)	2,920,790	3,537,945	3,223,873
RHWM T1 System Capability LLH (MWh)	1,633,134	2,227,488	2,419,335

BP-22 Final Proposal Rates			
Composite Rate (TOCA) ($$/%)	$1,998,417	$1,998,417	$1,998,417
Non-Slice Rate ($$/%)	($329,943)	($329,943)	($329,943)
Slice Rate ($$/%)	$0	$0	$0
Load Shaping - HLH ($$/MWh)	$29.92	$31.71	$38.76
Load Shaping - LLH ($$/MWh)	$28.27	$29.14	$32.05
Financial Reserves Policy Surcharge	$0.00	$0.00	$0.00
Financial Reserves Policy Amount	**$0.0**	$-Millions	
Financial Reserves Policy Surcharge	$0.00		
FY2022 Billing Determinants			
TOCA %	0.24691%	0.24691%	0.24691%
Non-Slice TOCA %	0.24691%	0.24691%	0.24691%
Load Shaping - HLH (MWh)	-4,300	3,264	2,856
Load Shaping - LLH (MWh)	-1,736	4,130	2,554
FY2022 Tier 1 Power Charges without Low Density Discounts or Irrigation Rate Discounts			

Composite Charge	$493,429	$493,429	$493,429
Non-Slice Charge	($81,466)	($81,466)	($81,466)
Load Shaping - HLH	($128,648)	$103,516	$110,696
Load Shaping - LLH	($49,087)	$120,351	$81,869
Financial Reserves Policy Surcharge	$0	$0	$0
Total	$234,228	$635,830	$604,528

Steps in calculating Load Shaping Billing Determinants			
System Shaped Load HLH (MWh)	7,212	8,736	7,960
System Shaped Load LLH (MWh)	4,032	5,500	5,974
Actual Tier 1 Load HLH (MWh)	2,912	12,000	10,816
Actual Tier 1 Load LLH (MWh)	2,296	9,630	8,528

ation	Step 3: Critical Slice & Block Amounts (with TOCAs) *(in annual aMW)*	
16.633	Tier 2 Block Amounts	0.000
0.000	Tier 1 Block Amounts 11/	16.633
16.633	Net Requirements	16.633
0.000	TOCAs 12/	
	Sum of RHWM	6736.361
less T2	Non-Slice TOCA	0.24691%
sources and	TOCA	0.24691%
eater than		
customer needs	Notes:	
T2 remarketing	11/ Tier 1 Block Amounts equal Net Requirement less Tier 2 Amounts.	
Contract.	Annual Tier 1 Block Amounts (in aMW) go into section 1.1 of Exhibit C.	
nent Amounts	12/ TOCA equals minimum of Net Requirement or RHWM,	
	divided by the Sum of RHWM. Sum of RHWM in cell J18.	
n made by the	Non-Slice TOCA equals TOCA.	
2.5 of Exhibit C.		
uirements.		

January	February	March	April	May	June
744	672	743	720	744	720
0.190	0.168	0.159	0.010	0.000	0.000
27,684	24,478	23,167	1,457	0	0
0	0	0	0	0	0

unts in MWh are equal to the Monthly Shaping Factors * Annual Tier 1 Block Amounts in aMW (see Step 3) * Hours in Fiscal Year

N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A

er elected Tier 1 Block within-month shaped to their Net Requirement. Not applicable to customers who elected flat Tier 1 block within

37.0	36.0	31.0	2.0	0.0	0.0
37.0	36.0	31.0	2.0	0.0	0.0
37.0	36.0	31.0	2.0	0.0	0.0

amounts equal to the monthly MWh amounts calculated per 1.2.14 of Exhibit C multiplied by the diurnal shaping factor, divided by the
are megawatt per hour amounts equal to the monthly MWh amounts calculated per 1.2.14 of Exhibit C divided by the hours in the mc
1.3 of Exhibit C. Due to rounding the total megawatt-hours established in cell O55 will be different than the megawatt-hours calculatec

27,528	24,192	23,033	1,440	0	0

113,973	100,220	134,983	126,862	126,632	121,341
200.4	190.8	183.8	175.8	171.9	159.6
78,120	70,560	106,992	103,680	107,136	103,680
3,073	2,574	2,846	3,802	8,002	6,729
32,780	27,086	25,145	19,380	11,494	10,932

BPA forecast if customer forecast not approved.) TRL Forecast (energy and peak) goes into section 1.1 of Exhibit A. If NLSL see page 3 f
uals TRL less NLSLs and Exisiting Resources. Need to add New Resources if customer has Above-RHWM Load before calculating Net Re

0	0	0	0	0	0
0.000	0.000	0.000	0.000	0.000	0.000
0	0	0	0	0	0
0.000	0.000	0.000	0.000	0.000	0.000

Load. If customer must dedicate New Specified Resources (ie Hydro Resources) and does not have enough (or any) Above-RHWM Loac
h the Above-RHWM Load. If New Specified Resources were not added to serve Above-RHWM Load, then Unspecified Resource Amour

32,780	27,086	25,145	19,380	11,494	10,932

ew Resources (Specified and Unspecified), and plus T2 Amounts. Net Requirements goes into section 1.2 of Exhibit A.

Revised: No Oct Load, Mill starts in December, Crypto ramp up starting Nov

January	February	March	April	May	June
78,120	70,560	106,992	103,680	107,136	103,680
42,751	38,614	42,751	41,372	42,751	41,372
35,369	31,946	64,241	62,308	64,385	62,308
78,120	70,560	106,992	103,680	107,136	103,680

rces in Exhibit A to match NLSL forecast.

-8,158	-4,344	-4,194	-29,566	-34,850	-31,355
-10.965	-6.464	-5.645	-41.064	-46.841	-43.549
3,073	2,574	2,846	3,802	8,002	6,729
4.130	3.830	3.830	5.281	10.755	9.346

NLSL load, then balance the single resource amounts to match the NLSL forecast keeping the total dedicated amounts the same.

[redacted]

[redacted]

cable for customers that have Existing Resources and have a Preliminary Net Requirement in the second year of a Rate Period
ecast of Customer's Net Requirement for each Fiscal Year prior to the removal of any resources in accordance with section 10.

2022	2022	2022	2022	2022	2022
1	2	3	4	5	6
400	384	432	416	400	416
344	288	311	304	344	304
113,973	100,220	134,983	126,862	126,632	121,341
200.391	190.756	183.772	175.781	171.924	159.600
78,120	70,560	106,992	103,680	107,136	103,680
11,231	6,918	7,040	33,368	42,852	38,084
0	0	0	0	0	0
42,751	38,614	42,751	41,372	42,751	41,372
0.190	0.168	0.159	0.010	0.000	0.000
0.538	0.571	0.581	0.578	0.538	0.578
0.441	0.425	0.440	0.422	0.462	0.422
0.037	0.020	0.019	0.133	0.173	0.154
0.000	0.000	0.000	0.000	0.000	0.000

January	February	March	April	May	June
400	384	432	416	400	416
344	288	311	304	344	304
2,651,580	2,346,690	2,961,839	2,307,314	3,495,710	3,952,933
2,009,470	1,693,144	1,860,906	1,436,906	1,691,935	1,590,174
$1,998,417	$1,998,417	$1,998,417	$1,998,417	$1,998,417	$1,998,417
($329,943)	($329,943)	($329,943)	($329,943)	($329,943)	($329,943)
$0	$0	$0	$0	$0	$0
$34.29	$34.79	$27.57	$20.71	$16.28	$17.15
$25.85	$28.29	$28.44	$25.66	$16.30	$10.62
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
0.24691%	0.24691%	0.24691%	0.24691%	0.24691%	0.24691%
0.24691%	0.24691%	0.24691%	0.24691%	0.24691%	0.24691%
8,253	8,030	6,079	-4,865	-8,631	-9,760
7,766	6,187	5,046	-2,940	-4,178	-3,926

$493,429	$493,429	$493,429	$493,429	$493,429	$493,429
($81,466)	($81,466)	($81,466)	($81,466)	($81,466)	($81,466)
$282,995	$279,356	$167,596	($100,754)	($140,517)	($167,387)
$200,762	$175,043	$143,515	($75,437)	($68,094)	($41,697)
$0	$0	$0	$0	$0	$0
$895,720	$866,362	$723,074	$235,772	$203,352	$202,879
6,547	5,794	7,313	5,697	8,631	9,760
4,962	4,181	4,595	3,548	4,178	3,926
14,800	13,824	13,392	832	0	0
12,728	10,368	9,641	608	0	0

July	August	September	ANNUAL	*aMW*
744	744	720	8,760	
0.038	0.039	0.078	1.000	
5,537	5,682	11,365	145,704	*16.633*
0	0	0	0	*0.000*
N/A	N/A	N/A		
N/A	N/A	N/A		

ı-month shape.

7.0	8.0	16.0	145,055	*16.559*
7.0	8.0	16.0		
7.0	8.0	16.0		

hours in the month,
nth,
l in cell O50.

5,208	5,952	11,520	145,055	*16.559*

125,180	124,919	121,799	1,278,039	*145.895*
161.8	156.7	163.8	N/A	*N/A*
107,136	107,136	103,680	980,660	*111.947*
3,668	3,477	3,046	151,682	*17.315*
14,376	14,306	15,073	145,697	*16.633*

or additional calculations.
quirements.

0	0	0	0	*0.000*
0.000	0.000	0.000		
0	0	0	0	*0.000*
0.000	0.000	0.000		

l,
ıts will be added.

14,376	14,306	15,073	145,697	*16.633*

July	August	September	ANNUAL	*aMW*
107,136	107,136	103,680	980,660	*111.947*
42,751	42,751	41,372	503,359	*57.461*
64,385	64,385	62,308	477,301	*54.486*
107,136	107,136	103,680	980,660	*111.947*
-19,615	-18,575	-11,293	-111,116	*-12.684*
-26.364	-24.966	-15.685		
3,668	3,477	3,046	151,682	*17.315*
4.930	4.673	4.231		

[redacted]

2022	2022	2022		
7	8	9	Annual	aMW
400	432	400		
344	312	320		
125,180	124,919	121,799	1,278,039	*145.895*
161.786	156.652	163.785		
107,136	107,136	103,680	980,660	*111.947*
23,283	22,052	14,339	262,798	*30.000*
0	0	0	0	*0.000*
42,751	42,751	41,372	503,359	*57.461*
0.038	0.039	0.078	1.000	
0.538	0.581	0.556		
0.441	0.441	0.444		
0.089	0.084	0.051	1.000	
0.000	0.000	0.000		

July	August	September	ANNUAL	*aMW*
400	432	400	4912	
344	312	320	3848	
3,505,339	3,425,259	2,999,685	37,328,957	7,599.543
1,757,589	1,660,955	1,700,508	21,681,545	5,634.497

$1,998,417	$1,998,417	$1,998,417	
($329,943)	($329,943)	($329,943)	
$0	$0	$0	
$36.83	$35.87	$28.15	
$21.36	$26.85	$28.95	
$0.00	$0.00	$0.00	
0.24691%	0.24691%	0.24691%	
0.24691%	0.24691%	0.24691%	
-5,855	-5,001	-1,007	
-1,932	-1,605	921	

$493,429	$493,429	$493,429	$5,921,148	
($81,466)	($81,466)	($81,466)	($977,592)	
($215,641)	($179,397)	($28,334)	($16,519)	
($41,260)	($43,096)	$26,671	$429,540	
$0	$0	$0	$0	
$155,062	$189,470	$410,300	$5,356,577	
8,655	8,457	7,407	92,169	19
4,340	4,101	4,199	53,534	14
2,800	3,456	6,400	81,232	17
2,408	2,496	5,120	63,823	17

6736

FY2022 Annual Net Requirement Calculations and Block Amounts

Prepared by BPA, July 28, 2021

Customer Name	**PEND OREILLE PUD**
BES Number	10306
Fiscal Year	2022
Hours	8,760

Step 1: Above-RHWM Load Calculation

(in annual aMW)

TRL Forecast 1/	152.891
NLSL Resources 2/	118.943
Existing Resources 3/	13.264
Gross Requirements 4/	20.684
RHWM 5/	24.581
Headroom 6/	3.897

Notes:
1/ TRL Forecast submitted by customer and approved by BPA (or BPA forecast if customer submitted forecast deemed not reasonable.)
2/ If NLSL see page 3 for additional calculations.
3/ Existing Resources are from Exhibit A and do not include resources serving NLSLs. Existing Resources can be removed in the second year of a Rate Period. See page 3 for removal of Existing Resource calculations.
4/ Gross Requirements is a preliminary Net Requirement calculation (preliminary since New Resources to serve Above-RHWM Load have not yet been added.)
5/ RHWM is from RHWM Process Outputs spreadsheet published on September 28, 2012, with updates for Provisional HWM if necessary.
6/ Headroom, if RHWM is greater than Gross Req, Above-RHWM Load, if RHWM is less than Gross Req.

Step 2: Annual Net Requirement Calcul

(in annual aMW)

Gross Requirements 7/
New Resources 8/
Net Requirements (NR) 9/

Tier 2 Block Amounts 10/

Notes:
7/ Gross Requirements from Step 1.
8/ New Resources equal Above-RHWM Load Amounts. If customer has New Specified Re T2 Block Amounts that sum to an amount gr the customer's Above-RHWM Load, then the to determine the order of resource removal/ per section 10 of the body of the Slice/Block
9/ Net Requirements equals Gross Requirem less New Resources.
10/ T2 Amounts based on customer's electio September 30, 2011 Notice Deadline. If T2 Amounts, then amounts go into section T2 Amounts plus T1 Amounts equal Net Requ

Monthly Net Requirement Calculations (with Block Amounts)

Prepared by BPA, July 28, 2021

	October	November	December
Hours	744	721	744

Step 4: Monthly Tier 1 Block Amount Calculations

Monthly Block Shaping Factors	0.034	0.149	0.135
Monthly T1 Block Amounts (MWh)	6,160	26,997	24,461
Monthly T2 Block Amounts (MWh)	0	0	0

13/ Exhibit C, Section 1.2.1.4 states that monthly Tier 1 Block amo Shaping Factors are in Exhibit C, Section 1.2.13

Diurnal Shaping Factors			
Monthly Block HLH Shaping Factors	N/A	N/A	N/A
Monthly Block LLH Shaping Factors	N/A	N/A	N/A

14/ Diurnal Shaping Factors per Exhibit C, Section 1.2.2.4 if custom

Total - T1 Block Amounts (MW/hr)	8.0	37.0	33.0
HLH - T1 Block Amounts (MW/hr)	8.0	37.0	33.0
LLH - T1 Block Amounts (MW/hr)	8.0	37.0	33.0

15/ Shaped within-month Block Amounts arre megawatt per hour and rounded to a whole number. Flat within-month Block Amounts rounded to a whole number. The diurnal amounts go into section 1

Tier 1 and Tier 2 Block Amounts (MWh)	5,952	26,677	24,552

Step 5: Net Requirement Calculations (and Unspecified Resources Amounts)

TRL Forecast Energy (MWh)	22,160	105,939	115,317
TRL Forecast Peak (MW)	132.6	149.7	157.1
NLSL Resources (MWh)	0	75,705	78,120
Existing Resources (MWh)	72,838	2,905	3,234
Monthly Gross Requirements (MWh)	-50,678	27,329	33,963

16/ TRL Forecast submitted by customer and approved by BPA (or I Existing Resources from Exhibit A. Monthly Gross Requirements ec

New Specified Resources (MWh)	0	0	0
New Specified Resources (aMW)	0.000	0.000	0.000
Unspecified Resource Amts (MWh)	0	0	0
Unspecified Resource Amts (aMW)	0.000	0.000	0.000

17/ New Specified Resouces can be added to serve Above-RHWM then customer may do so but the amounts will be reduced to matc

Net Requirement Forecast (MWh)	(50,678)	27,329	33,963

18/ Net Requirements equals TRL less NLSLs, Existing Resources, N

NLSL Calculations (if applicable)

Prepared by BPA, July 28, 2021

	October	November	December
NLSL Forecast (MWh)	0	75,705	78,120
Resources Serving an NLSL (MWh)	42,751	41,372	42,751
Change to NLSL Resources (MWh)	-42,751	34,333	35,369
Updated Resources Serving NLSL (MWh)	0	75,705	78,120

18/ Original resource amounts from Exhibit A. Update NLSL resou

Change to Existing Resources (MWh)	42,751	-8,536	-18,869
Change to Existing Resources (aMW)	57.461	-11.839	-25.362
Updated Total Existing Resources (MWh)	72,838	2,905	3,234
Updated Total Existing Resources (aMW)	97.901	4.029	4.347

19/ If customer has a single resource split amongst NLSL and non-N

Removal of Existing Resources in Second Year of Rate Period (if applicable)

Prepared by BPA, July 28, 2021

0 1st Year = 0, Second Year = 1

[redacted]

[redacted]

29/ Existing Resource Removal for Subsequent Fiscal Years of Each Rate Period (section 10.5 of the Slice/Block Contracts) is appli
that is less than the preliminary Net Requirement in the first year of a rate period. Preliminary Net Requirement means BPA's for

Customer Specific Data for Fiscal Year		2021	2021	2021
Prepared by BPA, July 28, 2021		10	11	12
RHWM	24.581	416	400	416
		328	321	328
BES Number	10306			
T2 Block Amounts	0			
TRL Forecast - Energy (MWh)		22,160	105,939	115,317
TRL Forecast - Peak (MW)		132.585	149.663	157.084
NLSL Forecast		0	75,705	78,120
Existing		30,087	11,441	22,103
New		0	0	0
NLSL		42,751	41,372	42,751
Block Shaping Factors		0.034	0.149	0.135
HLH Shaping Factors		0.559	0.555	0.559
LLH Shaping Factors		0.419	0.445	0.462
[redacted]				
Existing Resource Removal Shape		0.119	0.039	0.084
New Resource Removal Shape		0.000	0.000	0.000

Customer Charges and Load Shaping Charges
Prepared by BPA, July 28, 2021

	October	November	December
HLH by Month	416	400	416
LLH by Month	328	321	328
RHWM T1 System Capability HLH (MWh)	2,920,790	3,537,945	3,223,873
RHWM T1 System Capability LLH (MWh)	1,633,134	2,227,488	2,419,335

BP-22 Final Proposal Rates			
Composite Rate (TOCA) ($$/%)	$1,998,417	$1,998,417	$1,998,417
Non-Slice Rate ($$/%)	($329,943)	($329,943)	($329,943)
Slice Rate ($$/%)	$0	$0	$0
Load Shaping - HLH ($$/MWh)	$29.92	$31.71	$38.76
Load Shaping - LLH ($$/MWh)	$28.27	$29.14	$32.05
Financial Reserves Policy Surcharge	$0.00	$0.00	$0.00
Financial Reserves Policy Amount	**$0.0**	$-Millions	
Financial Reserves Policy Surcharge	$0.00		
FY2022 Billing Determinants			
TOCA %	0.30705%	0.30705%	0.30705%
Non-Slice TOCA %	0.30705%	0.30705%	0.30705%
Load Shaping - HLH (MWh)	-5,640	3,937	3,829
Load Shaping - LLH (MWh)	-2,391	5,037	3,395
FY2022 Tier 1 Power Charges without Low Density Discounts or Irrigation Rate Discounts			

Composite Charge	$613,614	$613,614	$613,614
Non-Slice Charge	($101,309)	($101,309)	($101,309)
Load Shaping - HLH	($168,757)	$124,834	$148,416
Load Shaping - LLH	($67,581)	$146,793	$108,824
Financial Reserves Policy Surcharge	$0	$0	$0
Total	$275,967	$783,932	$769,545

Steps in calculating Load Shaping Billing Determinants			
System Shaped Load HLH (MWh)	8,968	10,863	9,899
System Shaped Load LLH (MWh)	5,015	6,840	7,429
Actual Tier 1 Load HLH (MWh)	3,328	14,800	13,728
Actual Tier 1 Load LLH (MWh)	2,624	11,877	10,824

ation	Step 3: Critical Slice & Block Amounts (with TOCAs) *(in annual aMW)*	
20.684	Tier 2 Block Amounts	0.000
0.000	Tier 1 Block Amounts 11/	20.684
20.684	Net Requirements	20.684
0.000	TOCAs 12/	
	Sum of RHWM	6736.361
less T2	Non-Slice TOCA	0.30705%
sources and	TOCA	0.30705%
eater than		
customer needs	Notes:	
T2 remarketing	11/ Tier 1 Block Amounts equal Net Requirement less Tier 2 Amounts.	
Contract.	Annual Tier 1 Block Amounts (in aMW) go into section 1.1 of Exhibit C.	
nent Amounts	12/ TOCA equals minimum of Net Requirement or RHWM,	
n made by the	divided by the Sum of RHWM. Sum of RHWM in cell J18.	
2.5 of Exhibit C.	Non-Slice TOCA equals TOCA.	
uirements.		

January	February	March	April	May	June
744	672	743	720	744	720
0.190	0.168	0.159	0.010	0.000	0.000
34,426	30,440	28,809	1,812	0	0
0	0	0	0	0	0

unts in MWh are equal to the Monthly Shaping Factors * Annual Tier 1 Block Amounts in aMW (see Step 3) * Hours in Fiscal Year

N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A

er elected Tier 1 Block within-month shaped to their Net Requirement. Not applicable to customers who elected flat Tier 1 block within

46.0	45.0	39.0	3.0	0.0	0.0
46.0	45.0	39.0	3.0	0.0	0.0
46.0	45.0	39.0	3.0	0.0	0.0

amounts equal to the monthly MWh amounts calculated per 1.2.14 of Exhibit C multiplied by the diurnal shaping factor, divided by the
are megawatt per hour amounts equal to the monthly MWh amounts calculated per 1.2.14 of Exhibit C divided by the hours in the mc
1.3 of Exhibit C. Due to rounding the total megawatt-hours established in cell O55 will be different than the megawatt-hours calculatec

34,224	30,240	28,977	2,160	0	0

113,973	100,220	134,983	126,862	126,632	121,341
200.4	190.8	183.8	175.8	171.9	159.6
78,120	70,560	106,992	103,680	107,136	103,680
3,073	2,574	2,846	3,802	8,002	6,729
32,780	27,086	25,145	19,380	11,494	10,932

BPA forecast if customer forecast not approved.) TRL Forecast (energy and peak) goes into section 1.1 of Exhibit A. If NLSL see page 3 f
uals TRL less NLSLs and Exisiting Resources. Need to add New Resources if customer has Above-RHWM Load before calculating Net Re

0	0	0	0	0	0
0.000	0.000	0.000	0.000	0.000	0.000
0	0	0	0	0	0
0.000	0.000	0.000	0.000	0.000	0.000

Load. If customer must dedicate New Specified Resources (ie Hydro Resources) and does not have enough (or any) Above-RHWM Loac
h the Above-RHWM Load. If New Specified Resources were not added to serve Above-RHWM Load, then Unspecified Resource Amour

32,780	27,086	25,145	19,380	11,494	10,932

ew Resources (Specified and Unspecified), and plus T2 Amounts. Net Requirements goes into section 1.2 of Exhibit A.

Revised: No Oct Load, Mill starts in Nov, Crypto ramp up starting Nov

January	February	March	April	May	June
78,120	70,560	106,992	103,680	107,136	103,680
42,751	38,614	42,751	41,372	42,751	41,372
35,369	31,946	64,241	62,308	64,385	62,308
78,120	70,560	106,992	103,680	107,136	103,680

rces in Exhibit A to match NLSL forecast.

-8,158	-4,344	-4,194	-29,566	-34,850	-31,355
-10.965	-6.464	-5.645	-41.064	-46.841	-43.549
3,073	2,574	2,846	3,802	8,002	6,729
4.130	3.830	3.830	5.281	10.755	9.346

NLSL load, then balance the single resource amounts to match the NLSL forecast keeping the total dedicated amounts the same.

[redacted]

[redacted]

cable for customers that have Existing Resources and have a Preliminary Net Requirement in the second year of a Rate Period
ecast of Customer's Net Requirement for each Fiscal Year prior to the removal of any resources in accordance with section 10.

2022	2022	2022	2022	2022	2022
1	2	3	4	5	6
400	384	432	416	400	416
344	288	311	304	344	304
113,973	100,220	134,983	126,862	126,632	121,341
200.391	190.756	183.772	175.781	171.924	159.600
78,120	70,560	106,992	103,680	107,136	103,680
11,231	6,918	7,040	33,368	42,852	38,084
0	0	0	0	0	0
42,751	38,614	42,751	41,372	42,751	41,372
0.190	0.168	0.159	0.010	0.000	0.000
0.538	0.571	0.581	0.578	0.538	0.578
0.441	0.425	0.440	0.422	0.462	0.422
0.037	0.020	0.019	0.133	0.173	0.154
0.000	0.000	0.000	0.000	0.000	0.000

January	February	March	April	May	June
400	384	432	416	400	416
344	288	311	304	344	304
2,651,580	2,346,690	2,961,839	2,307,314	3,495,710	3,952,933
2,009,470	1,693,144	1,860,906	1,436,906	1,691,935	1,590,174
$1,998,417	$1,998,417	$1,998,417	$1,998,417	$1,998,417	$1,998,417
($329,943)	($329,943)	($329,943)	($329,943)	($329,943)	($329,943)
$0	$0	$0	$0	$0	$0
$34.29	$34.79	$27.57	$20.71	$16.28	$17.15
$25.85	$28.29	$28.44	$25.66	$16.30	$10.62
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
0.30705%	0.30705%	0.30705%	0.30705%	0.30705%	0.30705%
0.30705%	0.30705%	0.30705%	0.30705%	0.30705%	0.30705%
10,258	10,074	7,754	-5,837	-10,734	-12,137
9,654	7,761	6,415	-3,500	-5,195	-4,883

$613,614	$613,614	$613,614	$613,614	$613,614	$613,614
($101,309)	($101,309)	($101,309)	($101,309)	($101,309)	($101,309)
$351,758	$350,491	$213,769	($120,876)	($174,743)	($208,158)
$249,554	$219,564	$182,445	($89,811)	($84,680)	($51,854)
$0	$0	$0	$0	$0	$0
$1,113,617	$1,082,360	$908,519	$301,618	$252,882	$252,293
8,142	7,206	9,094	7,085	10,734	12,137
6,170	5,199	5,714	4,412	5,195	4,883
18,400	17,280	16,848	1,248	0	0
15,824	12,960	12,129	912	0	0

July	August	September	ANNUAL	*aMW*
744	744	720	8,760	
0.038	0.039	0.078	1.000	
6,885	7,066	14,133	181,191	*20.684*
0	0	0	0	*0.000*
N/A	N/A	N/A		
N/A	N/A	N/A		

ı-month shape.

9.0	9.0	20.0	180,574	*20.613*
9.0	9.0	20.0		
9.0	9.0	20.0		

hours in the month,
nth,
l in cell O50.

6,696	6,696	14,400	180,574	*20.613*

125,180	124,919	121,799	1,339,324	*152.891*
161.8	156.7	163.8	N/A	*N/A*
107,136	107,136	103,680	1,041,945	*118.943*
3,668	3,477	3,046	116,194	*13.264*
14,376	14,306	15,073	181,185	*20.684*

or additional calculations.
quirements.

0	0	0	0	*0.000*
0.000	0.000	0.000		
0	0	0	0	*0.000*
0.000	0.000	0.000		

l,
ıts will be added.

14,376	14,306	15,073	181,185	*20.684*

July	August	September	ANNUAL	*aMW*
107,136	107,136	103,680	1,041,945	*118.943*
42,751	42,751	41,372	503,359	*57.461*
64,385	64,385	62,308	538,586	*61.482*
107,136	107,136	103,680	1,041,945	*118.943*
-19,615	-18,575	-11,293	-146,604	*-16.736*
-26.364	-24.966	-15.685		
3,668	3,477	3,046	116,194	*13.264*
4.930	4.673	4.231		

[redacted]

2022	2022	2022		
7	8	9	Annual	aMW
400	432	400		
344	312	320		
125,180	124,919	121,799	1,339,324	*152.891*
161.786	156.652	163.785		
107,136	107,136	103,680	1,041,945	*118.943*
23,283	22,052	14,339	262,798	*30.000*
0	0	0	0	*0.000*
42,751	42,751	41,372	503,359	*57.461*
0.038	0.039	0.078	1.000	
0.538	0.581	0.556		
0.441	0.441	0.444		
0.089	0.084	0.051	1.000	
0.000	0.000	0.000		

July	August	September	ANNUAL	*aMW*
400	432	400	4912	
344	312	320	3848	
3,505,339	3,425,259	2,999,685	37,328,957	7,599.543
1,757,589	1,660,955	1,700,508	21,681,545	5,634.497

$1,998,417	$1,998,417	$1,998,417
($329,943)	($329,943)	($329,943)
$0	$0	$0
$36.83	$35.87	$28.15
$21.36	$26.85	$28.95
$0.00	$0.00	$0.00
0.30705%	0.30705%	0.30705%
0.30705%	0.30705%	0.30705%
-7,163	-6,629	-1,211
-2,301	-2,292	1,179

$613,614	$613,614	$613,614	$7,363,368	
($101,309)	($101,309)	($101,309)	($1,215,708)	
($263,819)	($237,791)	($34,077)	($18,953)	
($49,142)	($61,539)	$34,120	$536,693	
$0	$0	$0	$0	
$199,344	$212,975	$512,348	$6,665,400	
10,763	10,517	9,211	114,619	23
5,397	5,100	5,221	66,573	17
3,600	3,888	8,000	101,120	21
3,096	2,808	6,400	79,454	21

6736

FY2022 Annual Net Requirement Calculations and Block Amounts

Prepared by BPA, July 28, 2021

Customer Name	**PEND OREILLE PUD**
BES Number	10306
Fiscal Year	2022
Hours	8,760

Step 1: Above-RHWM Load Calculation

(in annual aMW)

TRL Forecast 1/	139.851
NLSL Resources 2/	105.904
Existing Resources 3/	7.403
Gross Requirements 4/	26.544
RHWM 5/	24.581
Above-RHWM Load 6/	1.963

Notes:
1/ TRL Forecast submitted by customer and approved by BPA (or BPA forecast if customer submitted forecast deemed not reasonable.)
2/ If NLSL see page 3 for additional calculations.
3/ Existing Resources are from Exhibit A and do not include resources serving NLSLs. Existing Resources can be removed in the second year of a Rate Period. See page 3 for removal of Existing Resource calculations.
4/ Gross Requirements is a preliminary Net Requirement calculation (preliminary since New Resources to serve Above-RHWM Load have not yet been added.)
5/ RHWM is from RHWM Process Outputs spreadsheet published on September 28, 2012, with updates for Provisional HWM if necessary.
6/ Headroom, if RHWM is greater than Gross Req, Above-RHWM Load, if RHWM is less than Gross Req.

Step 2: Annual Net Requirement Calculation

(in annual aMW)

Gross Requirements 7/	26.544
New Resources 8/	1.963
Net Requirements (NR) 9/	24.581
Tier 2 Block Amounts 10/	0.000

Notes:
7/ Gross Requirements from Step 1.
8/ New Resources equal Above-RHWM Load less T2 Amounts. If customer has New Specified Resources and T2 Block Amounts that sum to an amount greater than the customer's Above-RHWM Load, then the customer needs to determine the order of resource removal/T2 remarketing per section 10 of the body of the Slice/Block Contract.
9/ Net Requirements equals Gross Requirement Amounts less New Resources.
10/ T2 Amounts based on customer's election made by the September 30, 2011 Notice Deadline.
If T2 Amounts, then amounts go into section 2.5 of Exhibit C.
T2 Amounts plus T1 Amounts equal Net Requirements.

Monthly Net Requirement Calculations (with Block Amounts)

Prepared by BPA, July 28, 2021

	October	November	December	January	February
Hours	744	721	744	744	672
Step 4: Monthly Tier 1 Block Amount Calculations					
Monthly Block Shaping Factors	0.034	0.149	0.135	0.190	0.168
Monthly T1 Block Amounts (MWh)	7,321	32,084	29,069	40,913	36,175
Monthly T2 Block Amounts (MWh)	0	0	0	0	0
13/ Exhibit C, Section 1.2.1.4 states that monthly Tier 1 Block amounts in MWh are equal to the Monthly Shapin Shaping Factors are in Exhibit C, Section 1.2.13					
Diurnal Shaping Factors					
Monthly Block HLH Shaping Factors	N/A	N/A	N/A	N/A	N/A
Monthly Block LLH Shaping Factors	N/A	N/A	N/A	N/A	N/A
14/ Diurnal Shaping Factors per Exhibit C, Section 1.2.2.4 if customer elected Tier 1 Block within-month shaped t					
Total - T1 Block Amounts (MW/hr)	10.0	44.0	39.0	55.0	54.0
HLH - T1 Block Amounts (MW/hr)	10.0	44.0	39.0	55.0	54.0
LLH - T1 Block Amounts (MW/hr)	10.0	44.0	39.0	55.0	54.0
15/ Shaped within-month Block Amounts arre megawatt per hour amounts equal to the monthly MWh amounts and rounded to a whole number. Flat within-month Block Amounts are megawatt per hour amounts equal to the rounded to a whole number. The diurnal amounts go into section 1.3 of Exhibit C. Due to rounding the total me					
Tier 1 and Tier 2 Block Amounts (MWh)	7,440	31,724	29,016	40,920	36,288
Step 5: Net Requirement Calculations (and Unspecified Resources Amounts)					
TRL Forecast Energy (MWh)	80,313	86,590	95,350	121,605	107,113
TRL Forecast Peak (MW)	132.6	149.7	157.1	200.4	190.8
NLSL Resources (MWh)	58,153	56,356	58,153	85,752	77,453
Existing Resources (MWh)	14,685	2,905	10,042	3,073	2,574
Monthly Gross Requirements (MWh)	7,475	27,329	27,155	32,780	27,086
16/ TRL Forecast submitted by customer and approved by BPA (or BPA forecast if customer forecast not approve Existing Resources from Exhibit A. Monthly Gross Requirements equals TRL less NLSLs and Exisiting Resources. N					
New Specified Resources (MWh)	0	0	0	0	0
New Specified Resources (aMW)	0.000	0.000	0.000	0.000	0.000
Unspecified Resource Amts (MWh)	1,460	1,415	1,460	1,460	1,319
Unspecified Resource Amts (aMW)	1.963	1.963	1.963	1.963	1.963

17/ New Specified Resouces can be added to serve Above-RHWM Load. If customer must dedicate New Specifie
then customer may do so but the amounts will be reduced to match the Above-RHWM Load. If New Specified Re

Net Requirement Forecast (MWh)	6,015	25,914	25,695	31,320	25,767

18/ Net Requirements equals TRL less NLSLs, Existing Resources, New Resources (Specified and Unspecified), an

NLSL Calculations (if applicable)

Prepared by BPA, July 28, 2021

	October	November	December	January	February
NLSL Forecast (MWh)	58,153	56,356	58,153	85,752	77,453
Resources Serving an NLSL (MWh)	42,751	41,372	42,751	42,751	38,614
Change to NLSL Resources (MWh)	15,402	14,984	15,402	43,001	38,839
Updated Resources Serving NLSL (MWh)	58,153	56,356	58,153	85,752	77,453

18/ Original resource amounts from Exhibit A. Update NLSL resources in Exhibit A to match NLSL forecast.

Change to Existing Resources (MWh)	-15,402	-8,536	-12,061	-8,158	-4,344
Change to Existing Resources (aMW)	-20.702	-11.839	-16.212	-10.965	-6.464
Updated Total Existing Resources (MWh)	14,685	2,905	10,042	3,073	2,574
Updated Total Existing Resources (aMW)	19.737	4.029	13.497	4.130	3.830

19/ If customer has a single resource split amongst NLSL and non-NLSL load, then balance the single resource an

Removal of Existing Resources in Second Year of Rate Period (if applicable)

Prepared by BPA, July 28, 2021 — 0 1st Year = 0, Second Year = 1

[redacted]

29/ Existing Resource Removal for Subsequent Fiscal Years of Each Rate Period (section 10.5 of the Slice/Block Contracts) is applicable for customers that have Existing Resour
that is less than the preliminary Net Requirement in the first year of a rate period. Preliminary Net Requirement means BPA's forecast of Customer's Net Requirement for each

Customer Specific Data for Fiscal Year	2021	2021	2021	2022	2022

Prepared by BPA, July 28, 2021		10	11	12	1	2
RHWM	24.581	416	400	416	400	384
		328	321	328	344	288
BES Number	10306					
T2 Block Amounts	0					
TRL Forecast - Energy (MWh)		80,313	86,590	95,350	121,605	107,113
TRL Forecast - Peak (MW)		132.585	149.663	157.084	200.391	190.756
NLSL Forecast		58,153	56,356	58,153	85,752	77,453
Existing		30,087	11,441	22,103	11,231	6,918
New		0	0	0	0	0
NLSL		42,751	41,372	42,751	42,751	38,614
Block Shaping Factors		0.034	0.149	0.135	0.190	0.168
HLH Shaping Factors		0.559	0.555	0.559	0.538	0.571
LLH Shaping Factors		0.419	0.445	0.462	0.441	0.425
[redacted]						
Existing Resource Removal Shape		0.119	0.039	0.084	0.037	0.020
New Resource Removal Shape		0.000	0.000	0.000	0.000	0.000

Customer Charges and Load Shaping Charges
Prepared by BPA, July 28, 2021

	October	November	December	January	February
HLH by Month	416	400	416	400	384
LLH by Month	328	321	328	344	288
RHWM T1 System Capability HLH (MWh)	2,920,790	3,537,945	3,223,873	2,651,580	2,346,690
RHWM T1 System Capability LLH (MWh)	1,633,134	2,227,488	2,419,335	2,009,470	1,693,144

BP-22 Final Proposal Rates					
Composite Rate (TOCA) ($$/%)	$1,998,417	$1,998,417	$1,998,417	$1,998,417	$1,998,417
Non-Slice Rate ($$/%)	($329,943)	($329,943)	($329,943)	($329,943)	($329,943)
Slice Rate ($$/%)	$0	$0	$0	$0	$0
Load Shaping - HLH ($$/MWh)	$29.92	$31.71	$38.76	$34.29	$34.79
Load Shaping - LLH ($$/MWh)	$28.27	$29.14	$32.05	$25.85	$28.29
Financial Reserves Policy Surcharge	$0.00	$0.00	$0.00	$0.00	$0.00
Financial Reserves Policy Amount	**$0.0**	$-Millions			
Financial Reserves Policy Surcharge	$0.00				
FY2022 Billing Determinants					
TOCA %	0.36490%	0.36490%	0.36490%	0.36490%	0.36490%

Non-Slice TOCA %	0.36490%	0.36490%	0.36490%	0.36490%	0.36490%
Load Shaping - HLH (MWh)	-6,498	4,690	4,460	12,324	12,173
Load Shaping - LLH (MWh)	-2,679	5,996	3,964	11,587	9,374
FY2022 Tier 1 Power Charges without Low Density Discounts or Irrigation Rate Discounts					
Composite Charge	$729,222	$729,222	$729,222	$729,222	$729,222
Non-Slice Charge	($120,396)	($120,396)	($120,396)	($120,396)	($120,396)
Load Shaping - HLH	($194,419)	$148,721	$172,873	$422,603	$423,496
Load Shaping - LLH	($75,744)	$174,720	$127,041	$299,535	$265,183
Financial Reserves Policy Surcharge	$0	$0	$0	$0	$0
Total	$338,663	$932,267	$908,740	$1,330,964	$1,297,505
Steps in calculating Load Shaping Billing Determinants					
System Shaped Load HLH (MWh)	10,658	12,910	11,764	9,676	8,563
System Shaped Load LLH (MWh)	5,959	8,128	8,828	7,333	6,178
Actual Tier 1 Load HLH (MWh)	4,160	17,600	16,224	22,000	20,736
Actual Tier 1 Load LLH (MWh)	3,280	14,124	12,792	18,920	15,552

Step 3: Critical Slice & Block Amounts (with TOCAs)
(in annual aMW)

Tier 2 Block Amounts	0.000
Tier 1 Block Amounts 11/	24.581
Net Requirements	24.581

TOCAs 12/

Sum of RHWM	6736.361
Non-Slice TOCA	0.36490%
TOCA	0.36490%

Notes:
11/ Tier 1 Block Amounts equal Net Requirement less Tier 2 Amounts.
Annual Tier 1 Block Amounts (in aMW) go into section 1.1 of Exhibit C.
12/ TOCA equals minimum of Net Requirement or RHWM,
divided by the Sum of RHWM. Sum of RHWM in cell J18.
Non-Slice TOCA equals TOCA.

March	April	May	June	July	August	September	ANNUAL
743	720	744	720	744	744	720	8,760
0.159	0.010	0.000	0.000	0.038	0.039	0.078	1.000
34,237	2,153	0	0	8,183	8,398	16,796	215,330
0	0	0	0	0	0	0	0

g Factors * Annual Tier 1 Block Amounts in aMW (see Step 3) * Hours in Fiscal Year

N/A	N/A	N/A	N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	N/A	N/A	N/A	

o their Net Requirement. Not applicable to customers who elected flat Tier 1 block within-month shape.

46.0	3.0	0.0	0.0	11.0	11.0	23.0	214,654
46.0	3.0	0.0	0.0	11.0	11.0	23.0	
46.0	3.0	0.0	0.0	11.0	11.0	23.0	

calculated per 1.2.14 of Exhibit C multiplied by the diurnal shaping factor, divided by the hours in the month,
monthly MWh amounts calculated per 1.2.14 of Exhibit C divided by the hours in the month,
gawatt-hours established in cell O55 will be different than the megawatt-hours calculated in cell O50.

34,178	2,160	0	0	8,184	8,184	16,560	214,654

113,627	106,167	105,248	100,646	103,796	103,535	101,104	1,225,094
183.8	175.8	171.9	159.6	161.8	156.7	163.8	N/A
85,636	82,985	85,752	82,985	85,752	85,752	82,985	927,715
2,846	3,802	8,002	6,729	3,668	3,477	3,046	64,848
25,145	19,380	11,494	10,932	14,376	14,306	15,073	232,531

d.) TRL Forecast (energy and peak) goes into section 1.1 of Exhibit A. If NLSL see page 3 for additional calculations.
leed to add New Resources if customer has Above-RHWM Load before calculating Net Requirements.

0	0	0	0	0	0	0	0
0.000	0.000	0.000	0.000	0.000	0.000	0.000	
1,459	1,413	1,460	1,413	1,460	1,460	1,413	17,196
1.963	1.963	1.963	1.963	1.963	1.963	1.963	

ed Resources (ie Hydro Resources) and does not have enough (or any) Above-RHWM Load,
esources were not added to serve Above-RHWM Load, then Unspecified Resource Amounts will be added.

23,686	17,966	10,034	9,518	12,916	12,846	13,659	215,335

d plus T2 Amounts. Net Requirements goes into section 1.2 of Exhibit A.

March	April	May	June	July	August	September	ANNUAL
85,636	82,985	85,752	82,985	85,752	85,752	82,985	927,715
42,751	41,372	42,751	41,372	42,751	42,751	41,372	503,359
42,885	41,613	43,001	41,613	43,001	43,001	41,613	424,356
85,636	82,985	85,752	82,985	85,752	85,752	82,985	927,715
-4,194	-29,566	-34,850	-31,355	-19,615	-18,575	-11,293	-197,950
-5.645	-41.064	-46.841	-43.549	-26.364	-24.966	-15.685	
2,846	3,802	8,002	6,729	3,668	3,477	3,046	64,848
3.830	5.281	10.755	9.346	4.930	4.673	4.231	

nounts to match the NLSL forecast keeping the total dedicated amounts the same.

[redacted]

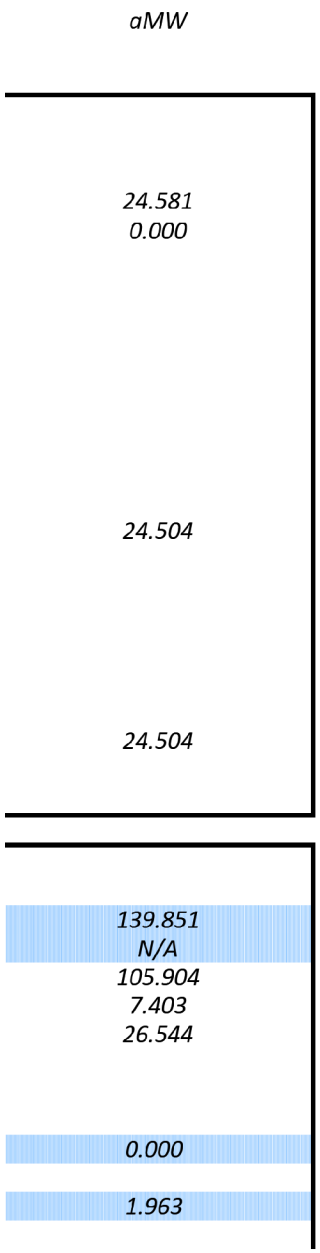
ces and have a Preliminary Net Requirement in the second year of a Rate Period
n Fiscal Year prior to the removal of any resources in accordance with section 10.

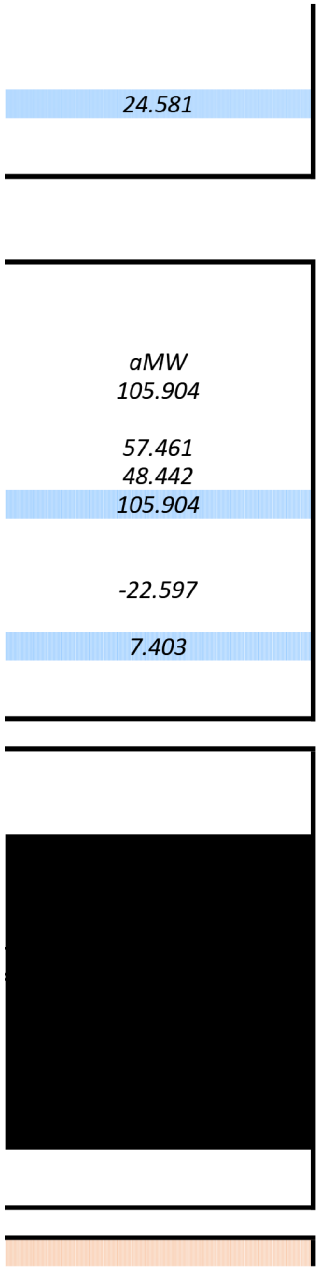
2022	2022	2022	2022	2022	2022	2022

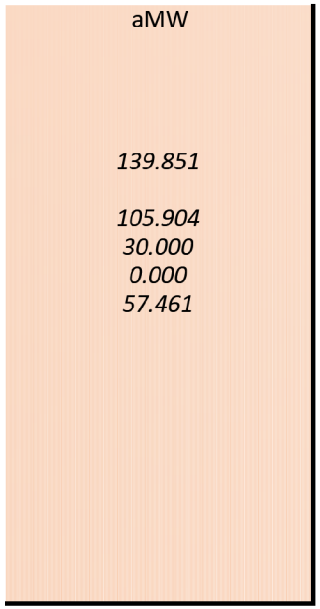
3	4	5	6	7	8	9	Annual
432	416	400	416	400	432	400	
311	304	344	304	344	312	320	
113,627	106,167	105,248	100,646	103,796	103,535	101,104	1,225,094
183.772	175.781	171.924	159.600	161.786	156.652	163.785	
85,636	82,985	85,752	82,985	85,752	85,752	82,985	927,715
7,040	33,368	42,852	38,084	23,283	22,052	14,339	262,798
0	0	0	0	0	0	0	0
42,751	41,372	42,751	41,372	42,751	42,751	41,372	503,359
0.159	0.010	0.000	0.000	0.038	0.039	0.078	1.000
0.581	0.578	0.538	0.578	0.538	0.581	0.556	
0.440	0.422	0.462	0.422	0.441	0.441	0.444	
0.019	0.133	0.173	0.154	0.089	0.084	0.051	1.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	

March	April	May	June	July	August	September	ANNUAL
432	416	400	416	400	432	400	4912
311	304	344	304	344	312	320	3848
2,961,839	2,307,314	3,495,710	3,952,933	3,505,339	3,425,259	2,999,685	37,328,957
1,860,906	1,436,906	1,691,935	1,590,174	1,757,589	1,660,955	1,700,508	21,681,545
$1,998,417	$1,998,417	$1,998,417	$1,998,417	$1,998,417	$1,998,417	$1,998,417	
($329,943)	($329,943)	($329,943)	($329,943)	($329,943)	($329,943)	($329,943)	
$0	$0	$0	$0	$0	$0	$0	
$27.57	$20.71	$16.28	$17.15	$36.83	$35.87	$28.15	
$28.44	$25.66	$16.30	$10.62	$21.36	$26.85	$28.95	
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
0.36490%	0.36490%	0.36490%	0.36490%	0.36490%	0.36490%	0.36490%	

0.36490%	0.36490%	0.36490%	0.36490%	0.36490%	0.36490%	0.36490%	
9,064	-7,171	-12,756	-14,424	-8,391	-7,747	-1,746	
7,516	-4,331	-6,174	-5,803	-2,629	-2,629	1,155	
$729,222	$729,222	$729,222	$729,222	$729,222	$729,222	$729,222	$8,750,664
($120,396)	($120,396)	($120,396)	($120,396)	($120,396)	($120,396)	($120,396)	($1,444,752)
$249,901	($148,519)	($207,665)	($247,376)	($309,040)	($277,877)	($49,146)	($16,448)
$213,742	($111,140)	($100,634)	($61,623)	($56,165)	($70,584)	$33,433	$637,764
$0	$0	$0	$0	$0	$0	$0	$0
$1,072,469	$349,167	$300,527	$299,827	$243,621	$260,365	$593,113	$7,927,228
10,808	8,419	12,756	14,424	12,791	12,499	10,946	136,213
6,790	5,243	6,174	5,803	6,413	6,061	6,205	79,116
19,872	1,248	0	0	4,400	4,752	9,200	120,192
14,306	912	0	0	3,784	3,432	7,360	94,462


aMW
24.581
0.000
24.504
24.504
139.851
N/A
105.904
7.403
26.544
0.000
1.963


24.581
aMW
105.904
57.461
48.442
105.904
-22.597
7.403



aMW

7,599.543 6736
5,634.497

28
21
24
25

From: April Owen

Sent: Thu Sep 02 09:35:54 2021

To: Normandeau,Mike (BPA) - PSE-RONAN; Patton,Kathryn B (BPA) - PSS-SEATTLE

Cc: Babaidhan,Sami A (BPA) - PSSE-MEAD-GOB; Tyler Whitney

Subject: FW: Pend Oreille FY2022 Forecast Breakout 2021-8-18.xlsx

Importance: Normal

Attachments: Pend Oreille FY2022 Forecast Breakout 2021-8-18.xlsx

Mike and Kate,

The email that I am forwarding is Andres's latest TRL forecast using amounts that we had included in our public comments. Now that we know that it may be possible based on BPA transmission study timelines to start the mill in November, we are going to stick with our customer's previous prediction for total load. The numbers Andres included are summarized here:

The exception is that Andres had 165 from July – September, and we should increase that to 190 for those 3 months.

Thanks for the discussion and running the different scenarios – you both have been very helpful in working through this process. This should be our final submission.

I will be out for the next several hours but will be back in the office this afternoon after 1:30 if you have questions.

Thanks!

April.

April Owen

Director, Audit, Finance & Power Supply

Public Utility District No. 1 of Pend Oreille County

P.O. Box 190 | 130 N. Washington | Newport, WA 99156

509.447.9321 | aowen@popud.org | www.popud.org

From: Cicarelli,Andres A (BPA) - KSL-BELL-1 <aacicarelli@bpa.gov>
Sent: Friday, August 20, 2021 12:09 PM
To: April Owen <aowen@popud.org>
Cc: Normandeau,Mike (BPA) - PSE-RONAN <mrnormandeau@bpa.gov>
Subject: Pend Oreille FY2022 Forecast Breakout 2021-8-18.xlsx

Hi April,

Attached is the revised FY2022 forecast for Pend Oreille based on the PUD's comments. Any thoughts?

Talk to you later,

Andres

		Pend Oreille PUD Total						
		MWh	HLH	LLH	aMW	CP		
oct	2021	40613.76	23224.83	17388.93	55	74.573	744	oct
nov	2021	113476.1	64090.6	49385.47	158	190.197	719	nov
dec	2021	123098.8	69474.6	53624.23	165	197.629	744	dec
jan	2022	140166.8	79274.8	60892.02	188	227.509	744	jan
feb	2022	123878.3	70497.77	53380.54	184	217.875	672	feb
mar	2022	132158.1	75366.41	56791.73	177	210.882	745	mar
apr	2022	141926.5	80879.71	61046.79	197	229.766	720	apr
may	2022	142204.5	80649.17	61555.37	191	225.903	744	may
jun	2022	136437.5	77835.08	58602.44	189	213.601	720	jun
jul	2022	140738.9	79903.22	60835.69	189	215.78	744	jul
aug	2022	140486.7	80214.51	60272.19	189	210.638	744	aug
sep	2022	136864.5	77619.19	59245.34	190	217.773	720	sep

Beginning October 1, 2021 = 25 a

Ponderay Renewable Fiber & Blockchain

	MWh	HLH	LLH	aMW	NCP
2021	18388.24	10481.3	7906.944	25	27
2021	83217.91	47434.21	35783.71	115	125
2021	85889.28	48956.89	36932.39	115	125
2022	104289.4	59444.94	44844.43	140	152
2022	94197.67	53692.67	40504.99	140	152
2022	104116.9	59346.66	44770.29	140	152
2022	118692.1	67654.5	51037.6	165	179
2022	122665.5	69919.34	52746.17	165	179
2022	118796.1	67713.8	51082.33	165	179
2022	122620	69893.41	52726.62	165	179
2022	122649.6	69910.27	52739.33	165	179
2022	118695.5	67656.42	51039.05	165	179

ıMW • Beginning November 1, 2021 = 115 aMW • Beginning January 1, 2022 = 140 aMW • Beginning

April 1, 2022 = 165 aMW

From: David Hodder

Sent: Mon Sep 20 10:27:58 2021

To: Todd Behrend; Lacambra,Jared M (BPA) - TPCF-MEAD-GOB; Keyannie,Kendrick (BPA) - TFSD-BELL; Walker,Nichloas P (BPA) - TFSB-BELL; Fedchun,Pavel (BPA) - TFSB-USFS NEWPORT; Philip Roice; Steven Metzger

Subject: Ponderay Industries (PNC) 230 kV work planning

Importance: Normal

This is to review the plan, and have a general Q&A regarding testing equipment and reenergizing the 230 feeder from BPA.

If I missed anyone on this invite please forward it to them.

David

Pend Oreille County Public Utility District #1

From: Fedchun,Pavel (BPA) - TFSB-USFS NEWPORT

Sent: Mon Sep 20 14:54:39 2021

To: David Hodder

Subject: Accepted: Ponderay Industries (PNC) 230 kV work planning

Importance: Normal

From: Harris,Adelle L (TFE)(BPA) - TSES-TPP-2

Sent: Tue Sep 21 07:33:56 2021

To: Jones,Ryan M (BPA) - TPP-OPP-3; Mendez-Sierra,Akira M (BPA) - TPPC-OPP-3; Rochelle,Patrick R (BPA) - TPPB-OPP-3; Lacambra,Jared M (BPA) - TPCF-MEAD-GOB; cwillenbrock@popud.org; April Owen; Tyler Whitney; David Hodder; Sarah Holderman

Cc: Kitali,Salah H (BPA) - TP-DITT-2; Cook,Jeffrey W (BPA) - TP-DITT-2; Smith,Jack A (BPA) - TSBM-TPP-2

Subject: BPA Deep Dive Presentation

Importance: Normal

Attachments: Webex_Meeting.ics; Pend Oreille PUD_Deep Dive.pdf

Attaching Deep Dive presentation.

Test Your Webex Connection

Verify you are ready to use Webex.

Webex Help Guides

Find help on how to use and install Webex.

You can forward this invitation to others.

Conference Room Services 3 is inviting you to a scheduled Webex meeting.

Thursday, September 23, 2021

10:00 AM | (UTC-07:00) Pacific Time (US & Canada) | 1 hr

Join meeting

More ways to join:

Join from the meeting link

https://mybpa.webex.com/mybpa/j.php?MTID=m0b6f5a9f734bc81d9b472b129cb5d639

Join by meeting number

Meeting number (access code): (b)(6)

Meeting password: (b)(6)

Tap to join from a mobile device (attendees only)

+1-415-527-5035,(b)(6) US Toll

Join by phone

(b)(6)

Global call-in numbers

Join from a video system or application

Dial (b)(6) @mybpa.webex.com

Need help? Go to https://help.webex.com

Deep Dive

Pend Oreille PUD

Transmission
Planning

Key Outcomes

Pend Oreille:

- Understand BPA Planning
- Understand Area, Issues & Limits

Transmission Planning

Key Outcomes

BPA Planning:

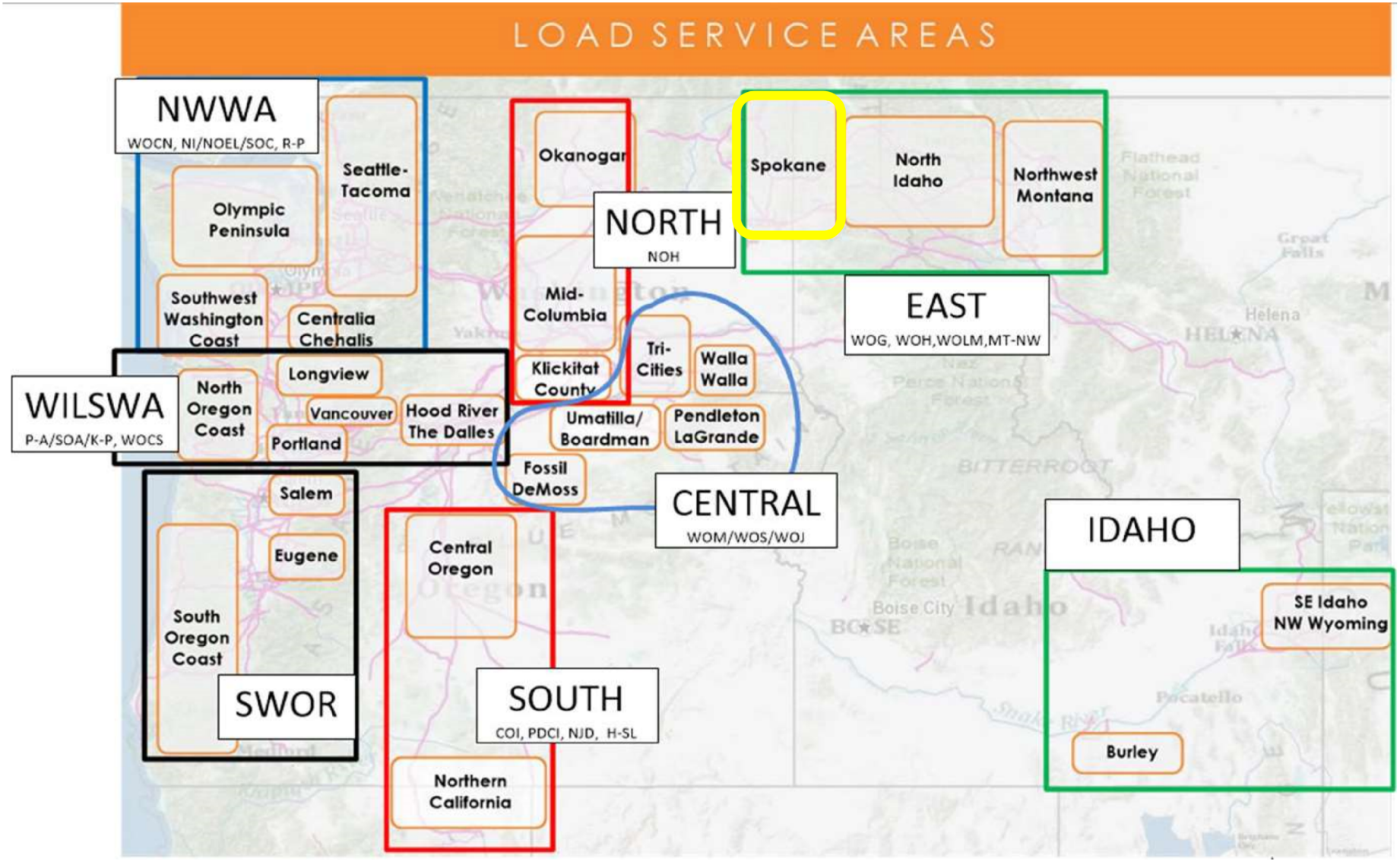
- Understand Area, Issues & Limits
- Understand Pend Oreille Plans

Transmission Planning

Understanding BPA Planning

Annual System Wide Assessments

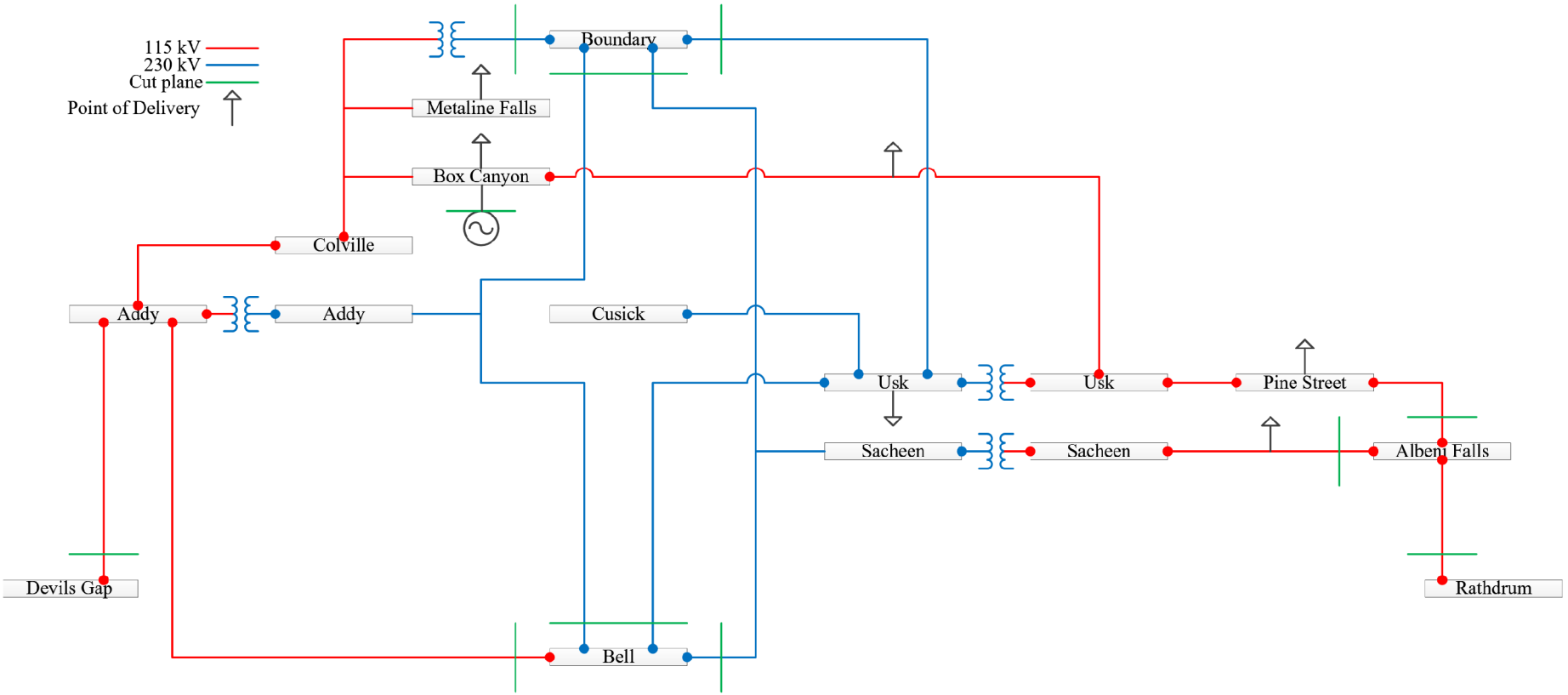
Transmission Planning


LOAD SERVICE AREAS
NWWA
WOCN, NI/NOEL/SOC, R-P
Seattle-Tacoma
Olympic Peninsula
Southwest Washington Coast
Centralia Chehalis
WILSWA
P-A/SOA/K-P, WOCS
North Oregon Coast
Longview
Vancouver
Hood River The Dalles
Portland
Salem
Eugene
South Oregon Coast
SWOR
Okanogan
NORTH
NOH
Mid-Columbia
Klickitat County
Tri-Cities
Walla Walla
Umatilla/ Boardman
Pendleton LaGrande
Fossil DeMoss
CENTRAL
WOM/WOS/WOJ
Central Oregon
SOUTH
COI, PDCI, NJD, H-SL
Northern California
Spokane
North Idaho
Northwest Montana
EAST
WOG, WOH,WOLM,MT-NW
IDAHO
SE Idaho NW Wyoming
Burley

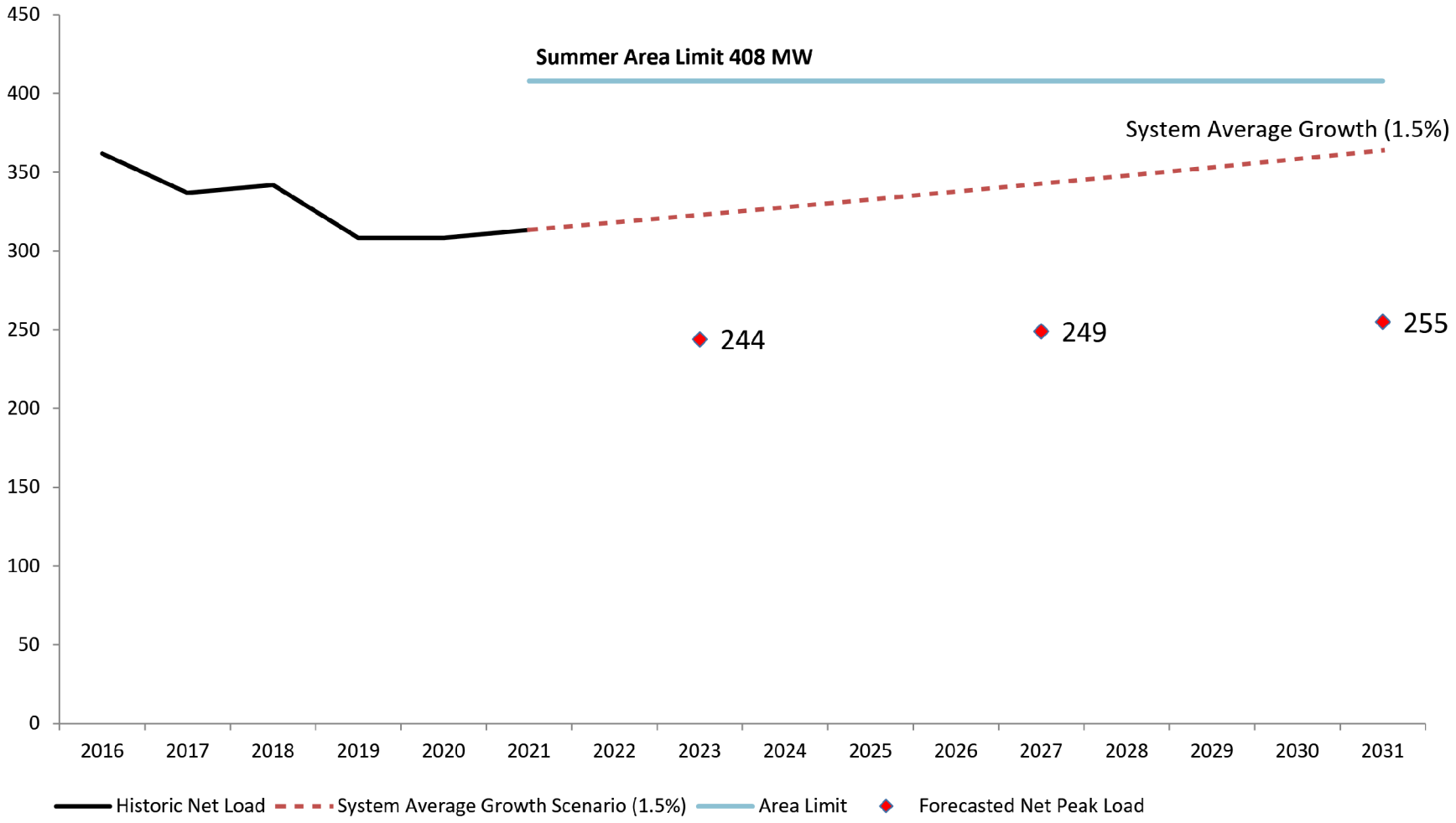
Pend Oreille PUD Points of Delivery

- Box Canyon
- Cusick
- Diamond Lake
- Metaline
- Pine Street
- Usk

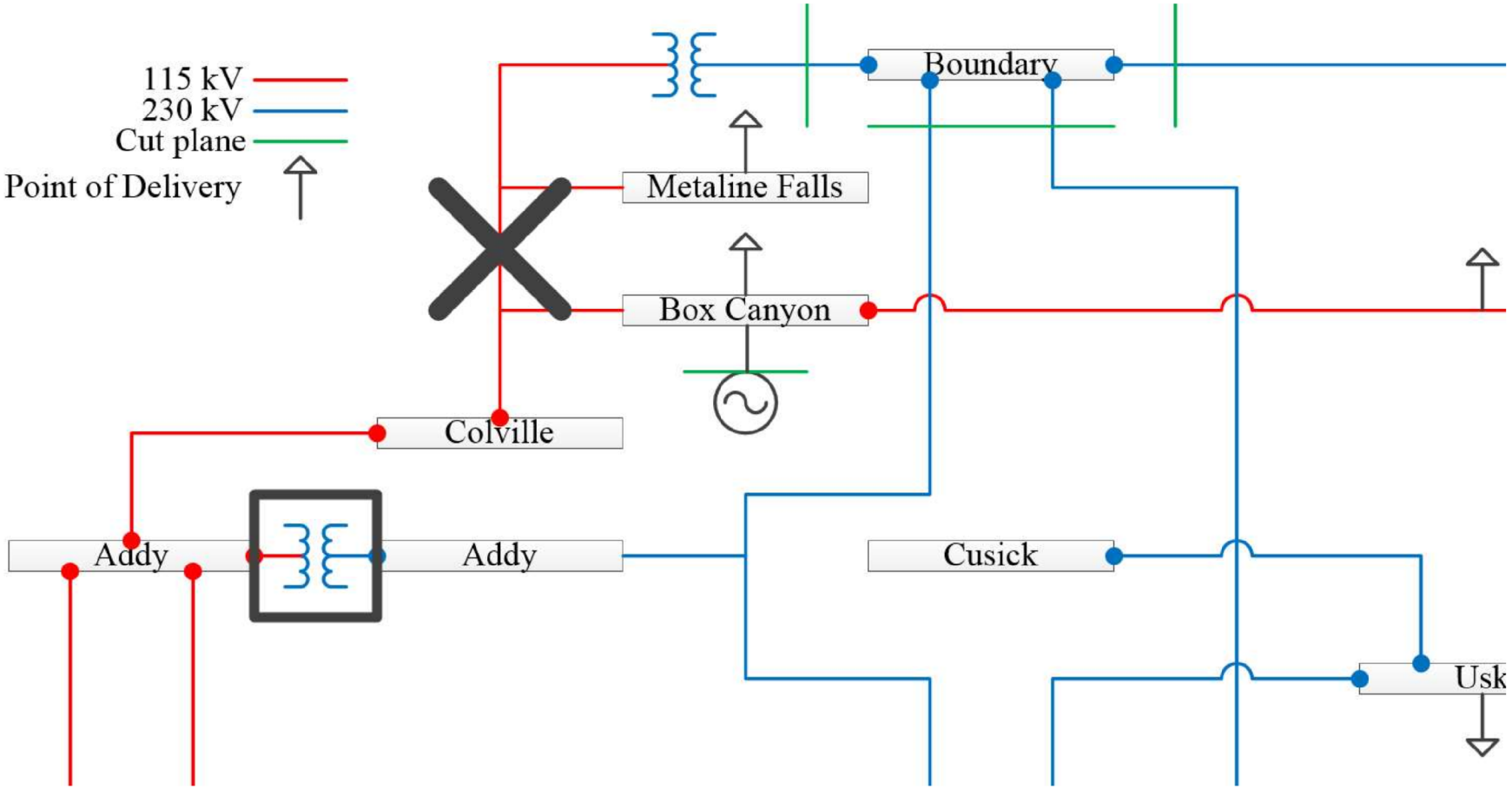
Boundary Colville Cut Plane



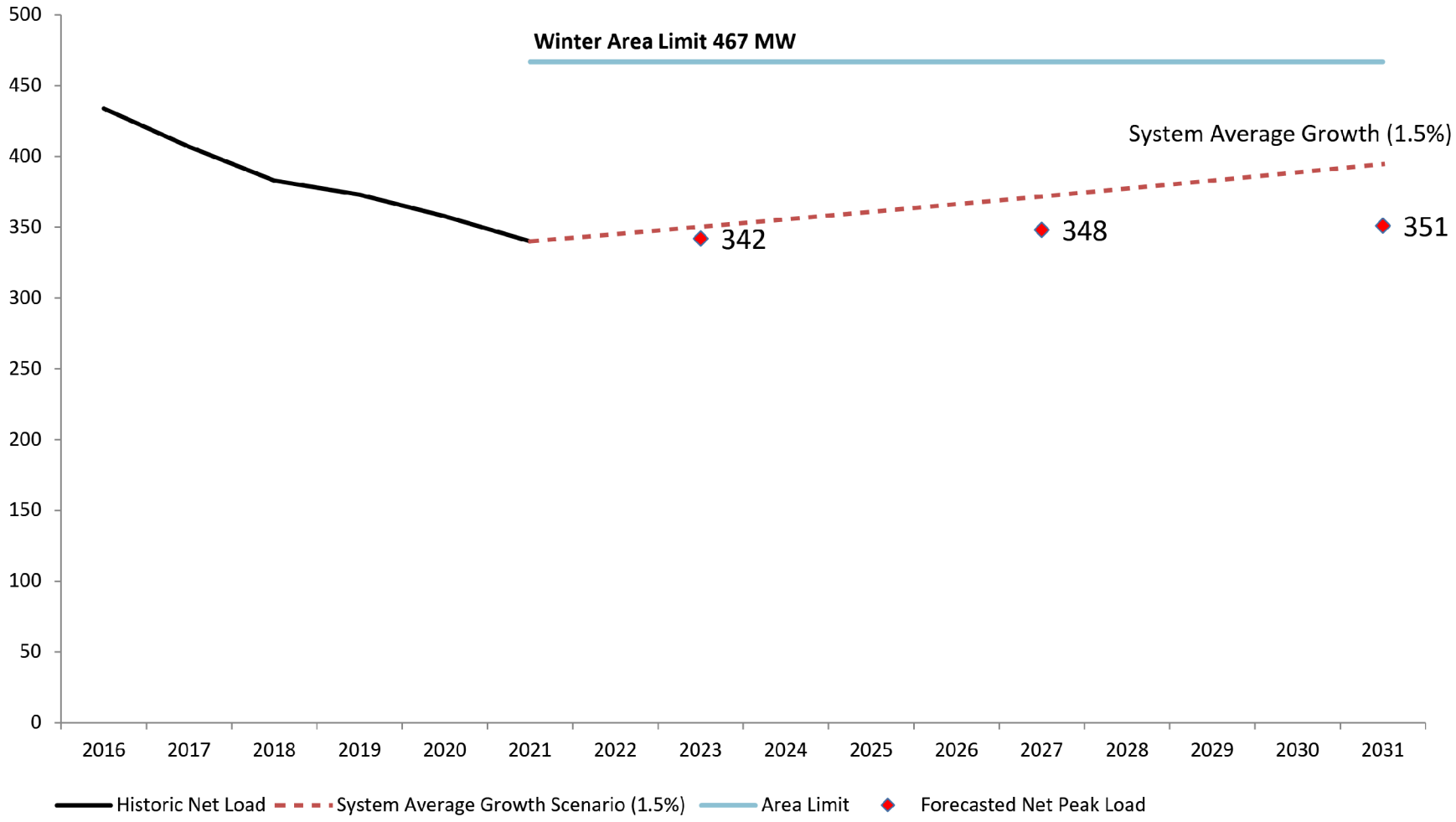
Boundary Colville Summer Cut Plane Limit



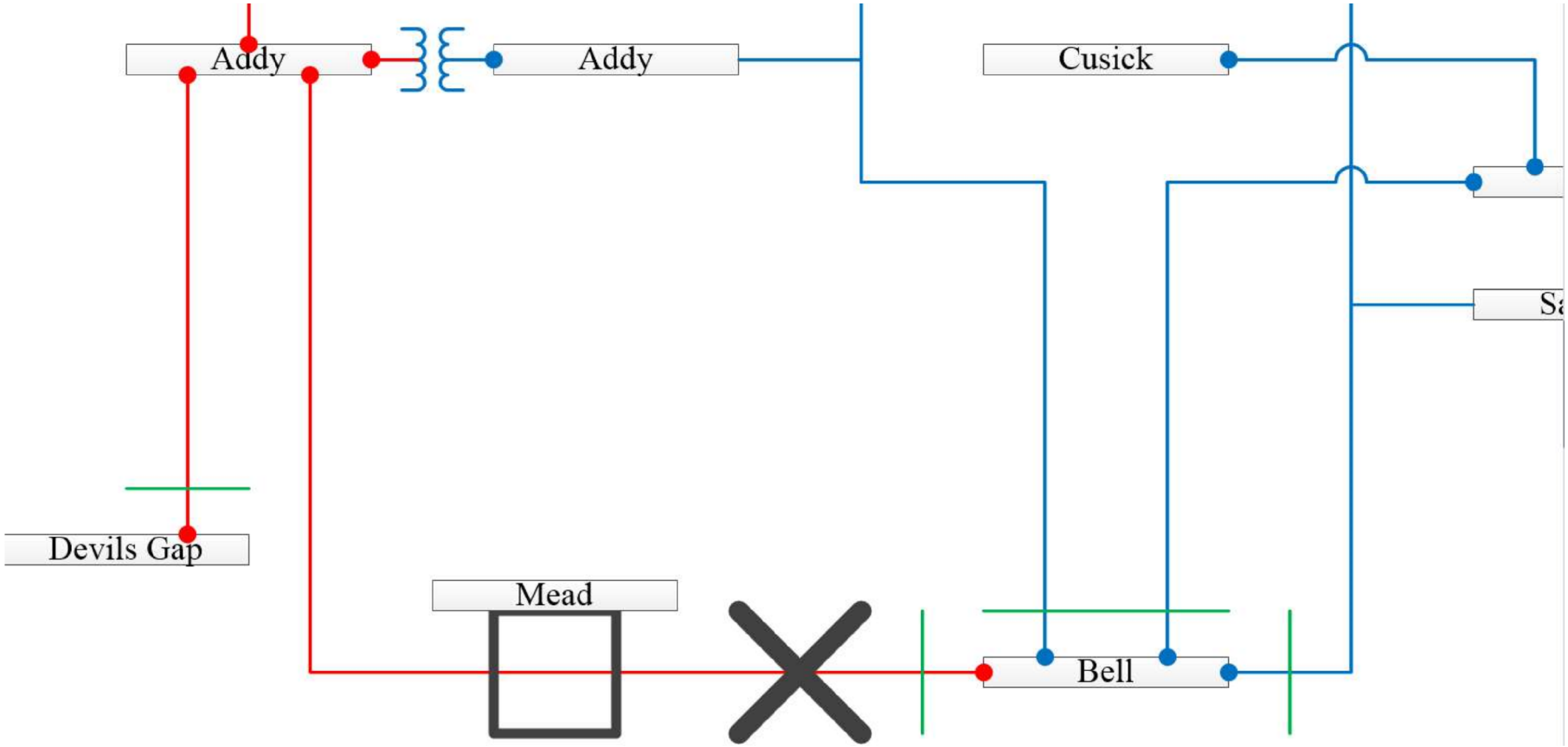
Summer Cut Plane Limit



Boundary Colville Winter Cut Plane Limit



Winter Cut Plane Limit



BPA Projects

- Sacheen 230 kV Ring Bus
  - Upgrade the Sacheen 230 kV non-standard bus to a standard ring bus configuration.
  - Energization Date: 12/1/21

- Bell 230/115 kV Transformer Replacement
  - The existing nameplate rating is 250 MVA and it is expected to be replaced to 300 MVA.
  - Energization Date: 2025

BPA Projects

- Addy 230 kV Reconfiguration
  - Study the impacts of reconfiguring Addy 230 kV to a standard bus configuration.

- Boundary Colville Cut Plane Reactor
  - Determine where a reactor fits to reduce the high voltages in the area.

Interconnection Projects

- L0485
  - A new 230 kV substation that loops into the Grand Coulee-Bell #5 230 kV line.

- L0494
  - 300 MW load request at Usk 230 kV substation.

From: Conference Room Services 3
Sent: Fri Aug 20 22:42:22 2021
Required: Conference Room Services 3
Subject: Deep Dive Presentation
Priority: Normal
StartTime: Thu Sep 23 18:00:00 2021
EndTime: Thu Sep 23 19:00:00 2021
Location: https://mybpa.webex.com/mybpa/j.php?MTID=m0b6f5a9f734bc81d9b472b129cb5d639

JOIN WEBEX MEETING
https://mybpa.webex.com/mybpa/j.php?MTID=m0b6f5a9f734bc81d9b472b129cb5d639
Meeting number (access code): (b)(6)

Meeting password: (b)(6)

TAP TO JOIN FROM A MOBILE DEVICE (ATTENDEES ONLY)
(b)(6) US Toll

JOIN BY PHONE
(b)(6) US Toll

Global call-in numbers
https://mybpa.webex.com/mybpa/globalcallin.php?MTID=mce95afdb4403b1e0bcd312960f5a5494

JOIN FROM A VIDEO SYSTEM OR APPLICATION
Dial sip:(b)(6) @mybpa.webex.com

Can't join the meeting?
https://collaborationhelp.cisco.com/article/WBX000029055

IMPORTANT NOTICE: Please note that this Webex service allows audio and other information sent during the session to be recorded, which may be discoverable in a legal matter. By joining this session, you automatically consent to such recordings. If you do not consent to being recorded, discuss your concerns with the host or do not join the session.
in.php?MTID=mce95afdb4403b1e0bcd312960f5a5494" style="text-decoration:none;font-size:14px;color:#005E7D">Global call-in numbers</FONT>

<table><tr style="line-height: 20px;"><td
style="height:20px"> </td></tr></table>

<FONT SIZE="4" FACE="ARIAL"><FONT SIZE="3" COLOR="#666666" FACE="arial">Join from a video system or application</FONT>
<FONT SIZE="2" COLOR="#666666"

```
FACE="arial">Dial</FONT> <a href="sip:1998874406@mybpa.webex.com"><FONT SIZE="2"
COLOR="#005E7D" FACE="arial">1998874406@mybpa.webex.com</FONT></a> 
<BR></FONT>  <BR>



         <table><tr style="line-height: 20px"><td
style="height:20px"> </td></tr></table>


                              <table style="width: 100%;" align="left" class="main">
               <tr style="height: 20px"><td> </td></tr>
                                    <tr>
                                                <td style="height: 24px; color:
#000000; font-family:Arial; font-size: 14px; line-height: 24px;">Need help? Go to <a
href="https://help.webex.com" style="color:#005E7D; text-
decoration:none;">https://help.webex.com</a>
                                                </td>
                                    </tr>
               <tr style="height: 44px"><td> </td></tr>
                              </table>
                  </td>
         </tr>
</table>
```

From: David Hodder

Sent: Tue Sep 21 13:25:38 2021

To: Lacambra,Jared M (BPA) - TPCF-MEAD-GOB; BPA-CSReliabilityProgram

Cc: Cardoza,Lorissa J (BPA) - TPCR-TPP-4

Bcc: ljjones@bpa.gov; CSReliabilityProgram@bpa.gov

Subject: [EXTERNAL] RE: BPA USK line

Importance: Normal

Attachments: Cusick-Usk.pdf

Hi Jared

It's the Cusick – Usk 230 kV line.

See attached.

Thanks,

Regards,

David J Hodder P.E.

Engineering Manager

Phone 509 447-3137

Cell (b)(6)

Public Utility District No. 1 of Pend Oreille County

P.O. Box 190 | 130 N. Washington

Newport, Washington 99156

From: Lacambra,Jared M (BPA) - TPCF-MEAD-GOB <jmlacambra@bpa.gov>
Sent: Tuesday, September 21, 2021 10:24 AM
To: BPA-CSReliabilityProgram <CSReliabilityProgram@bpa.gov>; David Hodder <DHodder@popud.org>
Cc: Cardoza,Lorissa J (BPA) - TPCR-TPP-4 <ljjones@bpa.gov>
Subject: RE: BPA USK line

Good Morning David,

Can you share a diagram with some arrows showing the sections you are looking for? That would be helpful in our search. Specifically because we are unsure of the tap you are referencing. We want to make sure we are understanding the request correctly.

Jared Lacambra

Customer Service Engineer | TPCF-MEAD-GOB

Bonneville Power Administration | Department of Energy
1620 E. Hawthorne Rd.
Mead, WA, 99021

jmlacambra@bpa.gov

(509) 822-4605 (office)

From: BPA-CSReliabilityProgram <CSReliabilityProgram@bpa.gov>
Sent: Friday, September 17, 2021 1:29 PM
To: DHodder@popud.org

Cc: BPA-CSReliabilityProgram <CSReliabilityProgram@bpa.gov>; Cardoza,Lorissa J (BPA) - TPCR-TPP-4 <ljjones@bpa.gov>; Lacambra,Jared M (BPA) - TPCF-MEAD-GOB <jmlacambra@bpa.gov>
Subject: RE: BPA USK line

Good afternoon David,

BPA has received POPD's request for the USK conductor size and tap facility limit. We will start processing this request and I will get back to you shortly.

Have a great weekend,

Michael Granath

Customer Service Program Specialist | TPCR

Bonneville Power Administration

bpa.gov | P N/A | C (b)(6)

cid:image001.jpg@01D52C3E.DF0B9390cid:image008.jpg@01D52C3E.09FCE1E0cid:image009.jpg@01D52C3E.09FCE1E0cid:image010.jpg@01D52C3E.09FCE1E0cid:image011.jpg@01D52C3E.09FCE1E0cid:image012.jpg@01D52C3E.09FCE1E0

MT:05A4428

From: David Hodder <DHodder@popud.org>
Sent: Thursday, September 16, 2021 10:39 AM
To: Lacambra,Jared M (BPA) - TPCF-MEAD-GOB <jmlacambra@bpa.gov>
Subject: [EXTERNAL] BPA USK line

Hi JAred,

Allrise / PNC has asked for the size of the BPA 230 kV feeder conductor at USK.. Also if you can, what do you have a facility limit for that tap? (that might nip this)

They have Craig Ripplinger calculating the capacity of the substation. He is an electrical engineer based out of Spokane Valley who has done a lot of work in the PUD area over the years.

Regards,

David J Hodder P.E.

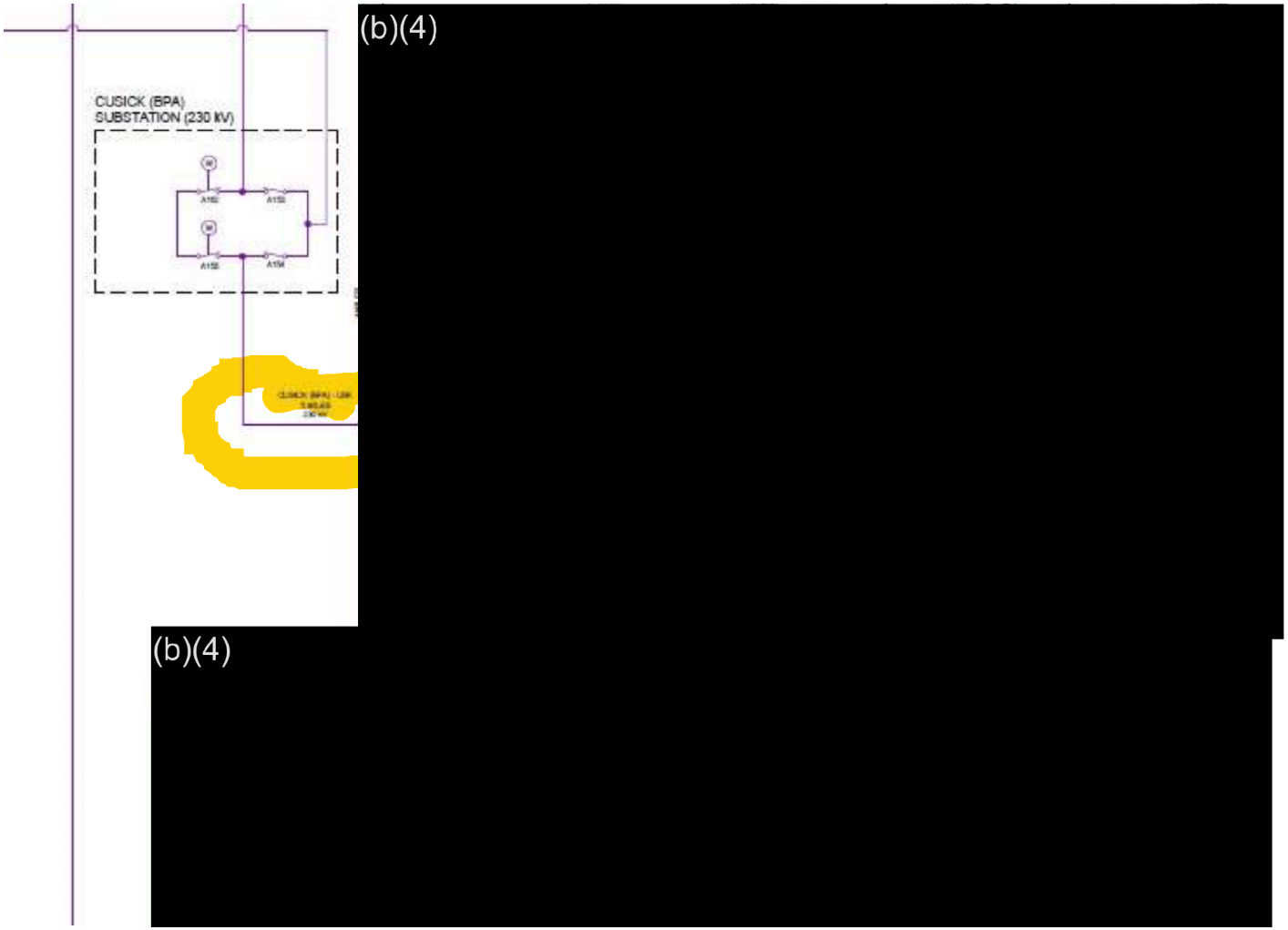
Engineering Manager

Public Utility District No. 1 of Pend Oreille County

cid:cfdd47bf-81dd-4dc4-b122-d5c15b5b69d9P.O. Box 190 | 130 N. Washington

Newport, Washington 99156

Pend Oreille County Public Utility District #1


CUSICK (BPA)
SUBSTATION (230 kV)
(b)(4)
(b)(4)

From: Lacambra,Jared M (BPA) - TPCF-MEAD-GOB

Sent: Thu Sep 23 07:45:19 2021

To: David Hodder

Subject: Accepted: Ponderay Industries (PNC) 230 kV work planning

Importance: Normal

From: BPA-CSReliabilityProgram

Sent: Thu Sep 23 10:40:01 2021

To: David Hodder

Cc: Cardoza,Lorissa J (BPA) - TPCR-TPP-4; Lacambra,Jared M (BPA) - TPCF-MEAD-GOB; BPA-CSReliabilityProgram; Harris,Adelle L (TFE)(BPA) - TSES-TPP-2

Subject: BPA Response POPD FAC-008 Data Request

Importance: Normal

Attachments: USK-Boundary No1 230kV line Normal Ratings.pdf; USK-Boundary No 230kV line Emergency Ratings.pdf

Good afternoon David,

Thank you for your patience. BPA is able to provide both the Normal and Emergency ratings for the Cusick-USK 230 kV portion of the USK-Boundary No1 230kV line. Please see attached.

For the conductor size, please refer to the table below for the specific conductor type of the Cusick-USK 230 kV line. Please let me know if there is an issue determining actual size from the conductor type listed and BPA can provide further assistance.

If you have any questions, or if we can be of further assistance, please do not hesitate to reach out.

Thank you,

Michael Granath

Customer Service Program Specialist | TPCR

Bonneville Power Administration

bpa.gov | P N/A | C (b)(6)

cid:image001.jpg@01D52C3E.DF0B9390cid:image008.jpg@01D52C3E.09FCE1E0cid:image009.jpg@01D52C3E.09FCE1E0cid:image010.jpg@01D52C3E.09FCE1E0cid:image011.jpg@01D52C3E.09FCE1E0cid:image012.jpg@01D52C3E.09FCE1E0

MT:05A4428

From: David Hodder <DHodder@popud.org>
Sent: Tuesday, September 21, 2021 1:26 PM
To: Lacambra,Jared M (BPA) - TPCF-MEAD-GOB <jmlacambra@bpa.gov>; BPA-CSReliabilityProgram

<CSReliabilityProgram@bpa.gov>
Cc: Cardoza,Lorissa J (BPA) - TPCR-TPP-4 <ljjones@bpa.gov>
Subject: [EXTERNAL] RE: BPA USK line

Hi Jared

It's the Cusick – Usk 230 kV line.

See attached.

Thanks,

Regards,

David J Hodder P.E.

Engineering Manager

Phone 509 447-3137

Cell (b)(6)

Public Utility District No. 1 of Pend Oreille County

P.O. Box 190 | 130 N. Washington

Newport, Washington 99156

From: Lacambra,Jared M (BPA) - TPCF-MEAD-GOB <jmlacambra@bpa.gov>
Sent: Tuesday, September 21, 2021 10:24 AM
To: BPA-CSReliabilityProgram <CSReliabilityProgram@bpa.gov>; David Hodder <DHodder@popud.org>
Cc: Cardoza,Lorissa J (BPA) - TPCR-TPP-4 <ljjones@bpa.gov>
Subject: RE: BPA USK line

Good Morning David,

Can you share a diagram with some arrows showing the sections you are looking for? That would be helpful in our search. Specifically because we are unsure of the tap you are referencing. We want to make sure we are understanding the request correctly.

Jared Lacambra

Customer Service Engineer | TPCF-MEAD-GOB

Bonneville Power Administration | Department of Energy
1620 E. Hawthorne Rd.
Mead, WA, 99021

jmlacambra@bpa.gov

(509) 822-4605 (office)

From: BPA-CSReliabilityProgram <CSReliabilityProgram@bpa.gov>
Sent: Friday, September 17, 2021 1:29 PM
To: DHodder@popud.org
Cc: BPA-CSReliabilityProgram <CSReliabilityProgram@bpa.gov>; Cardoza,Lorissa J (BPA) - TPCR-TPP-4 <ljjones@bpa.gov>; Lacambra,Jared M (BPA) - TPCF-MEAD-GOB <jmlacambra@bpa.gov>
Subject: RE: BPA USK line

Good afternoon David,

BPA has received POPD's request for the USK conductor size and tap facility limit. We will start processing this

request and I will get back to you shortly.

Have a great weekend,

Michael Granath

Customer Service Program Specialist | TPCR

Bonneville Power Administration

bpa.gov | P N/A | C (b)(6)

cid:image001.jpg@01D52C3E.DF0B9390cid:image008.jpg@01D52C3E.09FCE1E0cid:image009.jpg@01D52C3E.09FCE1E0cid:image010.jpg@01D52C3E.09FCE1E0cid:image011.jpg@01D52C3E.09FCE1E0cid:image012.jpg@01D52C3E.09FCE1E0

MT:05A4428

From: David Hodder <DHodder@popud.org>
Sent: Thursday, September 16, 2021 10:39 AM
To: Lacambra,Jared M (BPA) - TPCF-MEAD-GOB <jmlacambra@bpa.gov>
Subject: [EXTERNAL] BPA USK line

Hi JAred,

Allrise / PNC has asked for the size of the BPA 230 kV feeder conductor at USK.. Also if you can, what do you have a facility limit for that tap? (that might nip this)

They have Craig Ripplinger calculating the capacity of the substation. He is an electrical engineer based out of Spokane Valley who has done a lot of work in the PUD area over the years.

Regards,

David J Hodder P.E.

Engineering Manager

Public Utility District No. 1 of Pend Oreille County

cid:cfdd47bf-81dd-4dc4-b122-d5c15b5b69d9P.O. Box 190 | 130 N. Washington

Newport, Washington 99156

BPA Facility Ratings Report Baseline Date 9/9/2021 3:57:33 PM

							Parallel Normal								
Facility Name	TOP	Substation	Position	Equipment ID	Type / Category		-15	-10	-5	0	5	10	20	30	40
University (EWEB)-Willamette 115kV line	Yes	University (EWEB)	EWEB	EWEB WILLAMET-UNIV 6050 Circuit Breaker 3	Circuit Breakers / 6050	MVA	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4
						Amps	2000	2000	2000	2000	2000	2000	2000	2000	2000
		University (EWEB)	EWEB	EWEB WILLAMET-UNIV 6060 Circuit Breaker 4	Circuit Breakers / 6060	MVA	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4
						Amps	2000	2000	2000	2000	2000	2000	2000	2000	2000
		University (EWEB)	EWEB	EWEB WILLAMET-UNIV MOD7073 Disconnect 1	Disconnect / MOD7073	MVA	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4
						Amps	2000	2000	2000	2000	2000	2000	2000	2000	2000
		University (EWEB)	EWEB	EWEB WILLAMET-UNIV MOD7071 Disconnect 2	Disconnect / MOD7071	MVA	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4
						Amps	2000	2000	2000	2000	2000	2000	2000	2000	2000
		University (EWEB)	EWEB	EWEB WILLAMET-UNIV MOD7063 Disconnect 3	Disconnect / MOD7063	MVA	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4
						Amps	2000	2000	2000	2000	2000	2000	2000	2000	2000
		University (EWEB)	EWEB	EWEB WILLAMET-UNIV MOD7061 Disconnect 4	Disconnect / MOD7061	MVA	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4
						Amps	2000	2000	2000	2000	2000	2000	2000	2000	2000
		University (EWEB)	EWEB	EWEB WILLAMET-UNIV MOD6063 Disconnect 5	Disconnect / MOD6063	MVA	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4
						Amps	2000	2000	2000	2000	2000	2000	2000	2000	2000
		University (EWEB)	EWEB	EWEB WILLAMET-UNIV MOD6049 Disconnect 6	Disconnect / MOD6049	MVA	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4
						Amps	2000	2000	2000	2000	2000	2000	2000	2000	2000
		University (EWEB)	EWEB	EWEB WILLAMET-UNIV MOD6051 Disconnect 7	Disconnect / MOD6051	MVA	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4
						Amps	2000	2000	2000	2000	2000	2000	2000	2000	2000
		University (EWEB)	EWEB	EWEB WILLAMET-UNIV MOD6053 Disconnect 8	Disconnect / MOD6053	MVA	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4
						Amps	2000	2000	2000	2000	2000	2000	2000	2000	2000
		University (EWEB)	EWEB	EWEB WILLAMET-UNIV MOD6061 Disconnect 9	Disconnect / MOD6061	MVA	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4
						Amps	2000	2000	2000	2000	2000	2000	2000	2000	2000
Usk-Boundary No 1 230kV line	No	Usk	A-951	D11865	Disconnect / DISCGroupOperated	MVA	2162.4	2116.2	2068.4	2020.6	1971.2	1920.2	1816.6	1708.2	1593.4
						Amps	5428	5312	5192	5072	4948	4820	4560	4288	4000
		Usk	A-952	D11866	Disconnect / DISCGroupOperated	MVA	2396.6	2347.2	2294.6	2242.0	2187.8	2132.0	2017.4	1838.8	1593.4
						Amps	6016	5892	5760	5628	5492	5352	5064	4616	4000
		Usk	A-953	O02729	Circuit Breakers / BKRGasPufferAir	MVA	2162.4	2116.2	2068.4	2020.6	1971.2	1920.2	1816.6	1708.2	1593.4
						Amps	5428	5312	5192	5072	4948	4820	4560	4288	4000
		Usk	A-954	D11867	Disconnect / DISCGroupOperated	MVA	2162.4	2116.2	2068.4	2020.6	1971.2	1920.2	1816.6	1708.2	1593.4
						Amps	5428	5312	5192	5072	4948	4820	4560	4288	4000
		Usk	A-955	O02730	Circuit Breakers / BKRGasPufferAir	MVA	2162.4	2116.2	2068.4	2020.6	1971.2	1920.2	1816.6	1708.2	1593.4
						Amps	5428	5312	5192	5072	4948	4820	4560	4288	4000
		Usk	A-956	D11864	Disconnect / DISCGroupOperated	MVA	2162.4	2116.2	2068.4	2020.6	1971.2	1920.2	1816.6	1708.2	1593.4
						Amps	5428	5312	5192	5072	4948	4820	4560	4288	4000
		Usk	N/A	Str 7/1-Cusick	OTF_StructuresAndLines / Pheasant	MVA	733.0	717.1	701.1	685.2	669.3	649.3	609.5	569.7	569.7
						Amps	1840	1800	1760	1720	1680	1630	1530	1430	1430
		Usk	N/A	Usk-Str 7/1	OTF_StructuresAndLines / Bittern	MVA	729.0	713.1	697.2	677.2	661.3	645.4	605.5	565.7	565.7
						Amps	1830	1790	1750	1700	1660	1620	1520	1420	1420

BPA Facility Ratings Report Baseline Date 9/9/2021 3:57:33 PM

							Parallel Normal								
Facility Name	**TOP**	**Substation**	**Position**	**Equipment ID**	**Type / Category**		**-15**	**-10**	**-5**	**0**	**5**	**10**	**20**	**30**	**40**
Usk-Boundary No 1 230kV line	No	Usk	N/A	Cusick-Str 41/3	OTF_StructuresAndLines / Pheasant	MVA	733.0	717.1	701.1	685.2	669.3	649.3	609.5	569.7	569.7
						Amps	1840	1800	1760	1720	1680	1630	1530	1430	1430
		Cusick	A-153	ID0177	Circuit Switcher / CSwithDisconnect	MVA	1792.0	1750.2	1707.4	1663.8	1619.4	1573.8	1479.6	1380.2	1274.8
						Amps	4498.56	4393.28	4286.08	4176.64	4064.96	3950.72	3714.24	3464.64	3200
		Cusick	A-154	ID0178	Circuit Switcher / CSwithDisconnect	MVA	1438.0	1408.4	1376.8	1345.2	1312.8	1279.2	1210.4	1103.4	956.0
						Amps	3609.6	3535.2	3456	3376.8	3295.2	3211.2	3038.4	2769.6	2400
		Cusick	A-155	D09229	Disconnect / DISCMOD	MVA	1438.0	1408.4	1376.8	1345.2	1312.8	1279.2	1210.4	1103.4	956.0
						Amps	3609.6	3535.2	3456	3376.8	3295.2	3211.2	3038.4	2769.6	2400
		Cusick	A-162	D12040	Disconnect / DISCMOD	MVA	1792.0	1750.2	1707.4	1663.8	1619.4	1573.8	1479.6	1380.2	1274.8
						Amps	4498.56	4393.28	4286.08	4176.64	4064.96	3950.72	3714.24	3464.64	3200
		Usk	N/A	Str 41/3-Str 45/4	OTF_StructuresAndLines / Chukar	MVA	896.3	876.4	856.5	836.6	816.7	792.8	745.0	697.2	697.2
						Amps	2250	2200	2150	2100	2050	1990	1870	1750	1750
		Usk	N/A	Str 45/4-Boundary	OTF_StructuresAndLines / Jefferson	MVA	872.4	844.5	816.7	788.8	756.9	721.1	649.3	569.7	569.7
						Amps	2190	2120	2050	1980	1900	1810	1630	1430	1430
		Boundary	A-1235 MB	D11019	Disconnect / DISCGroupOperated	MVA	958.6	938.9	917.8	896.8	875.1	852.8	806.9	735.6	637.4
						Amps	2406.4	2356.8	2304	2251.2	2196.8	2140.8	2025.6	1846.4	1600
		Boundary	A-1235	O02714	Circuit Breakers / BKRGasPufferHydraulic	MVA	1081.2	1058.1	1034.2	1010.3	985.6	960.1	908.3	854.1	796.7
						Amps	2714	2656	2596	2536	2474	2410	2280	2144	2000
		Boundary	A-1235 LS	D11020	Disconnect / DISCGroupOperated	MVA	958.6	938.9	917.8	896.8	875.1	852.8	806.9	735.6	637.4
						Amps	2406.4	2356.8	2304	2251.2	2196.8	2140.8	2025.6	1846.4	1600
		Boundary	A-1235 AB	D11018	Disconnect / DISCGroupOperated	MVA	958.6	938.9	917.8	896.8	875.1	852.8	806.9	735.6	637.4
						Amps	2406.4	2356.8	2304	2251.2	2196.8	2140.8	2025.6	1846.4	1600
Usk-Pine Street 115kV line	Yes	Usk	Pend Oreille PUD	Pend Oreille PUD PU6652 Circuit Breaker 1	Circuit Breakers / PU6652	MVA	239.0	239.0	239.0	239.0	239.0	239.0	239.0	239.0	239.0
						Amps	1200	1200	1200	1200	1200	1200	1200	1200	1200
		Usk	Pend Oreille PUD	Pend Oreille PUD PP6652 Circuit Breaker 2	Circuit Breakers / PP6652	MVA	239.0	239.0	239.0	239.0	239.0	239.0	239.0	239.0	239.0
						Amps	1200	1200	1200	1200	1200	1200	1200	1200	1200
		Usk	Pend Oreille PUD	Pend Oreille PUD PP6752 Circuit Breaker 3	Circuit Breakers / PP6752	MVA	239.0	239.0	239.0	239.0	239.0	239.0	239.0	239.0	239.0
						Amps	1200	1200	1200	1200	1200	1200	1200	1200	1200
		Usk	Pend Oreille PUD	Pend Oreille PUD PP6852 Circuit Breaker 4	Circuit Breakers / PP6852	MVA	239.0	239.0	239.0	239.0	239.0	239.0	239.0	239.0	239.0
						Amps	1200	1200	1200	1200	1200	1200	1200	1200	1200
		Usk	Pend Oreille PUD	Pend Oreille PUD PP6952 Circuit Breaker 5	Circuit Breakers / PP6952	MVA	239.0	239.0	239.0	239.0	239.0	239.0	239.0	239.0	239.0
						Amps	1200	1200	1200	1200	1200	1200	1200	1200	1200
		Usk	Pend Oreille PUD	Pend Oreille PUD PU6651 Disconnect 1	Disconnect / PU6651	MVA	239.0	239.0	239.0	239.0	239.0	239.0	239.0	239.0	239.0
						Amps	1200	1200	1200	1200	1200	1200	1200	1200	1200
		Usk	Pend Oreille PUD	Pend Oreille PUD PP6951 Disconnect 10	Disconnect / PP6951	MVA	239.0	239.0	239.0	239.0	239.0	239.0	239.0	239.0	239.0
						Amps	1200	1200	1200	1200	1200	1200	1200	1200	1200
		Usk	Pend Oreille PUD	Pend Oreille PUD PP6953 Disconnect 11	Disconnect / PP6953	MVA	239.0	239.0	239.0	239.0	239.0	239.0	239.0	239.0	239.0
						Amps	1200	1200	1200	1200	1200	1200	1200	1200	1200

BPA Facility Ratings Report Baseline Date 9/9/2021 3:57:33 PM

							Parallel Emergency								
Facility Name	TOP	Substation	Position	Equipment ID	Type / Category		-15	-10	-5	0	5	10	20	30	40
University (EWEB)-Willamette 115kV line	Yes	University (EWEB)	EWEB	EWEB WILLAMET-UNIV 7070	Circuit Breakers / 7070	Amps	2000	2000	2000	2000	2000	2000	2000	2000	2000
		University (EWEB)	EWEB	EWEB WILLAMET-UNIV 7060 Circuit Breaker 2	Circuit Breakers / 7060	MVA	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4
						Amps	2000	2000	2000	2000	2000	2000	2000	2000	2000
		University (EWEB)	EWEB	EWEB WILLAMET-UNIV 6050 Circuit Breaker 3	Circuit Breakers / 6050	MVA	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4
						Amps	2000	2000	2000	2000	2000	2000	2000	2000	2000
		University (EWEB)	EWEB	EWEB WILLAMET-UNIV 6060 Circuit Breaker 4	Circuit Breakers / 6060	MVA	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4
						Amps	2000	2000	2000	2000	2000	2000	2000	2000	2000
		University (EWEB)	EWEB	EWEB WILLAMET-UNIV MOD7073 Disconnect 1	Disconnect / MOD7073	MVA	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4
						Amps	2000	2000	2000	2000	2000	2000	2000	2000	2000
		University (EWEB)	EWEB	EWEB WILLAMET-UNIV MOD7071 Disconnect 2	Disconnect / MOD7071	MVA	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4
						Amps	2000	2000	2000	2000	2000	2000	2000	2000	2000
		University (EWEB)	EWEB	EWEB WILLAMET-UNIV MOD7063 Disconnect 3	Disconnect / MOD7063	MVA	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4
						Amps	2000	2000	2000	2000	2000	2000	2000	2000	2000
		University (EWEB)	EWEB	EWEB WILLAMET-UNIV MOD7061 Disconnect 4	Disconnect / MOD7061	MVA	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4
						Amps	2000	2000	2000	2000	2000	2000	2000	2000	2000
		University (EWEB)	EWEB	EWEB WILLAMET-UNIV MOD6063 Disconnect 5	Disconnect / MOD6063	MVA	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4
						Amps	2000	2000	2000	2000	2000	2000	2000	2000	2000
		University (EWEB)	EWEB	EWEB WILLAMET-UNIV MOD6049 Disconnect 6	Disconnect / MOD6049	MVA	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4
						Amps	2000	2000	2000	2000	2000	2000	2000	2000	2000
		University (EWEB)	EWEB	EWEB WILLAMET-UNIV MOD6051 Disconnect 7	Disconnect / MOD6051	MVA	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4
						Amps	2000	2000	2000	2000	2000	2000	2000	2000	2000
		University (EWEB)	EWEB	EWEB WILLAMET-UNIV MOD6053 Disconnect 8	Disconnect / MOD6053	MVA	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4
						Amps	2000	2000	2000	2000	2000	2000	2000	2000	2000
		University (EWEB)	EWEB	EWEB WILLAMET-UNIV MOD6061 Disconnect 9	Disconnect / MOD6061	MVA	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4
						Amps	2000	2000	2000	2000	2000	2000	2000	2000	2000
Usk-Boundary No 1 230kV line	No	Usk	A-951	D11865	Disconnect / DISCGroupOperated	MVA	2444.4	2377.4	2309.0	2238.8	2167.2	2092.2	1937.6	1772.0	1593.4
						Amps	6136	5968	5796	5620	5440	5252	4864	4448	4000
		Usk	A-952	D11866	Disconnect / DISCGroupOperated	MVA	3022.2	2958.8	2894.0	2827.8	2760.0	2690.4	2545.8	2392.2	2228.2
						Amps	7586.4	7427.2	7264.8	7098.4	6928	6753.6	6390.4	6004.8	5593.2
		Usk	A-953	O02729	Circuit Breakers / BKRGasPufferAir	MVA	2444.4	2377.4	2309.0	2238.8	2167.2	2092.2	1937.6	1772.0	1593.4
						Amps	6136	5968	5796	5620	5440	5252	4864	4448	4000
		Usk	A-954	D11867	Disconnect / DISCGroupOperated	MVA	2444.4	2377.4	2309.0	2238.8	2167.2	2092.2	1937.6	1772.0	1593.4
						Amps	6136	5968	5796	5620	5440	5252	4864	4448	4000
		Usk	A-955	O02730	Circuit Breakers / BKRGasPufferAir	MVA	2444.4	2377.4	2309.0	2238.8	2167.2	2092.2	1937.6	1772.0	1593.4
						Amps	6136	5968	5796	5620	5440	5252	4864	4448	4000
		Usk	A-956	D11864	Disconnect / DISCGroupOperated	MVA	2444.4	2377.4	2309.0	2238.8	2167.2	2092.2	1937.6	1772.0	1593.4
						Amps	6136	5968	5796	5620	5440	5252	4864	4448	4000

BPA Facility Ratings Report Baseline Date 9/9/2021 3:57:33 PM

							Parallel Emergency								
Facility Name	TOP	Substation	Position	Equipment ID	Type / Category		-15	-10	-5	0	5	10	20	30	40
Usk-Boundary No 1 230kV line	No	Usk	N/A	Str 7/1-Cusick	OTF_StructuresAndLines / Pheasant	MVA	733.0	717.1	701.1	685.2	669.3	649.3	609.5	569.7	569.7
						Amps	1840	1800	1760	1720	1680	1630	1530	1430	1430
		Usk	N/A	Usk-Str 7/1	OTF_StructuresAndLines / Bittern	MVA	729.0	713.1	697.2	677.2	661.3	645.4	605.5	565.7	565.7
						Amps	1830	1790	1750	1700	1660	1620	1520	1420	1420
		Usk	N/A	Cusick-Str 41/3	OTF_StructuresAndLines / Pheasant	MVA	733.0	717.1	701.1	685.2	669.3	649.3	609.5	569.7	569.7
						Amps	1840	1800	1760	1720	1680	1630	1530	1430	1430
		Cusick	A-153	ID0177	Circuit Switcher / CSwithDisconnect	MVA	2215.0	2159.2	2102.0	2043.6	1983.8	1922.6	1795.2	1660.0	1515.4
						Amps	5560.32	5420.16	5276.48	5129.92	4979.84	4826.24	4506.24	4166.72	3803.84
		Cusick	A-154	ID0178	Circuit Switcher / CSwithDisconnect	MVA	1813.4	1775.2	1736.4	1696.6	1656.0	1614.2	1527.4	1435.2	1337.0
						Amps	4551.84	4456.32	4358.88	4259.04	4156.8	4052.16	3834.24	3602.88	3355.92
		Cusick	A-155	D09229	Disconnect / DISCMOD	MVA	1813.4	1775.2	1736.4	1696.6	1656.0	1614.2	1527.4	1435.2	1337.0
						Amps	4551.84	4456.32	4358.88	4259.04	4156.8	4052.16	3834.24	3602.88	3355.92
		Cusick	A-162	D12040	Disconnect / DISCMOD	MVA	2215.0	2159.2	2102.0	2043.6	1983.8	1922.6	1795.2	1660.0	1515.4
						Amps	5560.32	5420.16	5276.48	5129.92	4979.84	4826.24	4506.24	4166.72	3803.84
		Usk	N/A	Str 41/3-Str 45/4	OTF_StructuresAndLines / Chukar	MVA	896.3	876.4	856.5	836.6	816.7	792.8	745.0	697.2	697.2
						Amps	2250	2200	2150	2100	2050	1990	1870	1750	1750
		Usk	N/A	Str 45/4-Boundary	OTF_StructuresAndLines / Jefferson	MVA	872.4	844.5	816.7	788.8	756.9	721.1	649.3	569.7	569.7
						Amps	2190	2120	2050	1980	1900	1810	1630	1430	1430
		Boundary	A-1235 MB	D11019	Disconnect / DISCGroupOperated	MVA	1208.9	1183.5	1157.6	1131.1	1104.0	1076.2	1018.3	956.9	891.3
						Amps	3034.56	2970.88	2905.92	2839.36	2771.2	2701.44	2556.16	2401.92	2237.28
		Boundary	A-1235	O02714	Circuit Breakers / BKRGasPufferHydraulic	MVA	1222.2	1188.7	1154.5	1119.4	1083.6	1046.1	968.8	886.0	796.7
						Amps	3068	2984	2898	2810	2720	2626	2432	2224	2000
		Boundary	A-1235 LS	D11020	Disconnect / DISCGroupOperated	MVA	1208.9	1183.5	1157.6	1131.1	1104.0	1076.2	1018.3	956.9	891.3
						Amps	3034.56	2970.88	2905.92	2839.36	2771.2	2701.44	2556.16	2401.92	2237.28
		Boundary	A-1235 AB	D11018	Disconnect / DISCGroupOperated	MVA	1208.9	1183.5	1157.6	1131.1	1104.0	1076.2	1018.3	956.9	891.3
						Amps	3034.56	2970.88	2905.92	2839.36	2771.2	2701.44	2556.16	2401.92	2237.28
Usk-Pine Street 115kV line	Yes	Usk	Pend Oreille PUD	Pend Oreille PUD PU6652 Circuit Breaker 1	Circuit Breakers / PU6652	MVA	239.0	239.0	239.0	239.0	239.0	239.0	239.0	239.0	239.0
						Amps	1200	1200	1200	1200	1200	1200	1200	1200	1200
		Usk	Pend Oreille PUD	Pend Oreille PUD PP6652 Circuit Breaker 2	Circuit Breakers / PP6652	MVA	239.0	239.0	239.0	239.0	239.0	239.0	239.0	239.0	239.0
						Amps	1200	1200	1200	1200	1200	1200	1200	1200	1200
		Usk	Pend Oreille PUD	Pend Oreille PUD PP6752 Circuit Breaker 3	Circuit Breakers / PP6752	MVA	239.0	239.0	239.0	239.0	239.0	239.0	239.0	239.0	239.0
						Amps	1200	1200	1200	1200	1200	1200	1200	1200	1200
		Usk	Pend Oreille PUD	Pend Oreille PUD PP6852 Circuit Breaker 4	Circuit Breakers / PP6852	MVA	239.0	239.0	239.0	239.0	239.0	239.0	239.0	239.0	239.0
						Amps	1200	1200	1200	1200	1200	1200	1200	1200	1200
		Usk	Pend Oreille PUD	Pend Oreille PUD PP6952 Circuit Breaker 5	Circuit Breakers / PP6952	MVA	239.0	239.0	239.0	239.0	239.0	239.0	239.0	239.0	239.0
						Amps	1200	1200	1200	1200	1200	1200	1200	1200	1200
		Usk	Pend Oreille PUD	Pend Oreille PUD PU6651 Disconnect 1	Disconnect / PU6651	MVA	336.6	336.6	336.6	336.6	336.6	336.6	308.7	275.9	239.0