

BP-16 Final Rate Proposal

# Power Loads and Resources Study Documentation

BP-16-FS-BPA-03A

July 2015





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## COMMONLY USED ACRONYMS AND SHORT FORMS

ACNR	Accumulated Calibrated Net Revenue
ACS	Ancillary and Control Area Services
AF	Advance Funding
aMW	average megawatt(s)
ANR	Accumulated Net Revenues
ASC	Average System Cost
BAA	Balancing Authority Area
BiOp	Biological Opinion
BPA	Bonneville Power Administration
Btu	British thermal unit
CDQ	Contract Demand Quantity
CGS	Columbia Generating Station
CHWM	Contract High Water Mark
CIR	Capital Investment Review
COE	U.S. Army Corps of Engineers
COI	California-Oregon Intertie
Commission	Federal Energy Regulatory Commission
Corps	U.S. Army Corps of Engineers
COSA	Cost of Service Analysis
COU	consumer-owned utility
Council	Northwest Power and Conservation Council
CP	Coincidental Peak
CRAC	Cost Recovery Adjustment Clause
CSP	Customer System Peak
CT	combustion turbine
CY	calendar year (January through December)
DDC	Dividend Distribution Clause
<i>dec</i>	decrease, decrement, or decremental
DERBS	Dispatchable Energy Resource Balancing Service
DFS	Diurnal Flattening Service
DNR	Designated Network Resource
DOE	Department of Energy
DOI	Department of Interior
DSI	direct-service industrial customer or direct-service industry
DSO	Dispatcher Standing Order
EE	Energy Efficiency
EIS	Environmental Impact Statement
EN	Energy Northwest, Inc.
ESA	Endangered Species Act
ESS	Energy Shaping Service
e-Tag	electronic interchange transaction information
FBS	Federal base system
FCRPS	Federal Columbia River Power System
FCRTS	Federal Columbia River Transmission System
FELCC	firm energy load carrying capability

FORS	Forced Outage Reserve Service
FPS	Firm Power and Surplus Products and Services
FPT	Formula Power Transmission
FY	fiscal year (October through September)
G&A	general and administrative (costs)
GARD	Generation and Reserves Dispatch (computer model)
GMS	Grandfathered Generation Management Service
GSR	Generation Supplied Reactive
GRSPs	General Rate Schedule Provisions
GTA	General Transfer Agreement
GWh	gigawatthour
HLH	Heavy Load Hour(s)
HOSS	Hourly Operating and Scheduling Simulator (computer model)
HYDSIM	Hydrosystem Simulator (computer model)
IE	Eastern Intertie
IM	Montana Intertie
<i>inc</i>	increase, increment, or incremental
IOU	investor-owned utility
IP	Industrial Firm Power
IPR	Integrated Program Review
IR	Integration of Resources
IRD	Irrigation Rate Discount
IRM	Irrigation Rate Mitigation
IRMP	Irrigation Rate Mitigation Product
IS	Southern Intertie
kcfs	thousand cubic feet per second
kW	kilowatt
kWh	kilowatthour
LDD	Low Density Discount
LLH	Light Load Hour(s)
LPP	Large Project Program
LPTAC	Large Project Targeted Adjustment Charge
Maf	million acre-feet
Mid-C	Mid-Columbia
MMBtu	million British thermal units
MRNR	Minimum Required Net Revenue
MW	megawatt
MWh	megawatthour
NCP	Non-Coincidental Peak
NEPA	National Environmental Policy Act
NERC	North American Electric Reliability Corporation
NFB	National Marine Fisheries Service (NMFS) Federal Columbia River Power System (FCRPS) Biological Opinion (BiOp)
NIFC	Northwest Infrastructure Financing Corporation
NLSL	New Large Single Load
NMFS	National Marine Fisheries Service
NOAA Fisheries	National Oceanographic and Atmospheric Administration Fisheries

NORM	Non-Operating Risk Model (computer model)
Northwest Power Act	Pacific Northwest Electric Power Planning and Conservation Act
NP-15	North of Path 15
NPCC	Pacific Northwest Electric Power and Conservation Planning Council
NPV	net present value
NR	New Resource Firm Power
NRFS	NR Resource Flattening Service
NT	Network Integration
NTSA	Non-Treaty Storage Agreement
NUG	non-utility generation
NWPP	Northwest Power Pool
OATT	Open Access Transmission Tariff
O&M	operation and maintenance
OATI	Open Access Technology International, Inc.
OMP	Oversupply Management Protocol
OS	Oversupply
OY	operating year (August through July)
PDCI	Pacific DC Intertie
Peak	Peak Reliability
PF	Priority Firm Power
PFIA	Projects Funded in Advance
PFp	Priority Firm Public
PFx	Priority Firm Exchange
PNCA	Pacific Northwest Coordination Agreement
PNRR	Planned Net Revenues for Risk
PNW	Pacific Northwest
POD	Point of Delivery
POI	Point of Integration or Point of Interconnection
POR	Point of Receipt
Project Act	Bonneville Project Act
PRS	Power Rates Study
PS	Power Services
PSC	power sales contract
PSW	Pacific Southwest
PTP	Point to Point
PUD	public or people's utility district
PW	WECC and Peak Service
RAM	Rate Analysis Model (computer model)
RD	Regional Dialogue
REC	Renewable Energy Certificate
Reclamation	U.S. Bureau of Reclamation
REP	Residential Exchange Program
REPSIA	REP Settlement Implementation Agreement
RevSim	Revenue Simulation Model
RFA	Revenue Forecast Application (database)
RHWM	Rate Period High Water Mark

ROD	Record of Decision
RPSA	Residential Purchase and Sale Agreement
RR	Resource Replacement
RRS	Resource Remarketing Service
RSC	Resource Shaping Charge
RSS	Resource Support Services
RT1SC	RHWM Tier 1 System Capability
SCD	Scheduling, System Control, and Dispatch rate
SCS	Secondary Crediting Service
SDD	Short Distance Discount
SILS	Southeast Idaho Load Service
Slice	Slice of the System (product)
T1SFCO	Tier 1 System Firm Critical Output
TCMS	Transmission Curtailment Management Service
TGT	Townsend-Garrison Transmission
TOCA	Tier 1 Cost Allocator
TPP	Treasury Payment Probability
TRAM	Transmission Risk Analysis Model
Transmission System Act	Federal Columbia River Transmission System Act
Treaty	Columbia River Treaty
TRL	Total Retail Load
TRM	Tiered Rate Methodology
TS	Transmission Services
TSS	Transmission Scheduling Service
UAI	Unauthorized Increase
UFT	Use of Facilities Transmission
UIC	Unauthorized Increase Charge
ULS	Unanticipated Load Service
USACE	U.S. Army Corps of Engineers
USBR	U.S. Bureau of Reclamation
USFWS	U.S. Fish & Wildlife Service
VERBS	Variable Energy Resources Balancing Service
VOR	Value of Reserves
VR1-2014	First Vintage Rate of the BP-14 rate period (PF Tier 2 rate)
VR1-2016	First Vintage Rate of the BP-16 rate period (PF Tier 2 rate)
WECC	Western Electricity Coordinating Council
WSPP	Western Systems Power Pool

<b>1.</b>	<b>DOCUMENTATION FOR – POWER LOADS AND RESOURCES STUDY.....</b>	<b>1</b>
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**Table 1.1.1**  
**Load Following Service Customers**

Albion, City of	Ellensburg, City of	Mission Valley Power
Alder Mutual	Elmhurst Mutual P & L	Missoula Elec Coop
Ashland, City of	Energy Northwest	Modern Elec Coop
Asotin County PUD #1	Fairchild AFB	Monmouth, City of
Bandon, City of	Fall River Rural Elec Coop	Nespelem Valley Elec Coop
Benton REA	Farmers Elec Coop	Northern Lights
Big Bend Elec Coop	Ferry County PUD #1	Northern Wasco County PUD
Blachly-Lane Electric Coop	Flathead Elec Coop	Ohop Mutual Light Company
Blaine, City of	Forest Grove, City of	Okanogan County Elec Coop
Bonnars Ferry, City of	Glacier Elec Coop	Orcas P & L
Burley, City of	Grant County PUD #2	Oregon Trail Coop
Canby, City of	Harney Elec Coop	Parkland L & W
Cascade Locks, City of	Hermiston, City of	Peninsula Light Company
Central Lincoln	Heyburn, City of	Plummer, City of
Central MT Elec Power Coop	Hood River Elec Coop	Port Angeles, City of
Centralia, City of	Idaho County L & P	Port of Seattle
Cheney, City of	Inland P & L	Puget Sound Naval Shipyard (Bremerton)
Chewelah, City of	Jefferson County PUD	Raft River Rural Elec Coop
Clallam County PUD #1	Kittitas County PUD #1	Ravalli Elec Coop
Clearwater Power	Kootenai Electric Coop	Richland, City of
Columbia Basin Elec Coop	Lakeview L & P (WA)	Riverside Elec Coop
Columbia Power Coop	Lane Elec Coop	Rupert, City of
Columbia REA	Lincoln Elec Coop	Salem Elec Coop
Columbia River PUD	Lost River Elec Coop	Salmon River Elec Coop
Consol Irrig Dist #19	Lower Valley P & L	Skamania County PUD #1
Consumer's Power	Mason County PUD #1	Soda Springs, City of
Coos-Curry Electric Coop	Mason County PUD #3	South Side Elec
Coulee Dam, City of	McCleary, City of	Springfield Utilitiy Board
Declo, City of	McMinnville, City of	Steilacoom, Town of
Douglas Electric Coop	Midstate Elec Coop	Sumas, Town of
Drain, City of	Milton Freewater, City of	Surprise Valley Elec Coop
East End Mutual Electric	Milton, Town of	Tanner Elec Coop
Eatonville, City of	Minidoka, City of	Tillamook PUD #1

**Table 1.1.1 - continued**  
**Load Following Service Customers**

Troy, City of	USBIA Wapato	Wasco Elec Coop
U.S. Bureau of Reclamation (Roza)	USDOE-Albany	Weiser, City of
U.S. Naval Station, Everett (Jim Creek)	USDOE-Richland	Wells Rural Elec Co
U.S. Naval Submarine Base,(Bangor)	Vera Irrigation District	West Oregon Elec Coop
Umatilla Elec Coop	Vigilante Elec Coop	Whatcom County PUD #1
Umpqua Indian Utility Cooperative	Wahkiakum County PUD #1	Yakama Power
United Electric Coop		

**Table 1.1.2**  
**Tier 1 Block Service Customers**

Pend Oreille		
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**Table 1.1.3**  
**Slice Service Customers**

Benton PUD	Franklin	Pacific
Clark	Grays Harbor	Seattle
Clatskanie	Idaho Falls	Snohomish
Cowlitz	Klickitat	Tacoma
Emerald	Lewis	
EWEB	Okanogan PUD	

**Table 1.1.4**  
**USBR Obligation Customers**

USBR Chief Joseph Project	USBR Rathdrum Prairie Project	USBR Tualatin Valley Project
USBR Columbia Basin Project	USBR Southern Idaho Projects	USBR Owyhee Project
USBR Crooked River Project	USBR Spokane Indian Development Project	USBR Umatilla Project
USBR The Dalles Reclamation Project	USBR Spokane Valley Project	USBR Yakima Project

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Table 1.2.1  
**Table A-6: BPA Sales to Preference and Legacy Customers**  
 Fiscal Year 2016 Water Year: 1937  
**BP-2016 Final Rate Proposal** Report Date: 6/9/2015  
 S124-RC-20150609-145700

Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<b>Pacific Northwest</b>															
<b>1 DSI Obligation</b>	<b>91</b>	<b>91</b>	<b>91</b>	<b>91</b>	<b>91</b>	<b>91</b>	<b>91</b>	<b>91</b>	<b>91</b>	<b>91</b>	<b>91</b>	<b>91</b>	<b>91</b>	<b>91</b>	<b>91</b>
2 Direct Service Industry	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91
<b>3 Load Following</b>	<b>2,846</b>	<b>3,400</b>	<b>3,852</b>	<b>3,805</b>	<b>3,554</b>	<b>3,194</b>	<b>3,033</b>	<b>3,033</b>	<b>2,944</b>	<b>3,032</b>	<b>3,299</b>	<b>3,228</b>	<b>3,232</b>	<b>2,952</b>	<b>3,262</b>
4 Cooperative	1,581	1,853	2,126	2,085	1,941	1,737	1,682	1,682	1,721	1,830	2,030	1,962	1,964	1,726	1,857
5 Municipality	510	611	695	690	641	576	541	541	496	494	545	547	548	510	571
6 Public Utility District	654	808	884	885	837	755	702	702	628	616	623	616	617	621	719
7 Federal Entities	101	128	147	145	135	126	109	109	100	92	101	103	103	95	115
<b>8 Slice Block</b>	<b>1,630</b>	<b>2,010</b>	<b>2,233</b>	<b>2,263</b>	<b>2,019</b>	<b>1,946</b>	<b>1,639</b>	<b>1,639</b>	<b>1,448</b>	<b>1,358</b>	<b>1,579</b>	<b>1,573</b>	<b>1,573</b>	<b>1,643</b>	<b>1,778</b>
9 Municipality	544	758	827	857	783	781	539	539	357	284	460	480	480	603	606
10 Public Utility District	1,086	1,251	1,406	1,406	1,235	1,165	1,100	1,100	1,091	1,074	1,120	1,093	1,093	1,040	1,173
<b>11 Slice Output from T1 System</b>	<b>1,664</b>	<b>2,115</b>	<b>2,045</b>	<b>1,666</b>	<b>1,767</b>	<b>1,764</b>	<b>1,577</b>	<b>1,432</b>	<b>2,417</b>	<b>2,122</b>	<b>1,775</b>	<b>1,997</b>	<b>1,746</b>	<b>1,608</b>	<b>1,860</b>
12 Municipality	559	710	687	559	593	592	529	481	811	712	596	670	586	540	625
13 Public Utility District	1,105	1,405	1,359	1,107	1,174	1,172	1,047	951	1,605	1,409	1,179	1,326	1,160	1,068	1,236
<b>14 Tier 1 Block</b>	<b>2</b>	<b>10</b>	<b>9</b>	<b>12</b>	<b>12</b>	<b>10</b>	<b>1</b>	<b>1</b>	<b>-</b>	<b>-</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>5</b>	<b>6</b>
15 Public Utility District	2	10	9	12	12	10	1	1	-	-	2	3	3	5	6
<b>16 Tier 2 - Aggregate</b>	<b>68</b>	<b>68</b>	<b>68</b>	<b>68</b>	<b>68</b>	<b>68</b>	<b>68</b>	<b>68</b>	<b>68</b>	<b>68</b>	<b>68</b>	<b>68</b>	<b>68</b>	<b>68</b>	<b>68</b>
17 Other	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68
<b>18 USBR Obligation</b>	<b>111</b>	<b>38</b>	<b>38</b>	<b>23</b>	<b>25</b>	<b>71</b>	<b>256</b>	<b>256</b>	<b>330</b>	<b>344</b>	<b>404</b>	<b>299</b>	<b>299</b>	<b>257</b>	<b>183</b>
19 USBR	111	38	38	23	25	71	256	256	330	344	404	299	299	257	183
<b>Total Power Sales Contracts</b>															
20 Cooperative	1,581	1,853	2,126	2,085	1,941	1,737	1,682	1,682	1,721	1,830	2,030	1,962	1,964	1,726	1,857
21 Direct Service Industry	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91
22 Federal Entities	101	128	147	145	135	126	109	109	100	92	101	103	103	95	115
23 Municipality	1,612	2,080	2,208	2,106	2,018	1,949	1,609	1,561	1,665	1,490	1,601	1,697	1,614	1,652	1,802
24 Other	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68
25 Public Utility District	2,848	3,474	3,658	3,410	3,257	3,103	2,850	2,754	3,324	3,100	2,924	3,038	2,873	2,735	3,133
26 USBR	111	38	38	23	25	71	256	256	330	344	404	299	299	257	183
<b>27 Total Power Sales Contracts</b>	<b>6,413</b>	<b>7,731</b>	<b>8,336</b>	<b>7,929</b>	<b>7,535</b>	<b>7,144</b>	<b>6,666</b>	<b>6,521</b>	<b>7,299</b>	<b>7,015</b>	<b>7,218</b>	<b>7,259</b>	<b>7,012</b>	<b>6,625</b>	<b>7,249</b>

Table 1.2.1  
**Table A-6: BPA Sales to Preference and Legacy Customers**  
 Fiscal Year 2017 Water Year: 1937  
**BP-2016 Final Rate Proposal** Report Date: 6/9/2015  
 S124-RC-20150609-145700

Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<b>Pacific Northwest</b>															
<b>1 DSI Obligation</b>	<b>91</b>	<b>91</b>	<b>91</b>	<b>91</b>	<b>91</b>	<b>91</b>	<b>92</b>	<b>91</b>	<b>91</b>	<b>91</b>	<b>91</b>	<b>91</b>	<b>91</b>	<b>91</b>	<b>91</b>
2 Direct Service Industry	91	91	91	91	91	91	92	91	91	91	91	91	91	91	91
<b>3 Load Following</b>	<b>2,864</b>	<b>3,423</b>	<b>3,868</b>	<b>3,822</b>	<b>3,642</b>	<b>3,190</b>	<b>3,056</b>	<b>3,029</b>	<b>2,948</b>	<b>3,035</b>	<b>3,307</b>	<b>3,243</b>	<b>3,246</b>	<b>2,966</b>	<b>3,278</b>
4 Cooperative	1,588	1,866	2,135	2,094	1,997	1,742	1,693	1,679	1,720	1,834	2,036	1,968	1,970	1,732	1,866
5 Municipality	514	616	700	691	651	576	545	538	496	495	547	548	549	511	574
6 Public Utility District	661	812	885	887	852	742	706	700	629	611	621	621	621	626	720
7 Federal Entities	102	129	148	150	143	129	113	112	103	95	104	106	106	97	118
<b>8 Slice Block</b>	<b>1,662</b>	<b>2,048</b>	<b>2,276</b>	<b>2,305</b>	<b>2,130</b>	<b>1,982</b>	<b>1,671</b>	<b>1,671</b>	<b>1,477</b>	<b>1,385</b>	<b>1,609</b>	<b>1,603</b>	<b>1,603</b>	<b>1,673</b>	<b>1,817</b>
9 Municipality	551	768	838	868	822	791	546	546	362	288	466	487	487	611	616
10 Public Utility District	1,111	1,280	1,438	1,437	1,308	1,191	1,124	1,124	1,114	1,097	1,143	1,116	1,116	1,063	1,202
<b>11 Slice Output from T1 System</b>	<b>1,658</b>	<b>2,104</b>	<b>2,034</b>	<b>1,654</b>	<b>1,753</b>	<b>1,751</b>	<b>1,654</b>	<b>1,533</b>	<b>2,347</b>	<b>1,865</b>	<b>1,746</b>	<b>1,993</b>	<b>1,743</b>	<b>1,614</b>	<b>1,833</b>
12 Municipality	557	707	683	555	589	588	555	515	788	626	586	669	585	542	615
13 Public Utility District	1,101	1,398	1,351	1,098	1,164	1,163	1,098	1,018	1,559	1,239	1,159	1,324	1,158	1,072	1,218
<b>14 Tier 1 Block</b>	<b>10</b>	<b>46</b>	<b>40</b>	<b>57</b>	<b>56</b>	<b>48</b>	<b>3</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>11</b>	<b>12</b>	<b>12</b>	<b>24</b>	<b>25</b>
15 Public Utility District	10	46	40	57	56	48	3	3	-	-	11	12	12	24	25
<b>16 Tier 2 - Aggregate</b>	<b>79</b>	<b>79</b>	<b>79</b>	<b>79</b>	<b>79</b>	<b>79</b>	<b>79</b>	<b>79</b>	<b>79</b>	<b>79</b>	<b>79</b>	<b>79</b>	<b>79</b>	<b>79</b>	<b>79</b>
17 Other	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79
<b>18 USBR Obligation</b>	<b>111</b>	<b>38</b>	<b>38</b>	<b>23</b>	<b>25</b>	<b>71</b>	<b>255</b>	<b>257</b>	<b>330</b>	<b>344</b>	<b>404</b>	<b>299</b>	<b>299</b>	<b>257</b>	<b>184</b>
19 USBR	111	38	38	23	25	71	255	257	330	344	404	299	299	257	184
<b>Total Power Sales Contracts</b>															
20 Cooperative	1,588	1,866	2,135	2,094	1,997	1,742	1,693	1,679	1,720	1,834	2,036	1,968	1,970	1,732	1,866
21 Direct Service Industry	91	91	91	91	91	91	92	91	91	91	91	91	91	91	91
22 Federal Entities	102	129	148	150	143	129	113	112	103	95	104	106	106	97	118
23 Municipality	1,621	2,090	2,220	2,115	2,062	1,956	1,647	1,599	1,647	1,409	1,599	1,704	1,621	1,663	1,805
24 Other	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79
25 Public Utility District	2,883	3,535	3,715	3,480	3,380	3,144	2,931	2,845	3,302	2,947	2,934	3,072	2,907	2,784	3,165
26 USBR	111	38	38	23	25	71	255	257	330	344	404	299	299	257	184
<b>27 Total Power Sales Contracts</b>	<b>6,475</b>	<b>7,830</b>	<b>8,426</b>	<b>8,032</b>	<b>7,777</b>	<b>7,213</b>	<b>6,809</b>	<b>6,663</b>	<b>7,272</b>	<b>6,800</b>	<b>7,246</b>	<b>7,320</b>	<b>7,073</b>	<b>6,705</b>	<b>7,308</b>

**Table 1.2.2**  
**Table A-6: BPA Sales to Preference and Legacy Customers**  
**Fiscal Year 2016 Water Year: 1937**  
**BP-2016 Final Rate Proposal Report Date: 6/9/2015**  
S124-RC-20150609-145700

HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Pacific Northwest</b>															
<b>1 DSI Obligation</b>	<b>39,202</b>	<b>36,393</b>	<b>36,103</b>	<b>37,726</b>	<b>36,158</b>	<b>37,948</b>	<b>18,915</b>	<b>18,915</b>	<b>37,600</b>	<b>36,448</b>	<b>37,133</b>	<b>18,943</b>	<b>20,400</b>	<b>34,670</b>	<b>446,552</b>
2 Direct Service Industry	39,202	36,393	36,103	37,726	36,158	37,948	18,915	18,915	37,600	36,448	37,133	18,943	20,400	34,670	446,552
<b>3 Load Following</b>	<b>1,314,237</b>	<b>1,434,510</b>	<b>1,694,415</b>	<b>1,649,550</b>	<b>1,500,073</b>	<b>1,453,217</b>	<b>669,390</b>	<b>669,390</b>	<b>1,293,888</b>	<b>1,351,142</b>	<b>1,465,414</b>	<b>723,178</b>	<b>778,807</b>	<b>1,278,231</b>	<b>17,275,442</b>
4 Cooperative	724,653	780,399	928,913	899,904	813,577	785,777	368,219	368,219	751,262	808,280	892,925	434,730	468,170	740,496	9,765,525
5 Municipality	240,917	262,650	310,345	305,582	275,115	265,856	122,838	122,838	225,848	226,450	253,384	126,487	136,217	228,406	3,102,934
6 Public Utility District	303,770	338,465	393,404	382,876	356,403	346,445	155,204	155,204	273,651	275,988	274,499	139,163	149,867	269,768	3,814,709
7 Federal Entities	44,896	52,995	61,752	61,188	54,978	55,138	23,129	23,129	43,127	40,424	44,605	22,799	24,552	39,560	592,274
<b>8 Slice Block</b>	<b>704,221</b>	<b>771,663</b>	<b>928,993</b>	<b>905,048</b>	<b>807,476</b>	<b>840,633</b>	<b>340,932</b>	<b>340,932</b>	<b>579,259</b>	<b>564,999</b>	<b>631,767</b>	<b>327,278</b>	<b>352,453</b>	<b>657,153</b>	<b>8,752,807</b>
9 Municipality	234,883	291,161	343,896	342,728	313,396	337,294	112,134	112,134	142,942	118,121	183,816	99,902	107,587	241,066	2,981,062
10 Public Utility District	469,339	480,501	585,097	562,319	494,080	503,339	228,798	228,798	436,317	446,878	447,950	227,376	244,866	416,087	5,771,745
<b>11 Slice Output from T1 System</b>	<b>794,784</b>	<b>960,264</b>	<b>947,771</b>	<b>776,191</b>	<b>788,307</b>	<b>820,570</b>	<b>355,654</b>	<b>322,391</b>	<b>1,163,050</b>	<b>980,011</b>	<b>875,038</b>	<b>496,039</b>	<b>433,379</b>	<b>718,844</b>	<b>10,432,291</b>
12 Municipality	266,852	322,412	318,218	260,609	264,677	275,509	119,412	108,244	390,498	329,042	293,797	166,547	145,508	241,355	3,502,680
13 Public Utility District	527,932	637,852	629,553	515,582	523,630	545,060	236,242	214,147	772,552	650,969	581,241	329,492	287,870	477,489	6,929,611
<b>14 Tier 1 Block</b>	<b>963</b>	<b>3,871</b>	<b>3,682</b>	<b>4,983</b>	<b>4,710</b>	<b>4,510</b>	<b>141</b>	<b>141</b>	<b>-</b>	<b>-</b>	<b>997</b>	<b>532</b>	<b>573</b>	<b>2,114</b>	<b>27,216</b>
15 Public Utility District	963	3,871	3,682	4,983	4,710	4,510	141	141	-	-	997	532	573	2,114	27,216
<b>16 Tier 2 - Aggregate</b>	<b>29,408</b>	<b>26,140</b>	<b>28,318</b>	<b>27,229</b>	<b>27,229</b>	<b>29,408</b>	<b>14,159</b>	<b>14,159</b>	<b>27,229</b>	<b>28,318</b>	<b>27,229</b>	<b>14,159</b>	<b>15,248</b>	<b>27,229</b>	<b>335,464</b>
17 Other	29,408	26,140	28,318	27,229	27,229	29,408	14,159	14,159	27,229	28,318	27,229	14,159	15,248	27,229	335,464
<b>18 USBR Obligation</b>	<b>25,897</b>	<b>11,665</b>	<b>10,868</b>	<b>11,447</b>	<b>10,009</b>	<b>18,509</b>	<b>55,433</b>	<b>55,433</b>	<b>115,150</b>	<b>137,168</b>	<b>133,259</b>	<b>53,277</b>	<b>57,375</b>	<b>82,225</b>	<b>777,714</b>
19 USBR	25,897	11,665	10,868	11,447	10,009	18,509	55,433	55,433	115,150	137,168	133,259	53,277	57,375	82,225	777,714
<b>Total Power Sales Contracts</b>															
20 Cooperative	724,653	780,399	928,913	899,904	813,577	785,777	368,219	368,219	751,262	808,280	892,925	434,730	468,170	740,496	9,765,525
21 Direct Service Industry	39,202	36,393	36,103	37,726	36,158	37,948	18,915	18,915	37,600	36,448	37,133	18,943	20,400	34,670	446,552
22 Federal Entities	44,896	52,995	61,752	61,188	54,978	55,138	23,129	23,129	43,127	40,424	44,605	22,799	24,552	39,560	592,274
23 Municipality	742,652	876,224	972,459	908,920	853,188	878,659	354,384	343,216	759,288	673,613	730,998	392,936	389,313	710,827	9,586,677
24 Other	29,408	26,140	28,318	27,229	27,229	29,408	14,159	14,159	27,229	28,318	27,229	14,159	15,248	27,229	335,464
25 Public Utility District	1,302,004	1,460,688	1,611,736	1,465,761	1,378,823	1,399,355	620,385	598,290	1,482,520	1,373,834	1,304,687	696,562	683,176	1,165,459	16,543,280
26 USBR	25,897	11,665	10,868	11,447	10,009	18,509	55,433	55,433	115,150	137,168	133,259	53,277	57,375	82,225	777,714
<b>27 Total Power Sales Contracts</b>	<b>2,908,711</b>	<b>3,244,505</b>	<b>3,650,150</b>	<b>3,412,174</b>	<b>3,173,961</b>	<b>3,204,793</b>	<b>1,454,625</b>	<b>1,421,362</b>	<b>3,216,176</b>	<b>3,098,086</b>	<b>3,170,836</b>	<b>1,633,405</b>	<b>1,658,235</b>	<b>2,800,467</b>	<b>38,047,486</b>

**Table 1.2.2**  
**Table A-6: BPA Sales to Preference and Legacy Customers**  
**Fiscal Year 2017 Water Year: 1937**  
**BP-2016 Final Rate Proposal Report Date: 6/9/2015**  
S124-RC-20150609-145700

HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Pacific Northwest</b>															
<b>1 DSI Obligation</b>	<b>39,202</b>	<b>36,393</b>	<b>36,103</b>	<b>37,726</b>	<b>34,911</b>	<b>37,948</b>	<b>19,672</b>	<b>18,158</b>	<b>37,600</b>	<b>36,448</b>	<b>37,133</b>	<b>18,943</b>	<b>20,400</b>	<b>34,670</b>	<b>445,306</b>
2 Direct Service Industry	39,202	36,393	36,103	37,726	34,911	37,948	19,672	18,158	37,600	36,448	37,133	18,943	20,400	34,670	445,306
<b>3 Load Following</b>	<b>1,307,087</b>	<b>1,465,928</b>	<b>1,702,241</b>	<b>1,657,896</b>	<b>1,481,829</b>	<b>1,452,412</b>	<b>689,695</b>	<b>636,642</b>	<b>1,311,837</b>	<b>1,353,255</b>	<b>1,470,320</b>	<b>726,978</b>	<b>782,900</b>	<b>1,285,050</b>	<b>17,324,071</b>
4 Cooperative	720,917	794,815	932,594	903,757	806,865	788,145	380,246	350,997	757,459	810,576	896,040	436,249	469,807	743,275	9,791,742
5 Municipality	239,865	268,433	312,449	306,240	269,245	266,190	126,207	116,498	229,214	226,848	253,992	126,784	136,537	228,811	3,107,313
6 Public Utility District	300,845	349,336	394,886	384,939	349,842	341,510	158,467	146,277	281,082	274,300	274,429	140,513	151,321	272,352	3,820,099
7 Federal Entities	45,460	53,344	62,312	62,960	55,878	56,567	24,775	22,869	44,082	41,531	45,859	23,432	25,235	40,612	604,916
<b>8 Slice Block</b>	<b>691,203</b>	<b>819,024</b>	<b>946,781</b>	<b>922,160</b>	<b>818,034</b>	<b>856,360</b>	<b>347,497</b>	<b>320,766</b>	<b>614,342</b>	<b>576,232</b>	<b>643,557</b>	<b>333,399</b>	<b>359,045</b>	<b>669,316</b>	<b>8,917,715</b>
9 Municipality	229,211	307,210	348,404	347,214	315,701	341,707	113,662	104,919	150,764	119,880	186,359	101,274	109,064	244,245	3,019,615
10 Public Utility District	461,991	511,814	598,377	574,946	502,333	514,653	233,835	215,847	463,578	456,352	457,198	232,125	249,980	425,070	5,898,100
<b>11 Slice Output from T1 System</b>	<b>797,177</b>	<b>951,450</b>	<b>938,438</b>	<b>744,847</b>	<b>751,515</b>	<b>818,902</b>	<b>374,811</b>	<b>343,091</b>	<b>1,125,132</b>	<b>869,582</b>	<b>862,756</b>	<b>495,209</b>	<b>432,173</b>	<b>721,994</b>	<b>10,227,075</b>
12 Municipality	267,655	319,453	315,084	250,085	252,324	274,949	125,844	115,194	377,767	291,965	289,674	166,268	145,104	242,412	3,433,778
13 Public Utility District	529,522	631,997	623,354	494,762	499,191	543,953	248,967	227,897	747,364	577,616	573,083	328,941	287,069	479,582	6,793,297
<b>14 Tier 1 Block</b>	<b>4,237</b>	<b>18,423</b>	<b>16,823</b>	<b>22,766</b>	<b>21,395</b>	<b>20,603</b>	<b>644</b>	<b>594</b>	<b>-</b>	<b>-</b>	<b>4,553</b>	<b>2,430</b>	<b>2,617</b>	<b>9,658</b>	<b>124,743</b>
15 Public Utility District	4,237	18,423	16,823	22,766	21,395	20,603	644	594	-	-	4,553	2,430	2,617	9,658	124,743
<b>16 Tier 2 - Aggregate</b>	<b>32,978</b>	<b>31,710</b>	<b>32,978</b>	<b>31,710</b>	<b>30,442</b>	<b>34,247</b>	<b>16,489</b>	<b>15,221</b>	<b>32,978</b>	<b>32,978</b>	<b>31,710</b>	<b>16,489</b>	<b>17,758</b>	<b>31,710</b>	<b>389,399</b>
17 Other	32,978	31,710	32,978	31,710	30,442	34,247	16,489	15,221	32,978	32,978	31,710	16,489	17,758	31,710	389,399
<b>18 USBR Obligation</b>	<b>20,251</b>	<b>13,672</b>	<b>10,868</b>	<b>11,447</b>	<b>9,432</b>	<b>18,509</b>	<b>49,012</b>	<b>45,242</b>	<b>133,380</b>	<b>137,168</b>	<b>133,259</b>	<b>53,277</b>	<b>57,375</b>	<b>82,225</b>	<b>775,116</b>
19 USBR	20,251	13,672	10,868	11,447	9,432	18,509	49,012	45,242	133,380	137,168	133,259	53,277	57,375	82,225	775,116
<b>Total Power Sales Contracts</b>															
20 Cooperative	720,917	794,815	932,594	903,757	806,865	788,145	380,246	350,997	757,459	810,576	896,040	436,249	469,807	743,275	9,791,742
21 Direct Service Industry	39,202	36,393	36,103	37,726	34,911	37,948	19,672	18,158	37,600	36,448	37,133	18,943	20,400	34,670	445,306
22 Federal Entities	45,460	53,344	62,312	62,960	55,878	56,567	24,775	22,869	44,082	41,531	45,859	23,432	25,235	40,612	604,916
23 Municipality	736,731	895,096	975,937	903,539	837,269	882,846	365,713	336,611	757,745	638,693	730,025	394,327	390,705	715,469	9,560,706
24 Other	32,978	31,710	32,978	31,710	30,442	34,247	16,489	15,221	32,978	32,978	31,710	16,489	17,758	31,710	389,399
25 Public Utility District	1,296,595	1,511,569	1,633,440	1,477,413	1,372,762	1,420,719	641,912	590,616	1,492,024	1,308,268	1,309,263	704,008	690,988	1,186,661	16,636,240
26 USBR	20,251	13,672	10,868	11,447	9,432	18,509	49,012	45,242	133,380	137,168	133,259	53,277	57,375	82,225	775,116
<b>27 Total Power Sales Contracts</b>	<b>2,892,136</b>	<b>3,336,600</b>	<b>3,684,233</b>	<b>3,428,551</b>	<b>3,147,558</b>	<b>3,238,980</b>	<b>1,497,820</b>	<b>1,379,714</b>	<b>3,255,269</b>	<b>3,005,663</b>	<b>3,183,289</b>	<b>1,646,725</b>	<b>1,672,266</b>	<b>2,834,622</b>	<b>38,203,424</b>

**Table 1.2.3**  
**Table A-6: BPA Sales to Preference and Legacy Customers**  
**Fiscal Year 2016 Water Year: 1937**  
**BP-2016 Final Rate Proposal Report Date: 6/9/2015**  
S124-RC-20150609-145700

LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Pacific Northwest</b>															
<b>1 DSI Obligation</b>	<b>28,823</b>	<b>29,388</b>	<b>31,745</b>	<b>30,238</b>	<b>27,168</b>	<b>29,675</b>	<b>13,989</b>	<b>13,989</b>	<b>29,995</b>	<b>28,879</b>	<b>30,323</b>	<b>13,809</b>	<b>14,536</b>	<b>30,766</b>	<b>353,322</b>
2 Direct Service Industry	28,823	29,388	31,745	30,238	27,168	29,675	13,989	13,989	29,995	28,879	30,323	13,809	14,536	30,766	353,322
<b>3 Load Following</b>	<b>803,263</b>	<b>1,016,719</b>	<b>1,171,210</b>	<b>1,181,383</b>	<b>973,483</b>	<b>920,010</b>	<b>422,644</b>	<b>422,644</b>	<b>896,697</b>	<b>832,245</b>	<b>988,697</b>	<b>439,001</b>	<b>462,106</b>	<b>847,381</b>	<b>11,377,481</b>
4 Cooperative	451,614	555,336	653,021	651,377	537,302	504,882	237,192	237,192	528,897	509,107	617,054	271,529	285,820	502,410	6,542,731
5 Municipality	138,316	178,056	206,598	207,813	171,022	161,913	71,864	71,864	142,952	129,325	152,457	70,352	74,054	138,645	1,915,232
6 Public Utility District	182,942	243,821	264,106	275,298	225,873	214,849	97,388	97,388	193,288	167,827	188,914	82,740	87,095	177,584	2,499,113
7 Federal Entities	30,390	39,506	47,486	46,896	39,286	38,367	16,199	16,199	31,560	25,985	30,271	14,380	15,137	28,742	420,405
<b>8 Slice Block</b>	<b>508,595</b>	<b>677,225</b>	<b>732,475</b>	<b>778,355</b>	<b>597,538</b>	<b>605,170</b>	<b>249,140</b>	<b>249,140</b>	<b>498,172</b>	<b>412,880</b>	<b>543,329</b>	<b>239,160</b>	<b>251,747</b>	<b>525,714</b>	<b>6,868,641</b>
9 Municipality	169,634	255,528	271,148	294,751	231,915	242,818	81,943	81,943	122,933	86,319	158,085	73,004	76,847	192,850	2,339,718
10 Public Utility District	338,961	421,697	461,326	483,603	365,623	362,353	167,197	167,197	375,240	326,561	385,244	166,156	174,901	332,864	4,528,923
<b>11 Slice Output from T1 System</b>	<b>443,021</b>	<b>564,506</b>	<b>573,918</b>	<b>463,433</b>	<b>441,348</b>	<b>489,901</b>	<b>212,048</b>	<b>193,286</b>	<b>635,097</b>	<b>547,544</b>	<b>445,663</b>	<b>222,745</b>	<b>237,117</b>	<b>439,099</b>	<b>5,908,726</b>
12 Municipality	148,746	189,535	192,695	155,599	148,184	164,486	71,196	64,897	213,236	183,840	149,633	74,788	79,613	147,429	1,983,877
13 Public Utility District	294,275	374,971	381,223	307,834	293,163	325,415	140,852	128,390	421,861	363,704	296,030	147,958	157,504	291,670	3,924,849
<b>14 Tier 1 Block</b>	<b>695</b>	<b>3,397</b>	<b>2,903</b>	<b>4,286</b>	<b>3,485</b>	<b>3,247</b>	<b>103</b>	<b>103</b>	<b>-</b>	<b>-</b>	<b>857</b>	<b>389</b>	<b>409</b>	<b>1,691</b>	<b>21,566</b>
15 Public Utility District	695	3,397	2,903	4,286	3,485	3,247	103	103	-	-	857	389	409	1,691	21,566
<b>16 Tier 2 - Aggregate</b>	<b>21,239</b>	<b>22,941</b>	<b>22,328</b>	<b>23,417</b>	<b>20,150</b>	<b>21,171</b>	<b>10,347</b>	<b>10,347</b>	<b>23,417</b>	<b>20,694</b>	<b>23,417</b>	<b>10,347</b>	<b>10,892</b>	<b>21,783</b>	<b>262,489</b>
17 Other	21,239	22,941	22,328	23,417	20,150	21,171	10,347	10,347	23,417	20,694	23,417	10,347	10,892	21,783	262,489
<b>18 USBR Obligation</b>	<b>56,871</b>	<b>15,659</b>	<b>17,122</b>	<b>5,600</b>	<b>7,559</b>	<b>34,197</b>	<b>36,803</b>	<b>36,803</b>	<b>130,711</b>	<b>110,832</b>	<b>166,957</b>	<b>54,515</b>	<b>57,385</b>	<b>103,106</b>	<b>834,119</b>
19 USBR	56,871	15,659	17,122	5,600	7,559	34,197	36,803	36,803	130,711	110,832	166,957	54,515	57,385	103,106	834,119
<b>Total Power Sales Contracts</b>															
20 Cooperative	451,614	555,336	653,021	651,377	537,302	504,882	237,192	237,192	528,897	509,107	617,054	271,529	285,820	502,410	6,542,731
21 Direct Service Industry	28,823	29,388	31,745	30,238	27,168	29,675	13,989	13,989	29,995	28,879	30,323	13,809	14,536	30,766	353,322
22 Federal Entities	30,390	39,506	47,486	46,896	39,286	38,367	16,199	16,199	31,560	25,985	30,271	14,380	15,137	28,742	420,405
23 Municipality	456,696	623,119	670,441	658,163	551,121	569,217	225,004	218,704	479,121	399,484	460,175	218,143	230,514	478,924	6,238,827
24 Other	21,239	22,941	22,328	23,417	20,150	21,171	10,347	10,347	23,417	20,694	23,417	10,347	10,892	21,783	262,489
25 Public Utility District	816,874	1,043,885	1,109,558	1,071,020	888,145	905,863	405,540	393,078	990,389	858,093	871,046	397,242	419,909	803,809	10,974,451
26 USBR	56,871	15,659	17,122	5,600	7,559	34,197	36,803	36,803	130,711	110,832	166,957	54,515	57,385	103,106	834,119
<b>27 Total Power Sales Contracts</b>	<b>1,862,506</b>	<b>2,329,833</b>	<b>2,551,701</b>	<b>2,486,712</b>	<b>2,070,730</b>	<b>2,103,371</b>	<b>945,074</b>	<b>926,312</b>	<b>2,214,090</b>	<b>1,953,074</b>	<b>2,199,243</b>	<b>979,966</b>	<b>1,034,192</b>	<b>1,969,540</b>	<b>25,626,344</b>



**Table 1.2.3**  
**Table A-6: BPA Sales to Preference and Legacy Customers**  
**Fiscal Year 2017 Water Year: 1937**  
**BP-2016 Final Rate Proposal Report Date: 6/9/2015**  
S124-RC-20150609-145700

LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Pacific Northwest</b>															
<b>1 DSI Obligation</b>	<b>28,823</b>	<b>29,388</b>	<b>31,745</b>	<b>30,238</b>	<b>26,231</b>	<b>29,675</b>	<b>13,289</b>	<b>14,688</b>	<b>29,995</b>	<b>28,879</b>	<b>30,323</b>	<b>13,809</b>	<b>14,536</b>	<b>30,766</b>	<b>352,385</b>
2 Direct Service Industry	28,823	29,388	31,745	30,238	26,231	29,675	13,289	14,688	29,995	28,879	30,323	13,809	14,536	30,766	352,385
<b>3 Load Following</b>	<b>823,844</b>	<b>1,002,290</b>	<b>1,175,400</b>	<b>1,185,769</b>	<b>965,911</b>	<b>917,677</b>	<b>410,436</b>	<b>453,640</b>	<b>881,212</b>	<b>831,906</b>	<b>989,780</b>	<b>440,491</b>	<b>463,675</b>	<b>850,569</b>	<b>11,392,602</b>
4 Cooperative	460,188	550,802	655,564	653,867	535,011	506,241	229,164	253,287	521,932	510,218	618,645	272,318	286,651	504,035	6,557,923
5 Municipality	142,413	175,618	208,105	208,189	168,183	162,121	69,955	77,318	140,144	129,507	152,678	70,485	74,195	138,836	1,917,747
6 Public Utility District	190,765	235,886	263,790	275,357	222,682	209,832	95,567	105,627	186,529	165,412	187,298	82,900	87,263	178,120	2,487,028
7 Federal Entities	30,478	39,984	47,941	48,356	40,035	39,484	15,750	17,408	32,607	26,769	31,160	14,788	15,566	29,579	429,904
<b>8 Slice Block</b>	<b>544,986</b>	<b>657,253</b>	<b>746,500</b>	<b>793,073</b>	<b>613,522</b>	<b>616,492</b>	<b>253,935</b>	<b>280,665</b>	<b>484,384</b>	<b>421,089</b>	<b>553,468</b>	<b>243,633</b>	<b>256,456</b>	<b>535,443</b>	<b>7,000,899</b>
9 Municipality	180,724	246,531	274,703	298,610	236,774	245,994	83,059	91,802	118,871	87,604	160,271	74,007	77,902	195,393	2,372,244
10 Public Utility District	364,262	410,722	471,797	494,464	376,748	370,498	170,876	188,863	365,513	333,485	393,197	169,626	178,554	340,050	4,628,655
<b>11 Slice Output from T1 System</b>	<b>436,024</b>	<b>565,880</b>	<b>574,517</b>	<b>485,485</b>	<b>426,547</b>	<b>482,458</b>	<b>220,461</b>	<b>208,625</b>	<b>620,975</b>	<b>473,249</b>	<b>435,915</b>	<b>222,128</b>	<b>237,225</b>	<b>439,978</b>	<b>5,829,468</b>
12 Municipality	146,397	189,996	192,896	163,003	143,215	161,987	74,021	70,047	208,495	158,895	146,360	74,580	79,649	147,724	1,957,266
13 Public Utility District	289,627	375,884	381,621	322,481	283,333	320,471	146,441	138,578	412,481	314,354	289,555	147,548	157,576	292,254	3,872,203
<b>14 Tier 1 Block</b>	<b>3,341</b>	<b>14,784</b>	<b>13,264</b>	<b>19,579</b>	<b>16,046</b>	<b>14,833</b>	<b>470</b>	<b>520</b>	<b>-</b>	<b>-</b>	<b>3,916</b>	<b>1,776</b>	<b>1,869</b>	<b>7,726</b>	<b>98,124</b>
15 Public Utility District	3,341	14,784	13,264	19,579	16,046	14,833	470	520	-	-	3,916	1,776	1,869	7,726	98,124
<b>16 Tier 2 - Aggregate</b>	<b>26,002</b>	<b>25,447</b>	<b>26,002</b>	<b>27,271</b>	<b>22,831</b>	<b>24,655</b>	<b>12,050</b>	<b>13,318</b>	<b>26,002</b>	<b>24,100</b>	<b>27,271</b>	<b>12,050</b>	<b>12,684</b>	<b>25,368</b>	<b>305,050</b>
17 Other	26,002	25,447	26,002	27,271	22,831	24,655	12,050	13,318	26,002	24,100	27,271	12,050	12,684	25,368	305,050
<b>18 USBR Obligation</b>	<b>62,517</b>	<b>13,651</b>	<b>17,122</b>	<b>5,600</b>	<b>7,531</b>	<b>34,197</b>	<b>42,854</b>	<b>47,365</b>	<b>112,480</b>	<b>110,832</b>	<b>166,957</b>	<b>54,515</b>	<b>57,385</b>	<b>103,106</b>	<b>836,112</b>
19 USBR	62,517	13,651	17,122	5,600	7,531	34,197	42,854	47,365	112,480	110,832	166,957	54,515	57,385	103,106	836,112
<b>Total Power Sales Contracts</b>															
20 Cooperative	460,188	550,802	655,564	653,867	535,011	506,241	229,164	253,287	521,932	510,218	618,645	272,318	286,651	504,035	6,557,923
21 Direct Service Industry	28,823	29,388	31,745	30,238	26,231	29,675	13,289	14,688	29,995	28,879	30,323	13,809	14,536	30,766	352,385
22 Federal Entities	30,478	39,984	47,941	48,356	40,035	39,484	15,750	17,408	32,607	26,769	31,160	14,788	15,566	29,579	429,904
23 Municipality	469,534	612,145	675,704	669,802	548,172	570,101	227,035	239,167	467,510	376,007	459,309	219,072	231,745	481,953	6,247,257
24 Other	26,002	25,447	26,002	27,271	22,831	24,655	12,050	13,318	26,002	24,100	27,271	12,050	12,684	25,368	305,050
25 Public Utility District	847,995	1,037,276	1,130,472	1,111,881	898,809	915,634	413,355	433,588	964,523	813,251	873,965	401,849	425,262	818,150	11,086,010
26 USBR	62,517	13,651	17,122	5,600	7,531	34,197	42,854	47,365	112,480	110,832	166,957	54,515	57,385	103,106	836,112
<b>27 Total Power Sales Contracts</b>	<b>1,925,537</b>	<b>2,308,694</b>	<b>2,584,551</b>	<b>2,547,015</b>	<b>2,078,620</b>	<b>2,119,986</b>	<b>953,496</b>	<b>1,018,821</b>	<b>2,155,049</b>	<b>1,890,055</b>	<b>2,207,630</b>	<b>988,402</b>	<b>1,043,829</b>	<b>1,992,956</b>	<b>25,814,641</b>

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Table 1.3.3 Table A-2: BPA – Power Services Exports - LLH MWh.....20

Table 1.3.1

**Table A-2: Bonneville Power Administration - Power Services Exports  
Fiscal Year 2016**

**BP-2016 Final Rate Proposal** Report Date: **6/9/2015**

S124-RC-20150609-145700

Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<b>Canada</b>															
<b>Contracts</b>	<b>472</b>	<b>472</b>	<b>472</b>	<b>472</b>	<b>472</b>	<b>472</b>	<b>472</b>	<b>472</b>	<b>472</b>	<b>472</b>	<b>494</b>	<b>579</b>	<b>584</b>	<b>468</b>	<b>483</b>
<sup>1</sup> BPA-P to BCHP Trty CEA	472	472	472	472	472	472	472	472	472	472	472	465	470	468	471
<sup>2</sup> BPA-P to BCHP NTSA Del	0	0	0	0	0	0	0	0	0	0	22.1	114	114	0	11.5
<b><sup>3</sup> Total Exports to CAN</b>	<b>472</b>	<b>472</b>	<b>472</b>	<b>472</b>	<b>472</b>	<b>472</b>	<b>472</b>	<b>472</b>	<b>472</b>	<b>472</b>	<b>494</b>	<b>579</b>	<b>584</b>	<b>468</b>	<b>483</b>
<b>East Continental Divide</b>															
<b>Contracts</b>															
<sup>4</sup> BPA-P to Other Entities	6.16	6.96	8.72	8.41	8.22	6.83	5.81	5.81	5.86	6.38	8.76	8.10	8.11	5.83	7.17
<b><sup>5</sup> Total Exports to ECD</b>	<b>6.16</b>	<b>6.96</b>	<b>8.72</b>	<b>8.41</b>	<b>8.22</b>	<b>6.83</b>	<b>5.81</b>	<b>5.81</b>	<b>5.86</b>	<b>6.38</b>	<b>8.76</b>	<b>8.10</b>	<b>8.11</b>	<b>5.83</b>	<b>7.17</b>
<b>Pacific Southwest</b>															
<b>Contracts</b>	<b>32.8</b>	<b>21.9</b>	<b>18.5</b>	<b>17.7</b>	<b>14.6</b>	<b>22.1</b>	<b>33.3</b>	<b>33.3</b>	<b>35.5</b>	<b>37.7</b>	<b>39.1</b>	<b>39.0</b>	<b>38.5</b>	<b>28.1</b>	<b>28.4</b>
<sup>6</sup> BPA-P to PASA CNX Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>7</sup> BPA-P to PASA SNX Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>8</sup> BPA-P to Other Entities	22.2	19.3	15.7	15.1	11.9	19.3	30.7	30.7	35.5	37.7	39.1	39.0	38.5	28.1	26.2
<sup>9</sup> BPA-P to RVSD CNX Del	10.6	2.62	2.78	2.54	2.72	2.79	2.62	2.62	0	0	0	0	0	0	2.23
<sup>10</sup> BPA-P to RVSD SNX Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>11</sup> Intertie Losses	1.0	0.7	0.6	0.5	0.4	0.7	1.0	1.0	1.1	1.1	1.2	1.2	1.2	0.8	0.9
<b><sup>12</sup> Total Exports to PSW</b>	<b>33.8</b>	<b>22.6</b>	<b>19.0</b>	<b>18.2</b>	<b>15.0</b>	<b>22.7</b>	<b>34.3</b>	<b>34.3</b>	<b>36.6</b>	<b>38.8</b>	<b>40.3</b>	<b>40.2</b>	<b>39.6</b>	<b>28.9</b>	<b>29.2</b>
<b>Total Exports</b>															
<sup>13</sup> Federal Entities	512	502	500	499	495	502	512	512	515	517	543	627	631	502	519
<b><sup>14</sup> Total Exports</b>	<b>512</b>	<b>502</b>	<b>500</b>	<b>499</b>	<b>495</b>	<b>502</b>	<b>512</b>	<b>512</b>	<b>515</b>	<b>517</b>	<b>543</b>	<b>627</b>	<b>631</b>	<b>502</b>	<b>519</b>

Table 1.3.1

**Table A-2: Bonneville Power Administration - Power Services Exports  
Fiscal Year 2017**

**BP-2016 Final Rate Proposal** Report Date: **6/9/2015**

S124-RC-20150609-145700

Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<b>Canada</b>															
<b>Contracts</b>	<b>468</b>	<b>468</b>	<b>468</b>	<b>468</b>	<b>468</b>	<b>468</b>	<b>486</b>	<b>449</b>	<b>468</b>	<b>468</b>	<b>492</b>	<b>582</b>	<b>586</b>	<b>469</b>	<b>480</b>
<sup>1</sup> BPA-P to BCHP Trty CEA	468	468	468	468	468	468	486	449	468	468	468	467	472	469	468
<sup>2</sup> BPA-P to BCHP NTSA Del	0	0	0	0	0	0	0	0	0	0	24.0	115	115	0	11.8
<b><sup>3</sup> Total Exports to CAN</b>	<b>468</b>	<b>468</b>	<b>468</b>	<b>468</b>	<b>468</b>	<b>468</b>	<b>486</b>	<b>449</b>	<b>468</b>	<b>468</b>	<b>492</b>	<b>582</b>	<b>586</b>	<b>469</b>	<b>480</b>
<b>East Continental Divide</b>															
<b>Contracts</b>															
<sup>4</sup> BPA-P to Other Entities	6.16	6.96	8.72	8.41	8.22	6.83	5.83	5.79	5.86	6.38	0	0	0	0	5.26
<b><sup>5</sup> Total Exports to ECD</b>	<b>6.16</b>	<b>6.96</b>	<b>8.72</b>	<b>8.41</b>	<b>8.22</b>	<b>6.83</b>	<b>5.83</b>	<b>5.79</b>	<b>5.86</b>	<b>6.38</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5.26</b>
<b>Pacific Southwest</b>															
<b>Contracts</b>	<b>23.3</b>	<b>18.2</b>	<b>14.2</b>	<b>14.1</b>	<b>12.2</b>	<b>19.2</b>	<b>30.8</b>	<b>34.0</b>	<b>33.5</b>	<b>37.8</b>	<b>39.2</b>	<b>39.0</b>	<b>38.5</b>	<b>28.1</b>	<b>26.0</b>
<sup>6</sup> BPA-P to PASA CNX Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>7</sup> BPA-P to PASA SNX Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>8</sup> BPA-P to Other Entities	23.3	18.2	14.2	14.1	12.2	19.2	30.8	34.0	33.5	37.8	39.2	39.0	38.5	28.1	26.0
<sup>9</sup> BPA-P to RVSD CNX Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>10</sup> BPA-P to RVSD SNX Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>11</sup> Intertie Losses	0.7	0.5	0.4	0.4	0.4	0.6	0.9	1.0	1.0	1.1	1.2	1.2	1.2	0.8	0.8
<b><sup>12</sup> Total Exports to PSW</b>	<b>24.0</b>	<b>18.8</b>	<b>14.6</b>	<b>14.6</b>	<b>12.5</b>	<b>19.8</b>	<b>31.7</b>	<b>35.1</b>	<b>34.6</b>	<b>38.9</b>	<b>40.4</b>	<b>40.2</b>	<b>39.6</b>	<b>28.9</b>	<b>26.8</b>
<b>Total Exports</b>															
<sup>13</sup> Federal Entities	498	493	491	491	488	494	524	490	508	513	532	622	626	498	512
<b><sup>14</sup> Total Exports</b>	<b>498</b>	<b>493</b>	<b>491</b>	<b>491</b>	<b>488</b>	<b>494</b>	<b>524</b>	<b>490</b>	<b>508</b>	<b>513</b>	<b>532</b>	<b>622</b>	<b>626</b>	<b>498</b>	<b>512</b>

Table 1.3.2

## Table A-2: Bonneville Power Administration - Power Services Exports

Fiscal Year 2016

BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Canada</b>															
<b>Contracts</b>	<b>351231</b>	<b>340373</b>	<b>351231</b>	<b>351231</b>	<b>328570</b>	<b>350759</b>	<b>169950</b>	<b>169950</b>	<b>351231</b>	<b>339901</b>	<b>360070</b>	<b>191189</b>	<b>205896</b>	<b>336632</b>	<b>4198213</b>
1 BPA-P to BCHP Trty CEA	351231	340373	351231	351231	328570	350759	169950	169950	351231	339901	351230	167485	180368	336632	4140141
2 BPA-P to BCHP NTSA Del	0	0	0	0	0	0	0	0	0	0	8840	23704	25528	0	58072
<b>3 Total Exports to CAN</b>	<b>351231</b>	<b>340373</b>	<b>351231</b>	<b>351231</b>	<b>328570</b>	<b>350759</b>	<b>169950</b>	<b>169950</b>	<b>351231</b>	<b>339901</b>	<b>360070</b>	<b>191189</b>	<b>205896</b>	<b>336632</b>	<b>4198213</b>
<b>East Continental Divide</b>															
<b>Contracts</b>															
4 BPA-P to Other Entities	2761	2867	3656	3505	3304	2938	1246	1246	2542	2894	3978	1827	1967	2503	37235
<b>5 Total Exports to ECD</b>	<b>2761</b>	<b>2867</b>	<b>3656</b>	<b>3505</b>	<b>3304</b>	<b>2938</b>	<b>1246</b>	<b>1246</b>	<b>2542</b>	<b>2894</b>	<b>3978</b>	<b>1827</b>	<b>1967</b>	<b>2503</b>	<b>37235</b>
<b>Pacific Southwest</b>															
<b>Contracts</b>	<b>7920</b>	<b>1800</b>	<b>1980</b>	<b>1800</b>	<b>1890</b>	<b>2070</b>	<b>945</b>	<b>945</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>19350</b>
6 BPA-P to PASA CNX Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 BPA-P to PASA SNX Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 BPA-P to Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 BPA-P to RVSD CNX Del	7920	1800	1980	1800	1890	2070	945	945	0	0	0	0	0	0	19350
10 BPA-P to RVSD SNX Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 Intertie Losses	238	54	59	54	57	62	28	28	0	0	0	0	0	0	581
<b>12 Total Exports to PSW</b>	<b>8157</b>	<b>1854</b>	<b>2040</b>	<b>1854</b>	<b>1947</b>	<b>2132</b>	<b>973</b>	<b>973</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>19931</b>
<b>Total Exports</b>															
13 Federal Entities	362149	345094	356927	356590	333822	355829	172169	172169	353773	342795	364048	193016	207863	339135	4255378
<b>14 Total Exports</b>	<b>362149</b>	<b>345094</b>	<b>356927</b>	<b>356590</b>	<b>333822</b>	<b>355829</b>	<b>172169</b>	<b>172169</b>	<b>353773</b>	<b>342795</b>	<b>364048</b>	<b>193016</b>	<b>207863</b>	<b>339135</b>	<b>4255378</b>

Table 1.3.2

## Table A-2: Bonneville Power Administration - Power Services Exports

Fiscal Year 2017

BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Canada</b>															
<b>Contracts</b>	<b>347853</b>	<b>337099</b>	<b>347853</b>	<b>347853</b>	<b>314190</b>	<b>347385</b>	<b>175048</b>	<b>161583</b>	<b>347853</b>	<b>336632</b>	<b>357453</b>	<b>192031</b>	<b>206803</b>	<b>337953</b>	<b>4157588</b>
1 BPA-P to BCHP Trty CEA	347853	337099	347853	347853	314190	347385	175048	161583	347853	336632	347853	168142	181076	337953	4098372
2 BPA-P to BCHP NTSA Del	0	0	0	0	0	0	0	0	0	0	9600	23889	25727	0	59216
<b>3 Total Exports to CAN</b>	<b>347853</b>	<b>337099</b>	<b>347853</b>	<b>347853</b>	<b>314190</b>	<b>347385</b>	<b>175048</b>	<b>161583</b>	<b>347853</b>	<b>336632</b>	<b>357453</b>	<b>192031</b>	<b>206803</b>	<b>337953</b>	<b>4157588</b>
<b>East Continental Divide</b>															
<b>Contracts</b>															
4 BPA-P to Other Entities	2761	2867	3656	3505	3190	2938	1295	1196	2543	2894	0	0	0	0	26846
<b>5 Total Exports to ECD</b>	<b>2761</b>	<b>2867</b>	<b>3656</b>	<b>3505</b>	<b>3190</b>	<b>2938</b>	<b>1295</b>	<b>1196</b>	<b>2543</b>	<b>2894</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>26846</b>
<b>Pacific Southwest</b>															
<b>Contracts</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
6 BPA-P to PASA CNX Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 BPA-P to PASA SNX Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 BPA-P to Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 BPA-P to RVSD CNX Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 BPA-P to RVSD SNX Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 Intertie Losses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>12 Total Exports to PSW</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Total Exports</b>															
13 Federal Entities	350614	339966	351509	351358	317380	350323	176344	162779	350395	339526	357453	192031	206803	337953	4184434
<b>14 Total Exports</b>	<b>350614</b>	<b>339966</b>	<b>351509</b>	<b>351358</b>	<b>317380</b>	<b>350323</b>	<b>176344</b>	<b>162779</b>	<b>350395</b>	<b>339526</b>	<b>357453</b>	<b>192031</b>	<b>206803</b>	<b>337953</b>	<b>4184434</b>

Table 1.3.3

## Table A-2: Bonneville Power Administration - Power Services Exports

Fiscal Year 2016

BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Canada</b>															
<b>Contracts</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7602</b>	<b>17280</b>	<b>18189</b>	<b>0</b>	<b>43071</b>
<sup>1</sup> BPA-P to BCHP Trty CEA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>2</sup> BPA-P to BCHP NTSA Del	0	0	0	0	0	0	0	0	0	0	7602	17280	18189	0	43071
<b><sup>3</sup> Total Exports to CAN</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7602</b>	<b>17280</b>	<b>18189</b>	<b>0</b>	<b>43071</b>
<b>East Continental Divide</b>															
<b>Contracts</b>															
<sup>4</sup> BPA-P to Other Entities	1823	2152	2829	2754	2418	2133	845	845	1818	1698	2541	1088	1146	1691	25780
<b><sup>5</sup> Total Exports to ECD</b>	<b>1823</b>	<b>2152</b>	<b>2829</b>	<b>2754</b>	<b>2418</b>	<b>2133</b>	<b>845</b>	<b>845</b>	<b>1818</b>	<b>1698</b>	<b>2541</b>	<b>1088</b>	<b>1146</b>	<b>1691</b>	<b>25780</b>
<b>Pacific Southwest</b>															
<b>Contracts</b>	<b>16488</b>	<b>13994</b>	<b>11770</b>	<b>11354</b>	<b>8256</b>	<b>14320</b>	<b>11044</b>	<b>11044</b>	<b>26424</b>	<b>27128</b>	<b>29120</b>	<b>14043</b>	<b>14782</b>	<b>20216</b>	<b>229981</b>
<sup>6</sup> BPA-P to PASA CNX Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>7</sup> BPA-P to PASA SNX Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>8</sup> BPA-P to Other Entities	16488	13904	11680	11264	8256	14320	11044	11044	26424	27128	29120	14043	14782	20216	229711
<sup>9</sup> BPA-P to RVSD CNX Del	0	90.0	89.9	90.1	0	0	0	0	0	0	0	0	0	0	270
<sup>10</sup> BPA-P to RVSD SNX Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>11</sup> Intertie Losses	495	420	353	341	248	430	331	331	793	814	874	421	443	606	6899
<b><sup>12</sup> Total Exports to PSW</b>	<b>16983</b>	<b>14414</b>	<b>12123</b>	<b>11695</b>	<b>8504</b>	<b>14750</b>	<b>11375</b>	<b>11375</b>	<b>27216</b>	<b>27942</b>	<b>29994</b>	<b>14464</b>	<b>15225</b>	<b>20822</b>	<b>236881</b>
<b>Total Exports</b>															
<sup>13</sup> Federal Entities	18806	16565	14952	14448	10922	16882	12221	12221	29034	29640	40137	32832	34560	22513	305732
<b><sup>14</sup> Total Exports</b>	<b>18806</b>	<b>16565</b>	<b>14952</b>	<b>14448</b>	<b>10922</b>	<b>16882</b>	<b>12221</b>	<b>12221</b>	<b>29034</b>	<b>29640</b>	<b>40137</b>	<b>32832</b>	<b>34560</b>	<b>22513</b>	<b>305732</b>



Table 1.3.3

## Table A-2: Bonneville Power Administration - Power Services Exports

Fiscal Year 2017

BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Canada</b>															
<b>Contracts</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8256</b>	<b>17418</b>	<b>18334</b>	<b>0</b>	<b>44008</b>
<sup>1</sup> BPA-P to BCHP Trty CEA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>2</sup> BPA-P to BCHP NTSA Del	0	0	0	0	0	0	0	0	0	0	8256	17418	18334	0	44008
<b><sup>3</sup> Total Exports to CAN</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8256</b>	<b>17418</b>	<b>18334</b>	<b>0</b>	<b>44008</b>
<b>East Continental Divide</b>															
<b>Contracts</b>															
<sup>4</sup> BPA-P to Other Entities	1823	2152	2829	2754	2335	2133	803	888	1818	1698	0	0	0	0	19232
<b><sup>5</sup> Total Exports to ECD</b>	<b>1823</b>	<b>2152</b>	<b>2829</b>	<b>2754</b>	<b>2335</b>	<b>2133</b>	<b>803</b>	<b>888</b>	<b>1818</b>	<b>1698</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>19232</b>
<b>Pacific Southwest</b>															
<b>Contracts</b>	<b>17352</b>	<b>13152</b>	<b>10568</b>	<b>10512</b>	<b>8176</b>	<b>14288</b>	<b>11088</b>	<b>12256</b>	<b>24960</b>	<b>27208</b>	<b>29184</b>	<b>14035</b>	<b>14773</b>	<b>20208</b>	<b>227760</b>
<sup>6</sup> BPA-P to PASA CNX Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>7</sup> BPA-P to PASA SNX Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>8</sup> BPA-P to Other Entities	17352	13152	10568	10512	8176	14288	11088	12256	24960	27208	29184	14035	14773	20208	227760
<sup>9</sup> BPA-P to RVSD CNX Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>10</sup> BPA-P to RVSD SNX Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>11</sup> Intertie Losses	521	395	317	315	245	429	333	368	749	816	876	421	443	606	6833
<b><sup>12</sup> Total Exports to PSW</b>	<b>17872</b>	<b>13546</b>	<b>10885</b>	<b>10827</b>	<b>8421</b>	<b>14717</b>	<b>11421</b>	<b>12623</b>	<b>25709</b>	<b>28024</b>	<b>30059</b>	<b>14456</b>	<b>15216</b>	<b>20814</b>	<b>234592</b>
<b>Total Exports</b>															
<sup>13</sup> Federal Entities	19695	15698	13714	13581	10756	16849	12224	13511	27527	29722	38315	31873	33551	20814	297832
<b><sup>14</sup> Total Exports</b>	<b>19695</b>	<b>15698</b>	<b>13714</b>	<b>13581</b>	<b>10756</b>	<b>16849</b>	<b>12224</b>	<b>13511</b>	<b>27527</b>	<b>29722</b>	<b>38315</b>	<b>31873</b>	<b>33551</b>	<b>20814</b>	<b>297832</b>

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**2. RESOURCE FORECASTS FOR FY 2016 AND FY 2017.....23**

2.1 Regulated Hydro

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Table 2.1.1

Table A-7: Bonneville Power Administration - Power Services: Regulated Hydro

Fiscal Year 2016 Water Year: 1937

BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<b>Regulated Hydro</b>															
1 Idle Capacity Adjustment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 Albeni Falls Hydroelectric	30.5	23.4	16.1	12.8	14.4	14.5	6.34	23.2	38.7	43.7	34.8	25.9	20.6	24.7	24.3
3 Bonneville	427	542	551	459	498	488	366	135	408	340	172	192	137	418	393
4 Chief Joseph	930	1303	1240	976	1037	917	908	912	1447	1161	1171	1457	1234	878	1110
5 Dworshak	57.9	57.7	57.5	57.3	57.0	57.0	57.4	58.3	64.0	212	440	439	344	152	139
6 Grand Coulee	1671	2381	2240	1728	1838	1578	1486	1444	2316	1985	2117	2635	2189	1550	1941
7 Hungry Horse	81.7	86.4	86.9	88.0	87.1	84.8	64.4	26.3	27.4	78.8	114	114	113	111	83.8
8 Ice Harbor	108	104	121	116	125	176	68.2	66.8	166	75.3	67.2	67.6	67.8	98.8	108
9 John Day	689	926	917	736	802	813	793	656	961	864	685	757	643	668	790
10 Libby	93.9	251	192	87.8	87.0	86.2	85.7	85.7	424	465	161	164	164	140	187
11 Little Goose	108	105	120	118	111	169	156	186	338	260	147	110	127	110	157
12 Lower Granite	102	103	121	119	112	171	83.3	134	356	245	91.4	87.2	135	115	147
13 Lower Monumental	111	106	124	119	129	182	85.4	124	346	245	99.2	84.5	101	104	147
14 McNary	468	597	591	479	523	507	459	360	586	487	340	360	304	457	481
15 The Dalles	547	723	744	600	656	649	597	452	696	625	481	505	428	536	604
<b>Total Regulated Hydro</b>															
16 Federal Entities	5426	7308	7121	5696	6076	5892	5216	4663	8174	7087	6122	6998	6009	5363	6311
<b>17 Total Regulated Hydro</b>	<b>5426</b>	<b>7308</b>	<b>7121</b>	<b>5696</b>	<b>6076</b>	<b>5892</b>	<b>5216</b>	<b>4663</b>	<b>8174</b>	<b>7087</b>	<b>6122</b>	<b>6998</b>	<b>6009</b>	<b>5363</b>	<b>6311</b>

Table 2.1.1

Table A-7: Bonneville Power Administration - Power Services: Regulated Hydro

Fiscal Year 2017 Water Year: 1937

BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<b>Regulated Hydro</b>															
1 Idle Capacity Adjustment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 Albeni Falls Hydroelectric	30.5	23.4	16.1	12.8	14.4	14.5	6.34	23.2	38.7	43.7	34.8	25.9	20.6	24.7	24.4
3 Bonneville	427	542	551	459	498	488	366	135	408	340	172	192	137	418	392
4 Chief Joseph	930	1303	1240	976	1037	917	908	912	1447	1161	1171	1457	1234	878	1111
5 Dworshak	57.9	57.7	57.5	57.3	57.0	57.0	57.4	58.3	64.0	212	436	434	344	181	141
6 Grand Coulee	1671	2381	2240	1728	1838	1578	1486	1444	2316	1985	2117	2635	2189	1551	1942
7 Hungry Horse	81.7	86.4	86.9	88.0	87.1	84.8	64.4	26.3	27.4	78.8	114	113	113	111	83.8
8 Ice Harbor	108	104	121	116	125	176	68.2	66.8	166	75.3	67.2	67.6	67.8	98.8	108
9 John Day	689	926	917	736	802	813	793	656	961	864	685	757	643	668	790
10 Libby	93.9	251	192	87.8	87.0	86.2	85.7	85.7	424	465	161	164	164	140	187
11 Little Goose	108	105	120	118	111	169	212	268	485	275	147	110	127	110	176
12 Lower Granite	102	103	121	119	112	171	205	273	495	271	91.4	87.2	135	115	171
13 Lower Monumental	111	106	124	119	129	182	232	292	514	291	99.2	84.5	101	104	178
14 McNary	468	597	591	479	523	507	459	360	586	487	340	360	304	457	481
15 The Dalles	547	723	744	600	656	649	597	452	696	625	481	505	428	536	603
<b>Total Regulated Hydro</b>															
16 Federal Entities	5426	7308	7121	5696	6076	5892	5541	5052	8627	7174	6117	6993	6009	5393	6388
<b>17 Total Regulated Hydro</b>	<b>5426</b>	<b>7308</b>	<b>7121</b>	<b>5696</b>	<b>6076</b>	<b>5892</b>	<b>5541</b>	<b>5052</b>	<b>8627</b>	<b>7174</b>	<b>6117</b>	<b>6993</b>	<b>6009</b>	<b>5393</b>	<b>6388</b>

Table 2.1.2

Table A-7: Bonneville Power Administration - Power Services: Regulated Hydro

Fiscal Year 2016 Water Year: 1937

BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Regulated Hydro</b>															
1 Idle Capacity Adjustment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 Albeni Falls Hydroelectric	12969	9225	6568	5455	5735	6174	1304	4764	16437	17989	14182	5328	4527	9755	120412
3 Bonneville	180271	210854	221394	195773	197277	206806	85532	29211	177061	135503	74358	41102	29568	163731	1948440
4 Chief Joseph	498877	656495	641102	494530	503100	460845	219601	231601	788343	608679	678486	411214	341110	449402	6983385
5 Dworshak	24609	22765	23416	24344	22638	24204	11812	11997	27181	87021	179279	90241	75409	59793	684708
6 Grand Coulee	896715	1199568	1157966	876047	892161	792776	359234	366666	1261732	1040701	1226511	743554	604907	793284	12211822
7 Hungry Horse	34732	34105	35386	37420	34571	35989	13251	5414	11655	32438	46538	23350	24726	43855	413428
8 Ice Harbor	51216	46258	67326	65129	65377	89335	15703	14514	72855	32272	29050	14413	15896	43402	622747
9 John Day	331386	437243	413814	360632	368161	390727	187668	149180	471633	408930	319720	178606	155816	301566	4475082
10 Libby	39924	99120	78029	37348	34548	36611	17630	17620	180180	191417	65735	33769	36022	55048	923001
11 Little Goose	51183	46807	66449	66437	58139	85498	35916	40466	148623	111341	63697	23402	29827	48296	876080
12 Lower Granite	48333	45686	67134	66711	58717	86406	19183	29037	156732	105100	39495	18578	31739	50577	823427
13 Lower Monumental	52668	47255	68645	66814	67470	92018	19668	26897	152185	105014	42868	18012	23773	45704	828991
14 McNary	225121	282116	266606	234700	239802	243753	108648	81792	287727	230550	158589	85075	73708	206456	2724643
15 The Dalles	263258	341457	335792	293834	301036	311915	141152	102685	341395	295786	224623	119216	103742	241869	3417760
<b>Total Regulated Hydro</b>															
16 Federal Entities	2711264	3478954	3449627	2825172	2848732	2863057	1236301	1111843	4093740	3402740	3163131	1805860	1550769	2512737	37053927
<b>17 Total Regulated Hydro</b>	<b>2711264</b>	<b>3478954</b>	<b>3449627</b>	<b>2825172</b>	<b>2848732</b>	<b>2863057</b>	<b>1236301</b>	<b>1111843</b>	<b>4093740</b>	<b>3402740</b>	<b>3163131</b>	<b>1805860</b>	<b>1550769</b>	<b>2512737</b>	<b>37053927</b>

Table 2.1.2

## Table A-7: Bonneville Power Administration - Power Services: Regulated Hydro

Fiscal Year 2017 Water Year: 1937

BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Regulated Hydro</b>															
1 Idle Capacity Adjustment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 Albeni Falls Hydroelectric	12969	9225	6568	5227	5546	6174	1304	4764	16450	17989	14181	5328	4527	9756	120009
3 Bonneville	181220	210522	221567	187138	191230	206966	84405	28962	179348	136084	74727	41279	29506	164044	1936999
4 Chief Joseph	506034	655172	635143	471450	482435	460190	220473	231429	766372	601937	676517	411286	341283	450361	6910081
5 Dworshak	24609	22765	23416	23329	21893	24204	11812	11997	27203	87021	177449	89320	75409	71507	691933
6 Grand Coulee	909579	1197151	1147203	835161	855515	791649	360661	366394	1226567	1029174	1222951	743684	605216	794976	12085880
7 Hungry Horse	34732	34105	35386	35861	33433	35989	13251	5414	11664	32438	46525	23343	24719	43881	410739
8 Ice Harbor	51168	46258	67300	63457	63098	89135	15529	14244	75389	32609	29050	14413	15854	43690	621195
9 John Day	333109	420818	409915	349796	349511	393558	187706	149736	464513	407595	320655	178605	154907	301944	4422367
10 Libby	39924	99120	78029	35791	33411	36611	17630	17620	180320	191417	65735	33769	36022	55048	920448
11 Little Goose	51135	46807	66424	64731	56112	85307	48301	57097	220586	119035	63697	23402	29748	48617	980997
12 Lower Granite	48287	45686	67108	64998	56670	86212	46722	58330	225127	117109	39495	18578	31655	50913	956891
13 Lower Monumental	52618	47255	68618	65098	65118	91812	52923	62372	233896	125955	42868	18012	23710	46008	996264
14 McNary	226292	271518	264094	227648	227654	245519	108670	82097	283383	229798	159053	85074	73278	206715	2690793
15 The Dalles	264627	328630	332628	285005	285786	314175	141180	103068	336241	294820	225280	119215	103137	242172	3375965
<b>Total Regulated Hydro</b>															
16 Federal Entities	2736303	3435032	3423399	2714690	2727410	2867502	1310567	1193522	4247059	3422981	3158183	1805308	1548971	2529634	37120561
<b>17 Total Regulated Hydro</b>	<b>2736303</b>	<b>3435032</b>	<b>3423399</b>	<b>2714690</b>	<b>2727410</b>	<b>2867502</b>	<b>1310567</b>	<b>1193522</b>	<b>4247059</b>	<b>3422981</b>	<b>3158183</b>	<b>1805308</b>	<b>1548971</b>	<b>2529634</b>	<b>37120561</b>

Table 2.1.3

Table A-7: Bonneville Power Administration - Power Services: Regulated Hydro

Fiscal Year 2016 Water Year: 1937

BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Regulated Hydro</b>															
1 Idle Capacity Adjustment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 Albeni Falls Hydroelectric	9727	7621	5426	4091	4318	4630	978	3573	12350	13492	11715	3996	3395	8058	93371
3 Bonneville	137420	179832	188518	145958	149054	155661	46247	19498	126539	109603	53981	28169	23105	136965	1500548
4 Chief Joseph	192970	283022	281449	231278	218446	220854	107380	96678	288157	227323	192860	113333	132817	183015	2769582
5 Dworshak	18457	18806	19344	18258	17042	18153	8859	8998	20423	65265	148100	67681	56557	49394	535335
6 Grand Coulee	346857	517147	508356	409702	387375	379928	175657	153059	461192	388670	348637	204928	235532	323058	4840097
7 Hungry Horse	26049	28174	29232	28065	26026	26992	9939	4060	8757	24329	38444	17512	18544	36228	322349
8 Ice Harbor	29114	28719	22841	21193	21506	41724	8833	9517	50418	21976	20960	9936	10150	27724	324611
9 John Day	181347	230145	268749	187066	190243	213193	97908	87138	243376	212960	189695	93848	91180	179401	2466250
10 Libby	29943	81881	64458	28011	26008	27458	13222	13215	135381	143563	54303	25327	27017	45475	715262
11 Little Goose	29095	29060	22544	21619	19125	39932	20203	26533	102852	75821	45957	16132	19045	30850	498767
12 Lower Granite	27475	28364	22776	21708	19315	40356	10790	19039	108463	71571	28496	12807	20266	32307	463733
13 Lower Monumental	29939	29338	23289	21741	22194	42977	11063	17636	105317	71512	30929	12417	15179	29195	462727
14 McNary	123195	148493	173146	121743	123915	133000	56683	47776	148476	120064	94094	44702	43132	122820	1501238
15 The Dalles	144065	179727	218079	152417	155557	170191	73640	59980	176170	154037	133273	62641	60708	143888	1884372
<b>Total Regulated Hydro</b>															
16 Federal Entities	1325652	1790328	1848206	1412849	1380122	1515049	641402	566699	1987872	1700187	1391443	713429	756627	1348379	18378244
<b>17 Total Regulated Hydro</b>	<b>1325652</b>	<b>1790328</b>	<b>1848206</b>	<b>1412849</b>	<b>1380122</b>	<b>1515049</b>	<b>641402</b>	<b>566699</b>	<b>1987872</b>	<b>1700187</b>	<b>1391443</b>	<b>713429</b>	<b>756627</b>	<b>1348379</b>	<b>18378244</b>



Table 2.1.3

Table A-7: Bonneville Power Administration - Power Services: Regulated Hydro

Fiscal Year 2017 Water Year: 1937

BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Regulated Hydro</b>															
1 Idle Capacity Adjustment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 Albeni Falls Hydroelectric	9727	7621	5426	4318	4160	4630	978	3573	12338	13492	11715	3996	3395	8060	93427
3 Bonneville	136470	180163	188344	154592	143158	155501	47375	19747	124252	109022	53609	27990	23167	136658	1500049
4 Chief Joseph	185813	284345	287408	254358	214230	221509	106508	96850	310129	234065	194820	113257	132638	182076	2818005
5 Dworshak	18457	18806	19344	19272	16420	18153	8859	8998	20402	65265	146589	66990	56557	59071	543181
6 Grand Coulee	333992	519564	519119	450588	379899	381055	174231	153331	496357	400197	352180	204790	235215	321401	4921918
7 Hungry Horse	26049	28174	29232	29624	25075	26992	9939	4060	8748	24329	38433	17507	18539	36250	322949
8 Ice Harbor	29163	28719	22867	22865	20789	41924	9007	9787	47884	21639	20960	9936	10192	27435	323167
9 John Day	179624	246570	272648	197902	189638	210362	97870	86582	250497	214295	188757	93847	92087	179034	2499713
10 Libby	29943	81881	64458	29567	25058	27458	13222	13215	135240	143563	54303	25327	27017	45475	715728
11 Little Goose	29144	29060	22570	23324	18487	40123	28015	39231	140107	78988	45957	16132	19124	30529	560791
12 Lower Granite	27521	28364	22802	23421	18671	40549	27100	40078	142992	77710	28496	12807	20350	31971	542830
13 Lower Monumental	29989	29338	23315	23457	21455	43183	30696	42855	148561	83580	30929	12417	15242	28891	563909
14 McNary	122024	159091	175658	128795	123521	131233	56660	47471	152820	120817	93628	44702	43561	122569	1522551
15 The Dalles	142696	192554	221243	161246	155062	167930	73611	59597	181324	155003	132613	62641	61312	143593	1910426
<b>Total Regulated Hydro</b>															
16 Federal Entities	1300612	1834250	1874434	1523330	1355622	1510603	684070	625374	2171650	1741964	1392987	712339	758395	1353014	18838644
17 Total Regulated Hydro	1300612	1834250	1874434	1523330	1355622	1510603	684070	625374	2171650	1741964	1392987	712339	758395	1353014	18838644

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Table 2.2.1

## Table A-8: Bonneville Power Administration - Power Services: Independent Hydro

Fiscal Year 2016 Water Year: 1937

BP-2016 Final Rate Proposal Report Date: 6/9/2015

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Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<b>Independent Hydro</b>															
1 Anderson Ranch	4.19	4.36	4.27	4.31	4.76	4.31	9.41	9.41	11.8	37.0	33.2	20.1	20.1	8.78	12.2
2 Big Cliff	8.00	13.0	6.00	4.00	6.00	7.00	9.00	11.0	20.0	20.0	7.00	6.00	6.00	9.00	9.65
3 Black Canyon	5.45	3.61	2.98	3.27	3.53	4.19	8.53	8.53	8.53	8.53	8.53	8.53	8.53	8.31	6.17
4 Boise River Diversion	0.73	0	0	0	0	0	0.87	0.87	2.50	2.50	2.50	2.46	2.46	2.50	1.17
5 Chandler	5.70	7.34	3.38	5.51	7.47	9.80	6.06	6.06	5.97	5.80	6.09	4.60	4.60	5.59	6.10
6 Cougar	27.0	23.0	9.00	6.00	8.00	10.00	29.0	29.0	29.0	29.0	17.0	25.0	24.0	16.0	19.0
7 Cowlitz Falls	6.20	3.10	23.1	10.00	13.7	33.3	46.1	50.3	63.6	66.3	28.9	13.3	10.5	9.50	26.5
8 Detroit	44.9	47.5	20.9	21.7	17.7	25.3	34.6	37.2	102	37.9	13.0	12.0	11.8	26.0	33.7
9 Dexter	12.0	16.0	4.00	3.00	5.00	5.00	12.0	17.0	17.0	17.0	6.00	5.00	5.00	8.00	9.35
10 Foster	10.00	7.00	9.00	4.00	9.00	21.0	19.0	18.0	21.0	23.0	6.00	6.00	6.00	12.0	12.2
11 Green Peter	18.0	16.0	18.0	8.00	0	33.0	88.0	45.0	58.0	49.0	11.0	15.0	15.0	29.0	26.8
12 Green Springs	5.02	5.95	6.34	6.94	6.74	7.97	8.26	8.26	8.78	8.98	8.01	7.94	7.94	6.90	7.32
13 Hills Creek	23.0	27.0	5.00	4.00	6.00	7.00	20.0	31.0	35.0	35.0	14.0	9.00	9.00	25.0	17.9
14 Idaho Falls - City Plant	3.91	4.88	6.39	6.59	6.13	4.28	2.92	2.92	1.99	2.92	3.70	3.21	3.21	3.46	4.20
15 Idaho Falls - Lower Plant #1	3.91	4.88	6.39	6.59	6.13	4.28	2.92	2.92	1.99	2.92	3.70	3.21	3.21	3.46	4.20
16 Idaho Falls - Lower Plant #2	1.47	1.83	2.39	2.47	2.30	1.61	1.10	1.10	0.74	1.09	1.39	1.21	1.21	1.30	1.57
17 Idaho Falls - Upper Plant	3.91	4.88	6.39	6.59	6.13	4.28	2.92	2.92	1.99	2.92	3.70	3.21	3.21	3.46	4.20
18 Lookout Point	45.0	47.0	9.00	8.00	12.0	15.0	45.0	74.0	85.0	73.0	24.0	19.0	19.0	33.0	35.7
19 Lost Creek	37.0	19.0	19.0	18.0	13.0	14.0	15.0	16.0	56.0	56.0	46.0	44.0	39.0	24.0	30.0
20 Minidoka	6.48	2.39	2.32	2.32	2.57	2.32	10.3	10.3	24.6	22.7	21.7	19.0	19.0	11.5	10.7
21 Palisades	45.5	11.3	11.2	11.4	12.8	28.2	51.7	51.7	152	151	127	144	144	56.9	67.3
22 Roza	4.08	1.15	4.09	2.59	3.12	9.41	11.4	11.4	10.8	10.9	10.6	10.5	10.5	3.39	6.86
<b>Total Independent Hydro</b>															
23 Federal Entities	321	271	179	145	152	251	434	445	718	664	403	383	374	307	353
<b>24 Total Independent Hydro</b>	<b>321</b>	<b>271</b>	<b>179</b>	<b>145</b>	<b>152</b>	<b>251</b>	<b>434</b>	<b>445</b>	<b>718</b>	<b>664</b>	<b>403</b>	<b>383</b>	<b>374</b>	<b>307</b>	<b>353</b>

Table 2.2.1

## Table A-8: Bonneville Power Administration - Power Services: Independent Hydro

Fiscal Year 2017 Water Year: 1937

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Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<b>Independent Hydro</b>															
1 Anderson Ranch	4.19	4.36	4.27	4.31	4.76	4.31	9.41	9.41	11.8	37.0	33.2	20.1	20.1	8.78	12.2
2 Big Cliff	8.00	13.0	6.00	4.00	6.00	7.00	9.00	11.0	20.0	20.0	7.00	6.00	6.00	9.00	9.66
3 Black Canyon	5.45	3.61	2.98	3.27	3.53	4.19	8.53	8.53	8.53	8.53	8.53	8.53	8.53	8.31	6.18
4 Boise River Diversion	0.73	0	0	0	0	0	0.87	0.87	2.50	2.50	2.50	2.46	2.46	2.50	1.18
5 Chandler	5.70	7.34	3.38	5.51	7.47	9.80	6.06	6.06	5.97	5.80	6.09	4.60	4.60	5.59	6.10
6 Cougar	27.0	23.0	9.00	6.00	8.00	10.00	29.0	29.0	29.0	29.0	17.0	25.0	24.0	16.0	19.0
7 Cowlitz Falls	6.20	3.10	23.1	10.00	13.7	33.3	46.1	50.3	63.6	66.3	28.9	13.3	10.5	9.50	26.5
8 Detroit	44.9	47.5	20.9	21.7	17.7	25.3	34.6	37.2	102	37.9	13.0	12.0	11.8	26.0	33.8
9 Dexter	12.0	16.0	4.00	3.00	5.00	5.00	12.0	17.0	17.0	17.0	6.00	5.00	5.00	8.00	9.36
10 Foster	10.00	7.00	9.00	4.00	9.00	21.0	19.0	18.0	21.0	23.0	6.00	6.00	6.00	12.0	12.2
11 Green Peter	18.0	16.0	18.0	8.00	0	33.0	88.0	45.0	58.0	49.0	11.0	15.0	15.0	29.0	26.9
12 Green Springs	5.02	5.95	6.34	6.94	6.74	7.97	8.26	8.26	8.78	8.98	8.01	7.94	7.94	6.90	7.32
13 Hills Creek	23.0	27.0	5.00	4.00	6.00	7.00	20.0	31.0	35.0	35.0	14.0	9.00	9.00	25.0	17.9
14 Idaho Falls - City Plant	3.91	4.88	6.39	6.59	6.13	4.28	2.92	2.92	1.99	2.92	3.70	3.21	3.21	3.46	4.19
15 Idaho Falls - Lower Plant #1	3.91	4.88	6.39	6.59	6.13	4.28	2.92	2.92	1.99	2.92	3.70	3.21	3.21	3.46	4.19
16 Idaho Falls - Lower Plant #2	1.47	1.83	2.39	2.47	2.30	1.61	1.10	1.10	0.74	1.09	1.39	1.21	1.21	1.30	1.57
17 Idaho Falls - Upper Plant	3.91	4.88	6.39	6.59	6.13	4.28	2.92	2.92	1.99	2.92	3.70	3.21	3.21	3.46	4.19
18 Lookout Point	45.0	47.0	9.00	8.00	12.0	15.0	45.0	74.0	85.0	73.0	24.0	19.0	19.0	33.0	35.8
19 Lost Creek	37.0	19.0	19.0	18.0	13.0	14.0	15.0	16.0	56.0	56.0	46.0	44.0	39.0	24.0	30.1
20 Minidoka	6.48	2.39	2.32	2.32	2.57	2.32	10.3	10.3	24.6	22.7	21.7	19.0	19.0	11.5	10.7
21 Palisades	45.5	11.3	11.2	11.4	12.8	28.2	51.7	51.7	152	151	127	144	144	56.9	67.4
22 Roza	4.08	1.15	4.09	2.59	3.12	9.41	11.4	11.4	10.8	10.9	10.6	10.5	10.5	3.39	6.87
<b>Total Independent Hydro</b>															
23 Federal Entities	321	271	179	145	152	251	434	445	718	664	403	383	374	307	353
<b>24 Total Independent Hydro</b>	<b>321</b>	<b>271</b>	<b>179</b>	<b>145</b>	<b>152</b>	<b>251</b>	<b>434</b>	<b>445</b>	<b>718</b>	<b>664</b>	<b>403</b>	<b>383</b>	<b>374</b>	<b>307</b>	<b>353</b>

Table 2.2.2

Table A-8: Bonneville Power Administration - Power Services: Independent Hydro  
 Fiscal Year 2016 Water Year: 1937  
 BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Independent Hydro</b>															
1 Anderson Ranch	1773	1814	1858	1829	1882	1848	1913	1913	5032	15312	14005	4107	4381	3585	61253
2 Big Cliff	3348	5106	2384	1641	2366	2955	1843	2253	8153	8125	2797	1204	1285	3590	47050
3 Black Canyon	2247	1476	1276	1387	1382	1788	1737	1737	3624	3499	3601	1720	1835	3423	30731
4 Boise River Diversion	295	0	0	0	0	0	0	180	1073	1033	1060	505	539	1032	5718
5 Chandler	2390	3168	1337	2297	2953	4150	1229	1229	2518	2328	2418	985	1051	2260	30313
6 Cougar	11208	9204	3564	2439	3170	4222	5779	5779	11567	11921	6867	5200	5325	6307	92551
7 Cowlitz Falls	2625	1213	9421	4112	5403	14115	9398	10254	26188	27333	11502	2693	2267	3979	130503
8 Detroit	26259	26124	9974	11046	8620	14099	9615	10337	54964	20352	7898	3706	3887	14651	221533
9 Dexter	5010	6339	1593	1224	1973	2141	2483	3518	6901	6994	2427	1023	1091	3072	45790
10 Foster	4185	2779	3627	1638	3535	8894	3922	3716	8567	9336	2423	1237	1319	4773	59949
11 Green Peter	10939	7896	8334	3836	0	17655	23178	11852	28359	25639	6619	4551	4855	16985	170697
12 Green Springs	2613	4036	4588	4776	4254	5115	2311	2311	4521	4529	3998	1958	2088	3161	50258
13 Hills Creek	9645	10643	2007	1639	2343	2967	4096	6349	14185	14303	5643	1851	1975	9800	87445
14 Idaho Falls - City Plant	1649	2020	2704	2823	2422	1830	604	604	852	1212	1579	663	708	1422	21089
15 Idaho Falls - Lower Plant #1	1649	2020	2704	2823	2422	1830	604	604	852	1212	1579	663	708	1422	21089
16 Idaho Falls - Lower Plant #2	622	753	1015	1049	912	680	225	225	316	449	589	247	264	532	7878
17 Idaho Falls - Upper Plant	1649	2020	2704	2823	2422	1830	604	604	852	1212	1579	663	708	1422	21089
18 Lookout Point	28081	26133	4414	3929	6213	9078	12540	20621	47959	43940	14303	5790	6176	18907	248084
19 Lost Creek	15443	7836	7689	7441	5092	5981	3081	3286	22942	23016	18703	9094	8598	9343	147546
20 Minidoka	2682	992	988	992	1126	986	2097	2097	10493	9332	9127	3882	4141	4759	53695
21 Palisades	19262	4630	4699	4896	5084	12059	10567	10567	65062	61993	53674	29820	31808	23344	337465
22 Roza	1679	0	1647	1090	1242	3998	2359	2359	4546	4523	4314	2206	2353	0	32316
<b>Total Independent Hydro</b>															
23 Federal Entities	155254	126203	78527	65728	64815	118220	100183	102393	329523	297596	176702	83771	87361	137767	1924042
<b>24 Total Independent Hydro</b>	<b>155254</b>	<b>126203</b>	<b>78527</b>	<b>65728</b>	<b>64815</b>	<b>118220</b>	<b>100183</b>	<b>102393</b>	<b>329523</b>	<b>297596</b>	<b>176702</b>	<b>83771</b>	<b>87361</b>	<b>137767</b>	<b>1924042</b>

Table 2.2.2

Table A-8: Bonneville Power Administration - Power Services: Independent Hydro  
 Fiscal Year 2017 Water Year: 1937  
 BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Independent Hydro</b>															
1 Anderson Ranch	1773	1814	1858	1829	1817	1848	1913	1913	5032	15312	14005	4107	4381	3585	61188
2 Big Cliff	3348	5106	2384	1641	2284	2955	1843	2253	8153	8125	2797	1204	1285	3590	46969
3 Black Canyon	2247	1476	1276	1387	1334	1788	1737	1737	3624	3499	3601	1720	1835	3423	30684
4 Boise River Diversion	295	0	0	0	0	0	0	180	1073	1033	1060	505	539	1032	5718
5 Chandler	2390	3168	1337	2297	2851	4150	1229	1229	2518	2328	2418	985	1051	2260	30211
6 Cougar	11208	9204	3564	2439	3060	4222	5779	5779	11567	11921	6867	5200	5325	6307	92441
7 Cowlitz Falls	2625	1213	9421	4112	5217	14115	9398	10254	26188	27333	11502	2693	2267	3979	130316
8 Detroit	26259	26124	9974	11046	8322	14099	9615	10337	54964	20352	7898	3706	3887	14651	221235
9 Dexter	5010	6339	1593	1224	1905	2141	2483	3518	6901	6994	2427	1023	1091	3072	45722
10 Foster	4185	2779	3627	1638	3413	8894	3922	3716	8567	9336	2423	1237	1319	4773	59827
11 Green Peter	10939	7896	8334	3836	0	17655	23178	11852	28359	25639	6619	4551	4855	16985	170697
12 Green Springs	2613	4036	4588	4776	4108	5115	2311	2311	4521	4529	3998	1958	2088	3161	50111
13 Hills Creek	9645	10643	2007	1639	2262	2967	4096	6349	14185	14303	5643	1851	1975	9800	87364
14 Idaho Falls - City Plant	1649	2020	2704	2823	2338	1830	604	604	852	1212	1579	663	708	1422	21006
15 Idaho Falls - Lower Plant #1	1649	2020	2704	2823	2338	1830	604	604	852	1212	1579	663	708	1422	21006
16 Idaho Falls - Lower Plant #2	622	753	1015	1049	881	680	225	225	316	449	589	247	264	532	7847
17 Idaho Falls - Upper Plant	1649	2020	2704	2823	2338	1830	604	604	852	1212	1579	663	708	1422	21006
18 Lookout Point	28081	26133	4414	3929	5999	9078	12540	20621	47959	43940	14303	5790	6176	18907	247870
19 Lost Creek	15443	7836	7689	7441	4917	5981	3081	3286	22942	23016	18703	9094	8598	9343	147371
20 Minidoka	2682	992	988	992	1087	986	2097	2097	10493	9332	9127	3882	4141	4759	53656
21 Palisades	19262	4630	4699	4896	4909	12059	10567	10567	65062	61993	53674	29820	31808	23344	337290
22 Roza	1679	0	1647	1090	1200	3998	2359	2359	4546	4523	4314	2206	2353	0	32273
<b>Total Independent Hydro</b>															
23 Federal Entities	155254	126203	78527	65728	62580	118220	100183	102393	329523	297596	176702	83771	87361	137767	1921807
<b>24 Total Independent Hydro</b>	<b>155254</b>	<b>126203</b>	<b>78527</b>	<b>65728</b>	<b>62580</b>	<b>118220</b>	<b>100183</b>	<b>102393</b>	<b>329523</b>	<b>297596</b>	<b>176702</b>	<b>83771</b>	<b>87361</b>	<b>137767</b>	<b>1921807</b>

Table 2.2.3

## Table A-8: Bonneville Power Administration - Power Services: Independent Hydro

Fiscal Year 2016 Water Year: 1937

BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Independent Hydro</b>															
1 Anderson Ranch	1346	1327	1319	1377	1431	1352	1473	1473	3746	11295	10723	3140	3349	2736	46088
2 Big Cliff	2604	4267	2080	1335	1810	2246	1397	1707	6727	6275	2411	956	1019	2890	37724
3 Black Canyon	1809	1128	945	1048	1074	1323	1334	1334	2721	2641	2744	1350	1440	2558	23450
4 Boise River Diversion	250	0	0	0	0	0	315	135	785	764	797	380	405	765	4596
5 Chandler	1853	2126	1177	1805	2247	3134	952	952	1926	1848	2115	670	714	1763	23283
6 Cougar	8880	7379	3132	2025	2398	3208	4661	4661	10009	8959	5781	3800	3891	5213	73998
7 Cowlitz Falls	1988	1022	7765	3328	4132	10627	7198	7854	21130	20403	10000	2095	1765	2861	102169
8 Detroit	7146	8123	5576	5099	3700	4699	2841	3055	20627	6936	1774	614	644	4069	74902
9 Dexter	3918	5197	1383	1008	1507	1574	1837	2602	5747	5246	2037	777	829	2688	36349
10 Foster	3255	2268	3069	1338	2729	6709	2918	2764	7057	7224	2041	923	985	3867	47149
11 Green Peter	2453	3640	5058	2116	0	6864	8502	4348	14793	9641	1565	849	905	3895	64630
12 Green Springs	1121	250	128	388	440	809	662	662	2009	1937	1960	899	959	1811	14036
13 Hills Creek	7467	8824	1713	1337	1833	2234	3104	4811	11855	10897	4773	1389	1481	8200	69919
14 Idaho Falls - City Plant	1260	1502	2047	2084	1845	1351	449	449	626	890	1176	494	527	1070	15769
15 Idaho Falls - Lower Plant #1	1260	1502	2047	2084	1845	1351	449	449	626	890	1176	494	527	1070	15769
16 Idaho Falls - Lower Plant #2	469	568	766	791	688	513	170	170	238	339	444	187	199	402	5943
17 Idaho Falls - Upper Plant	1260	1502	2047	2084	1845	1351	449	449	626	890	1176	494	527	1070	15769
18 Lookout Point	5399	7754	2282	2023	2139	2067	3660	6019	15281	8620	3553	1050	1120	4853	65820
19 Lost Creek	12085	5863	6447	5951	3956	4421	2319	2474	18722	17304	15521	6746	6378	7937	116123
20 Minidoka	2142	735	736	732	660	736	1622	1622	7780	7019	6982	2944	3140	3490	40340
21 Palisades	14596	3491	3602	3573	3839	8894	8055	8055	48141	47051	40872	22171	23649	17614	253603
22 Roza	1353	829	1395	839	931	2992	1748	1748	3496	3347	3579	1579	1684	2437	27957
<b>Total Independent Hydro</b>															
23 Federal Entities	83916	69297	54715	42365	41047	68454	56115	57793	204669	180414	123202	53999	56138	83259	1175384
<b>24 Total Independent Hydro</b>	<b>83916</b>	<b>69297</b>	<b>54715</b>	<b>42365</b>	<b>41047</b>	<b>68454</b>	<b>56115</b>	<b>57793</b>	<b>204669</b>	<b>180414</b>	<b>123202</b>	<b>53999</b>	<b>56138</b>	<b>83259</b>	<b>1175384</b>



Table 2.2.3

## Table A-8: Bonneville Power Administration - Power Services: Independent Hydro

Fiscal Year 2017 Water Year: 1937

BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Independent Hydro</b>															
1 Anderson Ranch	1346	1327	1319	1377	1381	1352	1473	1473	3746	11295	10723	3140	3349	2736	46039
2 Big Cliff	2604	4267	2080	1335	1748	2246	1397	1707	6727	6275	2411	956	1019	2890	37661
3 Black Canyon	1809	1128	945	1048	1037	1323	1334	1334	2721	2641	2744	1350	1440	2558	23413
4 Boise River Diversion	250	0	0	0	0	0	315	135	785	764	797	380	405	765	4596
5 Chandler	1853	2126	1177	1805	2169	3134	952	952	1926	1848	2115	670	714	1763	23205
6 Cougar	8880	7379	3132	2025	2316	3208	4661	4661	10009	8959	5781	3800	3891	5213	73916
7 Cowlitz Falls	1988	1022	7765	3328	3990	10627	7198	7854	21130	20403	10000	2095	1765	2861	102026
8 Detroit	7146	8123	5576	5099	3572	4699	2841	3055	20627	6936	1774	614	644	4069	74774
9 Dexter	3918	5197	1383	1008	1455	1574	1837	2602	5747	5246	2037	777	829	2688	36297
10 Foster	3255	2268	3069	1338	2635	6709	2918	2764	7057	7224	2041	923	985	3867	47055
11 Green Peter	2453	3640	5058	2116	0	6864	8502	4348	14793	9641	1565	849	905	3895	64630
12 Green Springs	1121	250	128	388	425	809	662	662	2009	1937	1960	899	959	1811	14021
13 Hills Creek	7467	8824	1713	1337	1770	2234	3104	4811	11855	10897	4773	1389	1481	8200	69856
14 Idaho Falls - City Plant	1260	1502	2047	2084	1781	1351	449	449	626	890	1176	494	527	1070	15705
15 Idaho Falls - Lower Plant #1	1260	1502	2047	2084	1781	1351	449	449	626	890	1176	494	527	1070	15705
16 Idaho Falls - Lower Plant #2	469	568	766	791	664	513	170	170	238	339	444	187	199	402	5920
17 Idaho Falls - Upper Plant	1260	1502	2047	2084	1781	1351	449	449	626	890	1176	494	527	1070	15705
18 Lookout Point	5399	7754	2282	2023	2065	2067	3660	6019	15281	8620	3553	1050	1120	4853	65746
19 Lost Creek	12085	5863	6447	5951	3819	4421	2319	2474	18722	17304	15521	6746	6378	7937	115986
20 Minidoka	2142	735	736	732	637	736	1622	1622	7780	7019	6982	2944	3140	3490	40317
21 Palisades	14596	3491	3602	3573	3706	8894	8055	8055	48141	47051	40872	22171	23649	17614	253470
22 Roza	1353	829	1395	839	898	2992	1748	1748	3496	3347	3579	1579	1684	2437	27925
<b>Total Independent Hydro</b>															
23 Federal Entities	83916	69297	54715	42365	39632	68454	56115	57793	204669	180414	123202	53999	56138	83259	1173968
<b>24 Total Independent Hydro</b>	<b>83916</b>	<b>69297</b>	<b>54715</b>	<b>42365</b>	<b>39632</b>	<b>68454</b>	<b>56115</b>	<b>57793</b>	<b>204669</b>	<b>180414</b>	<b>123202</b>	<b>53999</b>	<b>56138</b>	<b>83259</b>	<b>1173968</b>

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Table 2.3.1

Table A-12: Bonneville Power Administration - Power Services: Cogeneration Resources

Fiscal Year 2016

BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<b>Cogeneration Resources</b>															
1 Georgia-Pacific Paper (Wauna)	18.4	19.6	22.6	24.0	23.0	23.0	0	0	0	0	0	0	0	0	10.9
<b>Total Cogeneration Resources</b>															
2 Federal Entities	18.4	19.6	22.6	24.0	23.0	23.0	0	0	0	0	0	0	0	0	10.9
<b>3 Total</b>	<b>18.4</b>	<b>19.6</b>	<b>22.6</b>	<b>24.0</b>	<b>23.0</b>	<b>23.0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>10.9</b>

Table 2.3.1

Table A-12: Bonneville Power Administration - Power Services: Cogeneration Resources  
Fiscal Year 2017

BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<b>Cogeneration Resources</b>															
1 Georgia-Pacific Paper (Wauna)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total Cogeneration Resources</b>															
2 Federal Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>3 Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

Table 2.3.2

Table A-12: Bonneville Power Administration - Power Services: Cogeneration Resources

Fiscal Year 2016

BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Cogeneration Resources</b>															
1 Georgia-Pacific Paper (Wauna)	7936	7526	9406	9580	9212	9919	0	0	0	0	0	0	0	0	53579
<b>Total Cogeneration Resources</b>															
2 Federal Entities	7936	7526	9406	9580	9212	9919	0	0	0	0	0	0	0	0	53579
<b>3 Total</b>	<b>7936</b>	<b>7526</b>	<b>9406</b>	<b>9580</b>	<b>9212</b>	<b>9919</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>53579</b>

Table 2.3.2

Table A-12: Bonneville Power Administration - Power Services: Cogeneration Resources

Fiscal Year 2017

BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Cogeneration Resources</b>															
1 Georgia-Pacific Paper (Wauna)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total Cogeneration Resources</b>															
2 Federal Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>3 Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

Table 2.3.3

Table A-12: Bonneville Power Administration - Power Services: Cogeneration Resources

Fiscal Year 2016

BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Cogeneration Resources</b>															
1 Georgia-Pacific Paper (Wauna)	5731	6605	7416	8239	6817	7141	0	0	0	0	0	0	0	0	41949
<b>Total Cogeneration Resources</b>															
2 Federal Entities	5731	6605	7416	8239	6817	7141	0	0	0	0	0	0	0	0	41949
<b>3 Total</b>	<b>5731</b>	<b>6605</b>	<b>7416</b>	<b>8239</b>	<b>6817</b>	<b>7141</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>41949</b>



Table 2.3.3

Table A-12: Bonneville Power Administration - Power Services: Cogeneration Resources

Fiscal Year 2017

BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum	
<b>Cogeneration Resources</b>																
1 Georgia-Pacific Paper (Wauna)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total Cogeneration Resources</b>																
2 Federal Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>3 Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

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Table 2.4.1

Table A-13: Bonneville Power Administration - Power Services: Large Thermal Resources

Fiscal Year 2016

BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<b>Large Thermal Resources</b>															
1 Columbia Generating Station	1075	1075	1075	1075	1075	1075	1075	1075	1075	1075	1075	1075	1075	1075	1075
<b>Total Large Thermal Resources</b>															
2 Federal Entities	1075	1075	1075	1075	1075	1075	1075	1075	1075	1075	1075	1075	1075	1075	1075
<b>3 Total</b>	<b>1075</b>	<b>1075</b>	<b>1075</b>	<b>1075</b>	<b>1075</b>	<b>1075</b>	<b>1075</b>	<b>1075</b>	<b>1075</b>	<b>1075</b>	<b>1075</b>	<b>1075</b>	<b>1075</b>	<b>1075</b>	<b>1075</b>

Table 2.4.1

Table A-13: Bonneville Power Administration - Power Services: Large Thermal Resources

Fiscal Year 2017

BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<b>Large Thermal Resources</b>															
1 Columbia Generating Station	1075	1075	1075	1075	1075	1075	1075	1075	347	0	971	1075	1075	1075	916
<b>Total Large Thermal Resources</b>															
2 Federal Entities	1075	1075	1075	1075	1075	1075	1075	1075	347	0	971	1075	1075	1075	916
<b>3 Total</b>	<b>1075</b>	<b>1075</b>	<b>1075</b>	<b>1075</b>	<b>1075</b>	<b>1075</b>	<b>1075</b>	<b>1075</b>	<b>347</b>	<b>0</b>	<b>971</b>	<b>1075</b>	<b>1075</b>	<b>1075</b>	<b>916</b>

Table 2.4.2

Table A-13: Bonneville Power Administration - Power Services: Large Thermal Resources

Fiscal Year 2016

BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Large Thermal Resources</b>															
1 Columbia Generating Station	464400	412800	447200	430000	430000	464400	223600	223600	430000	447200	430000	223600	240800	430000	5297600
<b>Total Large Thermal Resources</b>															
2 Federal Entities	464400	412800	447200	430000	430000	464400	223600	223600	430000	447200	430000	223600	240800	430000	5297600
<b>3 Total</b>	<b>464400</b>	<b>412800</b>	<b>447200</b>	<b>430000</b>	<b>430000</b>	<b>464400</b>	<b>223600</b>	<b>223600</b>	<b>430000</b>	<b>447200</b>	<b>430000</b>	<b>223600</b>	<b>240800</b>	<b>430000</b>	<b>5297600</b>

Table 2.4.2

Table A-13: Bonneville Power Administration - Power Services: Large Thermal Resources

Fiscal Year 2017

BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Large Thermal Resources</b>															
1 Columbia Generating Station	447200	430000	447200	430000	412800	464400	223600	206400	144258	0	388387	223600	240800	430000	4488645
<b>Total Large Thermal Resources</b>															
2 Federal Entities	447200	430000	447200	430000	412800	464400	223600	206400	144258	0	388387	223600	240800	430000	4488645
<b>3 Total</b>	<b>447200</b>	<b>430000</b>	<b>447200</b>	<b>430000</b>	<b>412800</b>	<b>464400</b>	<b>223600</b>	<b>206400</b>	<b>144258</b>	<b>0</b>	<b>388387</b>	<b>223600</b>	<b>240800</b>	<b>430000</b>	<b>4488645</b>

Table 2.4.3

Table A-13: Bonneville Power Administration - Power Services: Large Thermal Resources

Fiscal Year 2016

BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Large Thermal Resources</b>															
1 Columbia Generating Station	335400	362275	352600	369800	318200	334325	163400	163400	369800	326800	369800	163400	172000	344000	4145200
<b>Total Large Thermal Resources</b>															
2 Federal Entities	335400	362275	352600	369800	318200	334325	163400	163400	369800	326800	369800	163400	172000	344000	4145200
<b>3 Total</b>	<b>335400</b>	<b>362275</b>	<b>352600</b>	<b>369800</b>	<b>318200</b>	<b>334325</b>	<b>163400</b>	<b>163400</b>	<b>369800</b>	<b>326800</b>	<b>369800</b>	<b>163400</b>	<b>172000</b>	<b>344000</b>	<b>4145200</b>



Table 2.4.3

Table A-13: Bonneville Power Administration - Power Services: Large Thermal Resources

Fiscal Year 2017

BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Large Thermal Resources</b>															
1 Columbia Generating Station	352600	345075	352600	369800	309600	334325	163400	180600	113742	0	334013	163400	172000	344000	3535155
<b>Total Large Thermal Resources</b>															
2 Federal Entities	352600	345075	352600	369800	309600	334325	163400	180600	113742	0	334013	163400	172000	344000	3535155
<b>3 Total</b>	<b>352600</b>	<b>345075</b>	<b>352600</b>	<b>369800</b>	<b>309600</b>	<b>334325</b>	<b>163400</b>	<b>180600</b>	<b>113742</b>	<b>0</b>	<b>334013</b>	<b>163400</b>	<b>172000</b>	<b>344000</b>	<b>3535155</b>

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Table 2.5.1

Table A-11: Bonneville Power Administration - Power Services: Renewable Resources  
Fiscal Year 2016

BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<b>Renewable Resources</b>															
1 Ashland Solar Project	0	0	0	0	0	0	0	0	0	0	0.01	0	0	0	0
2 City Council	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 N. Mountain Park	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 Police Station	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 Public Works	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 Condon	10.9	9.77	13.8	7.23	7.13	13.0	10.7	8.60	8.68	10.3	6.85	5.92	11.5	9.57	9.64
7 Condon 1	5.36	4.82	6.81	3.57	3.52	6.40	5.27	4.25	4.29	5.08	3.39	2.92	5.68	4.73	4.76
8 Condon 2	5.49	4.94	6.98	3.66	3.61	6.56	5.40	4.35	4.39	5.20	3.47	2.99	5.81	4.84	4.88
9 Foote Creek 1	4.67	3.43	2.94	2.30	2.21	4.15	5.33	4.16	4.38	6.00	4.90	2.94	4.54	4.16	3.97
10 Foote Creek 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 Foote Creek 4	5.13	3.76	3.22	2.52	2.42	4.55	5.84	4.56	4.80	6.58	5.38	3.22	4.98	4.56	4.36
12 Fourmile Hill Geothermal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 Klondike 1	6.35	4.54	4.14	3.30	3.27	6.06	7.95	6.74	8.19	10.4	9.47	7.55	10.5	9.35	6.80
14 Klondike 3	13.3	9.48	8.65	6.89	6.81	12.7	16.6	14.1	17.1	21.7	19.8	15.8	21.9	19.5	14.2
15 Stateline	22.6	14.5	17.5	12.0	7.61	29.1	26.8	18.5	24.0	35.3	14.5	15.8	34.2	22.3	20.6
16 Stateline-OR	9.13	5.84	7.06	4.82	3.07	11.7	10.8	7.48	9.68	14.2	5.86	6.38	13.8	8.97	8.32
17 Stateline-WA	13.5	8.65	10.5	7.14	4.54	17.3	16.0	11.1	14.3	21.1	8.67	9.44	20.4	13.3	12.3
18 White Bluffs Solar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total Renewable Resources</b>															
19 Federal Entities	62.9	45.5	50.3	34.2	29.4	69.4	73.1	56.7	67.2	90.3	60.9	51.2	87.5	69.4	59.6
<b>20 Total</b>	<b>62.9</b>	<b>45.5</b>	<b>50.3</b>	<b>34.2</b>	<b>29.4</b>	<b>69.4</b>	<b>73.1</b>	<b>56.7</b>	<b>67.2</b>	<b>90.3</b>	<b>60.9</b>	<b>51.2</b>	<b>87.5</b>	<b>69.4</b>	<b>59.6</b>

Table 2.5.1

Table A-11: Bonneville Power Administration - Power Services: Renewable Resources  
Fiscal Year 2017

BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<b>Renewable Resources</b>															
1 Ashland Solar Project	0	0	0	0	0	0	0	0	0	0	0.01	0	0	0	0
2 City Council	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 N. Mountain Park	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 Police Station	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 Public Works	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 Condon	10.9	9.77	13.8	7.23	7.13	13.0	10.7	8.60	8.68	10.3	6.85	5.92	11.5	9.57	9.65
7 Condon 1	5.36	4.82	6.81	3.57	3.52	6.40	5.27	4.25	4.29	5.08	3.39	2.92	5.68	4.73	4.77
8 Condon 2	5.49	4.94	6.98	3.66	3.61	6.56	5.40	4.35	4.39	5.20	3.47	2.99	5.81	4.84	4.88
9 Foote Creek 1	4.67	3.43	2.94	2.30	2.21	4.15	5.33	4.16	4.38	6.00	4.90	2.94	4.54	4.16	3.98
10 Foote Creek 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 Foote Creek 4	5.13	3.76	3.22	2.52	2.42	4.55	5.84	4.56	4.80	6.58	5.38	3.22	4.98	4.56	4.36
12 Fourmile Hill Geothermal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 Klondike 1	6.35	4.54	4.14	3.30	3.27	6.06	7.95	6.74	8.19	10.4	9.47	7.55	10.5	9.35	6.81
14 Klondike 3	13.3	9.48	8.65	6.89	6.81	12.7	16.6	14.1	17.1	21.7	19.8	15.8	21.9	19.5	14.2
15 Stateline	22.6	14.5	17.5	12.0	7.61	29.1	26.8	18.5	24.0	35.3	14.5	15.8	34.2	22.3	20.7
16 Stateline-OR	9.13	5.84	7.06	4.82	3.07	11.7	10.8	7.48	9.68	14.2	5.86	6.38	13.8	8.97	8.34
17 Stateline-WA	13.5	8.65	10.5	7.14	4.54	17.3	16.0	11.1	14.3	21.1	8.67	9.44	20.4	13.3	12.3
18 White Bluffs Solar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total Renewable Resources</b>															
19 Federal Entities	62.9	45.5	50.3	34.2	29.4	69.4	73.1	56.7	67.2	90.3	60.9	51.2	87.5	69.4	59.7
<b>20 Total</b>	<b>62.9</b>	<b>45.5</b>	<b>50.3</b>	<b>34.2</b>	<b>29.4</b>	<b>69.4</b>	<b>73.1</b>	<b>56.7</b>	<b>67.2</b>	<b>90.3</b>	<b>60.9</b>	<b>51.2</b>	<b>87.5</b>	<b>69.4</b>	<b>59.7</b>

Table 2.5.2

**Table A-11: Bonneville Power Administration - Power Services: Renewable Resources  
Fiscal Year 2016**

**BP-2016 Final Rate Proposal** Report Date: 6/9/2015

S124-RC-20150609-145700

HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Renewable Resources</b>															
1 Ashland Solar Project	1.08	0.58	0.42	0.60	0.80	1.08	0.73	0.73	1.80	1.87	2.00	0.94	1.01	1.80	15.4
2 City Council	0	0	0	0	0	0	0.10	0.10	0.20	0.21	0.20	0.10	0.11	0.20	1.23
3 N. Mountain Park	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 Police Station	0.22	0.19	0	0.20	0.20	0.22	0.10	0.10	0.40	0.42	0.40	0.21	0.22	0.40	3.28
5 Public Works	0.86	0.38	0.42	0.40	0.60	0.86	0.52	0.52	1.20	1.25	1.40	0.62	0.67	1.20	10.9
6 Condon	4384	3655	5285	3323	2500	5221	2836	1937	3412	4391	3197	1315	2559	4382	48396
7 Condon 1	2166	1805	2611	1642	1235	2579	1401	957	1685	2169	1579	649	1264	2165	23907
8 Condon 2	2218	1849	2674	1681	1265	2642	1435	980	1726	2222	1618	665	1295	2217	24488
9 Foote Creek 1	1937	1224	1132	1103	778	1802	1227	783	1559	2513	2097	476	947	1685	19263
10 Foote Creek 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 Foote Creek 4	2124	1342	1241	1210	854	1976	1346	859	1710	2756	2300	521	1038	1848	21126
12 Fourmile Hill Geothermal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 Klondike 1	2749	1776	1542	1477	1179	2671	2009	1024	2899	4027	4241	1321	2213	3849	32977
14 Klondike 3	5737	3706	3217	3082	2461	5574	4194	2137	6051	8404	8851	2757	4618	8033	68822
15 Stateline	8965	4983	6164	5459	1880	11204	5606	2564	7075	12059	5685	2391	6574	9503	90112
16 Stateline-OR	3614	2009	2485	2200	758	4516	2260	1034	2852	4861	2292	964	2650	3831	36324
17 Stateline-WA	5351	2974	3679	3258	1122	6688	3346	1530	4223	7198	3394	1427	3924	5672	53788
18 White Bluffs Solar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total Renewable Resources</b>															
19 Federal Entities	25897	16685	18581	15654	9654	28450	17219	9304	22708	34151	26373	8782	17950	29303	280711
<b>20 Total</b>	<b>25897</b>	<b>16685</b>	<b>18581</b>	<b>15654</b>	<b>9654</b>	<b>28450</b>	<b>17219</b>	<b>9304</b>	<b>22708</b>	<b>34151</b>	<b>26373</b>	<b>8782</b>	<b>17950</b>	<b>29303</b>	<b>280711</b>

Table 2.5.2

Table A-11: Bonneville Power Administration - Power Services: Renewable Resources  
Fiscal Year 2017

BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Renewable Resources</b>															
1 Ashland Solar Project	1.04	0.60	0.42	0.60	0.77	1.08	0.73	0.67	1.87	1.87	2.00	0.94	1.01	1.80	15.4
2 City Council	0	0	0	0	0	0	0.10	0.10	0.21	0.21	0.20	0.10	0.11	0.20	1.23
3 N. Mountain Park	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 Police Station	0.21	0.20	0	0.20	0.19	0.22	0.10	0.10	0.42	0.42	0.40	0.21	0.22	0.40	3.28
5 Public Works	0.83	0.40	0.42	0.40	0.58	0.86	0.52	0.48	1.25	1.25	1.40	0.62	0.67	1.20	10.9
6 Condon	4384	3655	5285	3323	2414	5221	2836	1937	3412	4391	3197	1315	2559	4382	48309
7 Condon 1	2166	1805	2611	1642	1192	2579	1401	957	1685	2169	1579	649	1264	2165	23865
8 Condon 2	2218	1849	2674	1681	1221	2642	1435	980	1726	2222	1618	665	1295	2217	24445
9 Foote Creek 1	1937	1224	1132	1103	752	1802	1227	783	1559	2513	2097	476	947	1685	19236
10 Foote Creek 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 Foote Creek 4	2124	1342	1241	1210	824	1976	1346	859	1710	2756	2300	521	1038	1848	21097
12 Fourmile Hill Geothermal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 Klondike 1	2749	1776	1542	1477	1139	2671	2009	1024	2899	4027	4241	1321	2213	3849	32937
14 Klondike 3	5737	3706	3217	3082	2376	5574	4194	2137	6051	8404	8851	2757	4618	8033	68737
15 Stateline	8965	4983	6164	5459	1815	11204	5606	2564	7075	12059	5685	2391	6574	9503	90047
16 Stateline-OR	3614	2009	2485	2200	732	4516	2260	1034	2852	4861	2292	964	2650	3831	36298
17 Stateline-WA	5351	2974	3679	3258	1084	6688	3346	1530	4223	7198	3394	1427	3924	5672	53749
18 White Bluffs Solar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total Renewable Resources</b>															
19 Federal Entities	25897	16685	18581	15654	9321	28450	17219	9304	22709	34151	26373	8782	17950	29303	280378
<b>20 Total</b>	<b>25897</b>	<b>16685</b>	<b>18581</b>	<b>15654</b>	<b>9321</b>	<b>28450</b>	<b>17219</b>	<b>9304</b>	<b>22709</b>	<b>34151</b>	<b>26373</b>	<b>8782</b>	<b>17950</b>	<b>29303</b>	<b>280378</b>

Table 2.5.3

**Table A-11: Bonneville Power Administration - Power Services: Renewable Resources  
Fiscal Year 2016**

**BP-2016 Final Rate Proposal** Report Date: 6/9/2015

S124-RC-20150609-145700

LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Renewable Resources</b>															
1 Ashland Solar Project	0.78	0.51	0.33	0.52	0.59	0.78	0.53	0.53	1.55	1.37	1.72	0.68	0.72	1.44	12.0
2 City Council	0	0	0	0	0	0	0.08	0.08	0.17	0.15	0.17	0.08	0.08	0.16	0.96
3 N. Mountain Park	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 Police Station	0.16	0.17	0	0.17	0.15	0.16	0.08	0.08	0.34	0.30	0.34	0.15	0.16	0.32	2.58
5 Public Works	0.62	0.34	0.33	0.34	0.44	0.62	0.38	0.38	1.03	0.91	1.20	0.46	0.48	0.96	8.50
6 Condon	3689	3387	4977	2054	2460	4412	1007	1157	3050	3014	1902	816	1853	2508	36286
7 Condon 1	1823	1673	2459	1015	1215	2179	497	572	1507	1489	939	403	915	1239	17926
8 Condon 2	1867	1714	2518	1039	1245	2232	509	586	1543	1525	962	413	938	1269	18361
9 Foote Creek 1	1540	1248	1053	604	757	1278	690	714	1696	1805	1550	581	797	1308	15623
10 Foote Creek 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 Foote Creek 4	1689	1369	1155	663	830	1402	757	783	1860	1979	1700	637	874	1435	17134
12 Fourmile Hill Geothermal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 Klondike 1	1974	1501	1542	981	1093	1833	853	1402	3192	3472	2804	1397	1811	2880	26734
14 Klondike 3	4121	3131	3217	2046	2281	3826	1780	2927	6661	7246	5851	2916	3779	6011	55792
15 Stateline	7886	5464	6867	3446	3416	10384	4026	4113	10791	13382	5123	3302	6547	6522	91271
16 Stateline-OR	3179	2202	2768	1389	1377	4186	1623	1658	4350	5394	2065	1331	2639	2629	36791
17 Stateline-WA	4707	3261	4099	2057	2039	6198	2403	2455	6441	7987	3058	1971	3908	3893	54480
18 White Bluffs Solar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total Renewable Resources</b>															
19 Federal Entities	20902	16101	18811	9795	10838	23136	9114	11097	27252	30899	18932	9650	15661	20665	242853
<b>20 Total</b>	<b>20902</b>	<b>16101</b>	<b>18811</b>	<b>9795</b>	<b>10838</b>	<b>23136</b>	<b>9114</b>	<b>11097</b>	<b>27252</b>	<b>30899</b>	<b>18932</b>	<b>9650</b>	<b>15661</b>	<b>20665</b>	<b>242853</b>



Table 2.5.3

Table A-11: Bonneville Power Administration - Power Services: Renewable Resources  
Fiscal Year 2017

BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Renewable Resources</b>															
1 Ashland Solar Project	0.82	0.48	0.33	0.52	0.58	0.78	0.53	0.59	1.48	1.37	1.72	0.68	0.72	1.44	12.0
2 City Council	0	0	0	0	0	0	0.08	0.08	0.16	0.15	0.17	0.08	0.08	0.16	0.96
3 N. Mountain Park	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 Police Station	0.16	0.16	0	0.17	0.14	0.16	0.08	0.08	0.33	0.30	0.34	0.15	0.16	0.32	2.56
5 Public Works	0.66	0.32	0.33	0.34	0.43	0.62	0.38	0.42	0.98	0.91	1.20	0.46	0.48	0.96	8.50
6 Condon	3689	3387	4977	2054	2376	4412	1007	1157	3050	3014	1902	816	1853	2508	36202
7 Condon 1	1823	1673	2459	1015	1174	2179	497	572	1507	1489	939	403	915	1239	17884
8 Condon 2	1867	1714	2518	1039	1202	2232	509	586	1543	1525	962	413	938	1269	18318
9 Foote Creek 1	1540	1248	1053	604	731	1278	690	714	1696	1805	1550	581	797	1308	15597
10 Foote Creek 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 Foote Creek 4	1689	1369	1155	663	801	1402	757	783	1860	1979	1700	637	874	1435	17106
12 Fourmile Hill Geothermal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 Klondike 1	1974	1501	1542	981	1055	1833	853	1402	3192	3472	2804	1397	1811	2880	26696
14 Klondike 3	4121	3131	3217	2046	2202	3826	1780	2927	6661	7246	5851	2916	3779	6011	55714
15 Stateline	7886	5464	6867	3446	3298	10384	4026	4113	10791	13382	5123	3302	6547	6522	91153
16 Stateline-OR	3179	2202	2768	1389	1330	4186	1623	1658	4350	5394	2065	1331	2639	2629	36744
17 Stateline-WA	4707	3261	4099	2057	1969	6198	2403	2455	6441	7987	3058	1971	3908	3893	54409
18 White Bluffs Solar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total Renewable Resources</b>															
19 Federal Entities	20902	16101	18811	9795	10464	23136	9114	11097	27252	30899	18932	9650	15661	20665	242479
<b>20 Total</b>	<b>20902</b>	<b>16101</b>	<b>18811</b>	<b>9795</b>	<b>10464</b>	<b>23136</b>	<b>9114</b>	<b>11097</b>	<b>27252</b>	<b>30899</b>	<b>18932</b>	<b>9650</b>	<b>15661</b>	<b>20665</b>	<b>242479</b>

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Table 2.6.1

Table A-9: Bonneville Power Administration - Power Services: Small Hydro

Fiscal Year 2016 Water Year: 1937

BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<b>Small Hydro</b>															
1 Dworshak-Clearwater Hatchery	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63
2 Rocky Brook	0.04	0.21	0.56	0.58	0.41	0.47	0.46	0.46	0.20	0.09	0	0	0	0	0.25
<b>Total Small Hydro</b>															
3 Federal Entities	2.67	2.84	3.19	3.21	3.04	3.10	3.09	3.09	2.83	2.72	2.63	2.63	2.63	2.63	2.88
<b>4 Total Small Hydro</b>	<b>2.67</b>	<b>2.84</b>	<b>3.19</b>	<b>3.21</b>	<b>3.04</b>	<b>3.10</b>	<b>3.09</b>	<b>3.09</b>	<b>2.83</b>	<b>2.72</b>	<b>2.63</b>	<b>2.63</b>	<b>2.63</b>	<b>2.63</b>	<b>2.88</b>

Table 2.6.1

Table A-9: Bonneville Power Administration - Power Services: Small Hydro

Fiscal Year 2017 Water Year: 1937

BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<b>Small Hydro</b>															
1 Dworshak-Clearwater Hatchery	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63
2 Rocky Brook	0.04	0.21	0.56	0.58	0.42	0.47	0.46	0.46	0.20	0.09	0	0	0	0	0.25
<b>Total Small Hydro</b>															
3 Federal Entities	2.67	2.84	3.19	3.21	3.05	3.10	3.09	3.09	2.83	2.72	2.63	2.63	2.63	2.63	2.88
<b>4 Total Small Hydro</b>	<b>2.67</b>	<b>2.84</b>	<b>3.19</b>	<b>3.21</b>	<b>3.05</b>	<b>3.10</b>	<b>3.09</b>	<b>3.09</b>	<b>2.83</b>	<b>2.72</b>	<b>2.63</b>	<b>2.63</b>	<b>2.63</b>	<b>2.63</b>	<b>2.88</b>

Table 2.6.2

Table A-9: Bonneville Power Administration - Power Services: Small Hydro  
 Fiscal Year 2016 Water Year: 1937  
 BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Small Hydro</b>															
1 Dworshak-Clearwater Hatchery	1136	1010	1094	1052	1052	1136	547	547	1052	1094	1052	547	589	1052	12961
2 Rocky Brook	19.0	88.0	239	247	162	199	95.0	95.0	85.0	36.0	1.00	1.00	1.00	0	1268
<b>Total Small Hydro</b>															
3 Federal Entities	1155	1098	1333	1299	1214	1335	642	642	1137	1130	1053	548	590	1052	14229
<b>4 Total Small Hydro</b>	<b>1155</b>	<b>1098</b>	<b>1333</b>	<b>1299</b>	<b>1214</b>	<b>1335</b>	<b>642</b>	<b>642</b>	<b>1137</b>	<b>1130</b>	<b>1053</b>	<b>548</b>	<b>590</b>	<b>1052</b>	<b>14229</b>

Table 2.6.2

Table A-9: Bonneville Power Administration - Power Services: Small Hydro  
 Fiscal Year 2017 Water Year: 1937  
 BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Small Hydro</b>															
1 Dworshak-Clearwater Hatchery	1094	1052	1094	1052	1010	1136	547	505	1094	1094	1052	547	589	1052	12919
2 Rocky Brook	19.0	88.0	239	247	162	199	95.0	95.0	85.0	36.0	1.00	1.00	1.00	0	1268
<b>Total Small Hydro</b>															
3 Federal Entities	1113	1140	1333	1299	1172	1335	642	600	1179	1130	1053	548	590	1052	14187
<b>4 Total Small Hydro</b>	<b>1113</b>	<b>1140</b>	<b>1333</b>	<b>1299</b>	<b>1172</b>	<b>1335</b>	<b>642</b>	<b>600</b>	<b>1179</b>	<b>1130</b>	<b>1053</b>	<b>548</b>	<b>590</b>	<b>1052</b>	<b>14187</b>

Table 2.6.3

Table A-9: Bonneville Power Administration - Power Services: Small Hydro  
 Fiscal Year 2016 Water Year: 1937  
 BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Small Hydro</b>															
1 Dworshak-Clearwater Hatchery	821	886	863	905	778	818	400	400	905	800	905	400	421	842	10141
2 Rocky Brook	14.0	61.0	175	181	121	149	70.0	70.0	67.0	26.0	1.00	0	0	0	935
<b>Total Small Hydro</b>															
3 Federal Entities	835	947	1038	1086	899	967	470	470	972	826	906	400	421	842	11076
<b>4 Total Small Hydro</b>	<b>835</b>	<b>947</b>	<b>1038</b>	<b>1086</b>	<b>899</b>	<b>967</b>	<b>470</b>	<b>470</b>	<b>972</b>	<b>826</b>	<b>906</b>	<b>400</b>	<b>421</b>	<b>842</b>	<b>11076</b>



Table 2.6.3

Table A-9: Bonneville Power Administration - Power Services: Small Hydro  
 Fiscal Year 2017 Water Year: 1937  
 BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Small Hydro</b>															
1 Dworshak-Clearwater Hatchery	863	844	863	905	757	818	400	442	863	800	905	400	421	842	10120
2 Rocky Brook	14.0	61.0	175	181	121	149	70.0	70.0	67.0	26.0	1.00	0	0	0	935
<b>Total Small Hydro</b>															
3 Federal Entities	877	905	1038	1086	878	967	470	512	930	826	906	400	421	842	11055
<b>4 Total Small Hydro</b>	<b>877</b>	<b>905</b>	<b>1038</b>	<b>1086</b>	<b>878</b>	<b>967</b>	<b>470</b>	<b>512</b>	<b>930</b>	<b>826</b>	<b>906</b>	<b>400</b>	<b>421</b>	<b>842</b>	<b>11055</b>

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Table 2.7.1

## Table A-3: Bonneville Power Administration - Power Services Imports

Fiscal Year 2016

BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<b>Canada</b>															
<b>Contracts</b>															
<sup>1</sup> BCHP to BPA-P Trty LcAlGcyRtn	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
<sup>2</sup> Total Imports From CAN	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>
<b>Pacific Southwest</b>															
<b>Contracts</b>	<b>11.1</b>	<b>28.4</b>	<b>27.5</b>	<b>29.2</b>	<b>27.8</b>	<b>27.5</b>	<b>15.2</b>	<b>15.2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>13.9</b>
<sup>3</sup> PASA to BPA-P CNX EER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>4</sup> PASA to BPA-P CNX Repl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>5</sup> PASA to BPA-P SNX Ret	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>6</sup> RVSD to BPA-P CNX EER	0	16.4	15.6	16.8	16.0	15.6	7.89	7.89	0	0	0	0	0	0	7.32
<sup>7</sup> RVSD to BPA-P CNX Repl	11.1	2.50	2.78	2.66	2.59	2.79	2.75	2.75	0	0	0	0	0	0	2.27
<sup>8</sup> RVSD to BPA-P SNX Ret	0	9.52	9.09	9.77	9.28	9.10	4.59	4.59	0	0	0	0	0	0	4.26
<sup>9</sup> Total Imports From PSW	<b>11.1</b>	<b>28.4</b>	<b>27.5</b>	<b>29.2</b>	<b>27.8</b>	<b>27.5</b>	<b>15.2</b>	<b>15.2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>13.9</b>
<b>Total Imports</b>															
<sup>10</sup> Federal Entities	12.1	29.4	28.5	30.2	28.8	28.5	16.2	16.2	1.00	1.00	1.00	1.00	1.00	1.00	14.9
<sup>11</sup> Total Imports	<b>12.1</b>	<b>29.4</b>	<b>28.5</b>	<b>30.2</b>	<b>28.8</b>	<b>28.5</b>	<b>16.2</b>	<b>16.2</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>14.9</b>

Table 2.7.1

Table A-3: Bonneville Power Administration - Power Services Imports

Fiscal Year 2017

BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<b>Canada</b>															
<b>Contracts</b>															
1 BCHP to BPA-P Trty LcAlGcyRtn	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2 Total Imports From CAN	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
<b>Pacific Southwest</b>															
<b>Contracts</b>															
3 PASA to BPA-P CNX EER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 PASA to BPA-P CNX Repl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 PASA to BPA-P SNX Ret	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 RVSD to BPA-P CNX EER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 RVSD to BPA-P CNX Repl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 RVSD to BPA-P SNX Ret	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 Total Imports From PSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total Imports</b>															
10 Federal Entities	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
11 Total Imports	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Table 2.7.2

## Table A-3: Bonneville Power Administration - Power Services Imports

Fiscal Year 2016

BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Canada</b>															
<b>Contracts</b>															
1 BCHP to BPA-P Trty LCALgcyRtn	432	384	416	400	400	432	208	208	400	416	400	208	224	400	4928
2 Total Imports From CAN	432	384	416	400	400	432	208	208	400	416	400	208	224	400	4928
<b>Pacific Southwest</b>															
<b>Contracts</b>	<b>2640</b>	<b>4262</b>	<b>4384</b>	<b>5069</b>	<b>4318</b>	<b>4440</b>	<b>1226</b>	<b>1226</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>27564</b>
3 PASA to BPA-P CNX EER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 PASA to BPA-P CNX Repl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 PASA to BPA-P SNX Ret	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 RVSD to BPA-P CNX EER	0	2448	2506	2914	2477	2535	626	626	0	0	0	0	0	0	14132
7 RVSD to BPA-P CNX Repl	2640	390	420	460	400	430	235	235	0	0	0	0	0	0	5210
8 RVSD to BPA-P SNX Ret	0	1424	1458	1695	1441	1475	364	364	0	0	0	0	0	0	8221
9 Total Imports From PSW	2640	4262	4384	5069	4318	4440	1226	1226	0	0	0	0	0	0	27564
<b>Total Imports</b>															
10 Federal Entities	3072	4646	4800	5469	4718	4872	1434	1434	400	416	400	208	224	400	32492
11 Total Imports	3072	4646	4800	5469	4718	4872	1434	1434	400	416	400	208	224	400	32492

Table 2.7.2

Table A-3: Bonneville Power Administration - Power Services Imports

Fiscal Year 2017

BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Canada</b>															
<b>Contracts</b>															
1 BCHP to BPA-P Trty LCALgcyRtn	416	400	416	400	384	432	208	192	416	416	400	208	224	400	4912
<b>2 Total Imports From CAN</b>	<b>416</b>	<b>400</b>	<b>416</b>	<b>400</b>	<b>384</b>	<b>432</b>	<b>208</b>	<b>192</b>	<b>416</b>	<b>416</b>	<b>400</b>	<b>208</b>	<b>224</b>	<b>400</b>	<b>4912</b>
<b>Pacific Southwest</b>															
<b>Contracts</b>															
3 PASA to BPA-P CNX EER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 PASA to BPA-P CNX Repl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 PASA to BPA-P SNX Ret	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 RVSD to BPA-P CNX EER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 RVSD to BPA-P CNX Repl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 RVSD to BPA-P SNX Ret	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>9 Total Imports From PSW</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Total Imports</b>															
10 Federal Entities	416	400	416	400	384	432	208	192	416	416	400	208	224	400	4912
<b>11 Total Imports</b>	<b>416</b>	<b>400</b>	<b>416</b>	<b>400</b>	<b>384</b>	<b>432</b>	<b>208</b>	<b>192</b>	<b>416</b>	<b>416</b>	<b>400</b>	<b>208</b>	<b>224</b>	<b>400</b>	<b>4912</b>

Table 2.7.3

## Table A-3: Bonneville Power Administration - Power Services Imports

Fiscal Year 2016

BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Canada</b>															
<b>Contracts</b>															
<sup>1</sup> BCHP to BPA-P Trty LcAlGcyRtn	312	337	328	344	296	311	152	152	344	304	344	152	160	320	3856
<sup>2</sup> Total Imports From CAN	<b>312</b>	<b>337</b>	<b>328</b>	<b>344</b>	<b>296</b>	<b>311</b>	<b>152</b>	<b>152</b>	<b>344</b>	<b>304</b>	<b>344</b>	<b>152</b>	<b>160</b>	<b>320</b>	<b>3856</b>
<b>Pacific Southwest</b>															
<b>Contracts</b>	<b>5640</b>	<b>16205</b>	<b>16076</b>	<b>16684</b>	<b>15043</b>	<b>16020</b>	<b>4258</b>	<b>4258</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>94183</b>
<sup>3</sup> PASA to BPA-P CNX EER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>4</sup> PASA to BPA-P CNX Repl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>5</sup> PASA to BPA-P SNX Ret	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>6</sup> RVSD to BPA-P CNX EER	0	9354	9121	9587	8625	9092	2215	2215	0	0	0	0	0	0	50208
<sup>7</sup> RVSD to BPA-P CNX Repl	5640	1410	1650	1520	1400	1640	755	755	0	0	0	0	0	0	14770
<sup>8</sup> RVSD to BPA-P SNX Ret	0	5441	5305	5577	5017	5289	1288	1288	0	0	0	0	0	0	29205
<sup>9</sup> Total Imports From PSW	<b>5640</b>	<b>16205</b>	<b>16076</b>	<b>16684</b>	<b>15043</b>	<b>16020</b>	<b>4258</b>	<b>4258</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>94183</b>
<b>Total Imports</b>															
<sup>10</sup> Federal Entities	5952	16542	16404	17028	15339	16331	4410	4410	344	304	344	152	160	320	98039
<sup>11</sup> Total Imports	<b>5952</b>	<b>16542</b>	<b>16404</b>	<b>17028</b>	<b>15339</b>	<b>16331</b>	<b>4410</b>	<b>4410</b>	<b>344</b>	<b>304</b>	<b>344</b>	<b>152</b>	<b>160</b>	<b>320</b>	<b>98039</b>



Table 2.7.3

Table A-3: Bonneville Power Administration - Power Services Imports

Fiscal Year 2017

BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Canada</b>															
<b>Contracts</b>															
1 BCHP to BPA-P Trty LCALgcyRtn	328	321	328	344	288	311	152	168	328	304	344	152	160	320	3848
2 Total Imports From CAN	328	321	328	344	288	311	152	168	328	304	344	152	160	320	3848
<b>Pacific Southwest</b>															
<b>Contracts</b>															
3 PASA to BPA-P CNX EER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 PASA to BPA-P CNX Repl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 PASA to BPA-P SNX Ret	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 RVSD to BPA-P CNX EER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 RVSD to BPA-P CNX Repl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 RVSD to BPA-P SNX Ret	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 Total Imports From PSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total Imports</b>															
10 Federal Entities	328	321	328	344	288	311	152	168	328	304	344	152	160	320	3848
11 Total Imports	328	321	328	344	288	311	152	168	328	304	344	152	160	320	3848

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**Table 2.8.1**  
**Table: Non-Federal CER Deliveries to BPA**  
**Fiscal Year: 2016**  
**BP-2016 Final Rate Proposal** Report Date: **6/9/2015**

S124-RC-20150609-145700

Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<b>Pacific Northwest</b>															
1 CHPD to BPA CEAEA for Rock Island	18.6	17.7	18.0	17.3	17.8	18.0	18.5	18.5	17.9	18.5	17.9	18.5	18.7	18.5	18.1
2 CHPD to BPA CEAEA for Rocky Reach	38.3	36.6	38.0	36.3	37.4	37.8	38.1	38.1	36.9	38.1	36.9	38.1	38.5	38.1	37.6
3 DOPD to BPA CEAEA for Wells	24.4	23.3	24.4	23.5	24.1	24.7	24.3	24.3	23.5	24.3	23.5	24.3	24.5	24.3	24.0
4 GCPD to BPA CEAEA for Priest Rapids	29.6	28.3	30.1	29.1	29.9	30.2	29.5	29.5	28.5	29.5	28.5	29.5	29.8	29.5	29.4
5 GCPD to BPA CEAEA for Wanpum	29.0	27.3	28.5	27.4	28.2	28.5	28.9	28.9	28.0	28.9	28.0	28.9	29.2	28.9	28.4
<b>6 Total Imports From PNW</b>	<b>140</b>	<b>133</b>	<b>139</b>	<b>134</b>	<b>137</b>	<b>139</b>	<b>139</b>	<b>139</b>	<b>135</b>	<b>139</b>	<b>135</b>	<b>139</b>	<b>141</b>	<b>139</b>	<b>137</b>
<b>Total Imports</b>															
7 Federal Entities	140	133	139	134	137	139	139	139	135	139	135	139	141	139	137
<b>8 Total Imports</b>	<b>140</b>	<b>133</b>	<b>139</b>	<b>134</b>	<b>137</b>	<b>139</b>	<b>139</b>	<b>139</b>	<b>135</b>	<b>139</b>	<b>135</b>	<b>139</b>	<b>141</b>	<b>139</b>	<b>137</b>

**Table 2.8.1**  
**Table: Non-Federal CER Deliveries to BPA**  
**Fiscal Year: 2017**  
**BP-2016 Final Rate Proposal** Report Date: **6/9/2015**

S124-RC-20150609-145700

Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<b>Pacific Northwest</b>															
1 CHPD to BPA CEAEA for Rock Island	17.9	18.0	18.0	17.3	17.7	18.0	18.5	17.1	18.6	18.5	17.9	18.5	18.7	18.5	18.1
2 CHPD to BPA CEAEA for Rocky Reach	36.9	37.6	37.7	36.3	37.1	37.8	38.1	35.2	38.3	38.1	36.9	38.1	38.5	38.1	37.5
3 DOPD to BPA CEAEA for Wells	23.5	24.2	24.4	23.5	24.0	24.2	24.3	22.4	24.4	24.3	23.5	24.3	24.5	24.3	24.0
4 GCPD to BPA CEAEA for Priest Rapids	28.5	29.4	29.6	29.0	29.7	30.2	29.5	27.2	29.6	29.5	28.5	29.5	29.8	29.5	29.3
5 GCPD to BPA CEAEA for Wanpum	27.6	28.3	28.5	27.4	28.0	28.5	28.3	26.1	28.5	28.3	27.4	28.3	28.6	28.3	28.0
<b>6 Total Imports From PNW</b>	<b>134</b>	<b>138</b>	<b>138</b>	<b>134</b>	<b>137</b>	<b>139</b>	<b>139</b>	<b>128</b>	<b>139</b>	<b>139</b>	<b>134</b>	<b>139</b>	<b>140</b>	<b>139</b>	<b>137</b>
<b>Total Imports</b>															
7 Federal Entities	134	138	138	134	137	139	139	128	139	139	134	139	140	139	137
<b>8 Total Imports</b>	<b>134</b>	<b>138</b>	<b>138</b>	<b>134</b>	<b>137</b>	<b>139</b>	<b>139</b>	<b>128</b>	<b>139</b>	<b>139</b>	<b>134</b>	<b>139</b>	<b>140</b>	<b>139</b>	<b>137</b>

**Table 2.8.2**  
**Table: Non-Federal CER Deliveries to BPA**  
**Fiscal Year: 2016**  
**BP-2016 Final Rate Proposal** Report Date: **6/9/2015**

S124-RC-20150609-145700

HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Pacific Northwest</b>															
1 CHPD to BPA CEAEA for Rock Island	13824	12240	12896	12400	12400	13392	6656	6656	12800	13312	12800	6656	7168	12800	156000
2 CHPD to BPA CEAEA for Rocky Reach	28512	25344	27264	26000	26000	28080	13728	13728	26400	27456	26400	13728	14784	26400	323824
3 DOPD to BPA CEAEA for Wells	18144	16128	17472	16800	16800	18337	8736	8736	16800	17472	16800	8736	9408	16800	207169
4 GCPD to BPA CEAEA for Priest Rapids	22032	19584	21567	20800	20800	22464	10608	10608	20400	21216	20400	10608	11424	20400	252911
5 GCPD to BPA CEAEA for Wanpum	21600	18923	20384	19600	19600	21168	10400	10400	20000	20800	20000	10400	11200	20000	244475
<b>6 Total Imports From PNW</b>	<b>104112</b>	<b>92219</b>	<b>99583</b>	<b>95600</b>	<b>95600</b>	<b>103441</b>	<b>50128</b>	<b>50128</b>	<b>96400</b>	<b>100256</b>	<b>96400</b>	<b>50128</b>	<b>53984</b>	<b>96400</b>	<b>1184379</b>
<b>Total Imports</b>															
7 Federal Entities	104112	92219	99583	95600	95600	103441	50128	50128	96400	100256	96400	50128	53984	96400	1184379
<b>8 Total Imports</b>	<b>104112</b>	<b>92219</b>	<b>99583</b>	<b>95600</b>	<b>95600</b>	<b>103441</b>	<b>50128</b>	<b>50128</b>	<b>96400</b>	<b>100256</b>	<b>96400</b>	<b>50128</b>	<b>53984</b>	<b>96400</b>	<b>1184379</b>

**Table 2.8.2**  
**Table: Non-Federal CER Deliveries to BPA**  
**Fiscal Year: 2017**  
**BP-2016 Final Rate Proposal** Report Date: **6/9/2015**

S124-RC-20150609-145700

HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Pacific Northwest</b>															
1 CHPD to BPA CEAEA for Rock Island	13312	12482	12896	12400	11904	13392	6656	6144	13312	13312	12800	6656	7168	12800	155234
2 CHPD to BPA CEAEA for Rocky Reach	27456	26089	27040	26000	24960	28080	13728	12672	27456	27456	26400	13728	14784	26400	322249
3 DOPD to BPA CEAEA for Wells	17472	16800	17472	16800	16128	17992	8736	8064	17472	17472	16800	8736	9408	16800	206152
4 GCPD to BPA CEAEA for Priest Rapids	21216	20400	21216	20773	19968	22464	10608	9792	21216	21216	20400	10608	11424	20400	251701
5 GCPD to BPA CEAEA for Wanpum	20506	19600	20384	19600	18816	21168	10192	9408	20384	20384	19600	10192	10976	19600	240810
<b>6 Total Imports From PNW</b>	<b>99962</b>	<b>95371</b>	<b>99008</b>	<b>95573</b>	<b>91776</b>	<b>103096</b>	<b>49920</b>	<b>46080</b>	<b>99840</b>	<b>99840</b>	<b>96000</b>	<b>49920</b>	<b>53760</b>	<b>96000</b>	<b>1176146</b>
<b>Total Imports</b>															
7 Federal Entities	99962	95371	99008	95573	91776	103096	49920	46080	99840	99840	96000	49920	53760	96000	1176146
<b>8 Total Imports</b>	<b>99962</b>	<b>95371</b>	<b>99008</b>	<b>95573</b>	<b>91776</b>	<b>103096</b>	<b>49920</b>	<b>46080</b>	<b>99840</b>	<b>99840</b>	<b>96000</b>	<b>49920</b>	<b>53760</b>	<b>96000</b>	<b>1176146</b>

**Table 2.8.3**  
**Table: Non-Federal CER Deliveries to BPA**  
**Fiscal Year: 2016**  
**BP-2016 Final Rate Proposal** Report Date: **6/9/2015**

S124-RC-20150609-145700

LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Pacific Northwest</b>															
1 CHPD to BPA CEAEA for Rock Island	0	496	496	496	0	0	0	0	512	0	512	0	0	512	3024
2 CHPD to BPA CEAEA for Rocky Reach	0	1056	1040	1040	0	0	0	0	1056	0	1056	0	0	1056	6304
3 DOPD to BPA CEAEA for Wells	0	672	672	672	0	0	0	0	672	0	672	0	0	672	4032
4 GCPD to BPA CEAEA for Priest Rapids	0	816	832	832	0	0	0	0	816	0	816	0	0	816	4928
5 GCPD to BPA CEAEA for Wanpum	0	784	784	784	0	0	0	0	800	0	800	0	0	800	4752
<b>6 Total Imports From PNW</b>	<b>0</b>	<b>3824</b>	<b>3824</b>	<b>3824</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3856</b>	<b>0</b>	<b>3856</b>	<b>0</b>	<b>0</b>	<b>3856</b>	<b>23040</b>
<b>Total Imports</b>															
7 Federal Entities	0	3824	3824	3824	0	0	0	0	3856	0	3856	0	0	3856	23040
<b>8 Total Imports</b>	<b>0</b>	<b>3824</b>	<b>3824</b>	<b>3824</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3856</b>	<b>0</b>	<b>3856</b>	<b>0</b>	<b>0</b>	<b>3856</b>	<b>23040</b>



**Table 2.8.3**  
**Table: Non-Federal CER Deliveries to BPA**  
**Fiscal Year: 2017**  
**BP-2016 Final Rate Proposal** Report Date: **6/9/2015**

S124-RC-20150609-145700

LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Pacific Northwest</b>															
1 CHPD to BPA CEAEA for Rock Island	0	496	496	496	0	0	0	0	512	0	512	0	0	512	3024
2 CHPD to BPA CEAEA for Rocky Reach	0	1040	1040	1040	0	0	0	0	1056	0	1056	0	0	1056	6288
3 DOPD to BPA CEAEA for Wells	0	672	672	672	0	0	0	0	672	0	672	0	0	672	4032
4 GCPD to BPA CEAEA for Priest Rapids	0	816	816	816	0	0	0	0	816	0	816	0	0	816	4896
5 GCPD to BPA CEAEA for Wanpum	0	784	784	784	0	0	0	0	784	0	784	0	0	784	4704
<b>6 Total Imports From PNW</b>	<b>0</b>	<b>3808</b>	<b>3808</b>	<b>3808</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3840</b>	<b>0</b>	<b>3840</b>	<b>0</b>	<b>0</b>	<b>3840</b>	<b>22943</b>
<b>Total Imports</b>															
7 Federal Entities	0	3808	3808	3808	0	0	0	0	3840	0	3840	0	0	3840	22943
<b>8 Total Imports</b>	<b>0</b>	<b>3808</b>	<b>3808</b>	<b>3808</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3840</b>	<b>0</b>	<b>3840</b>	<b>0</b>	<b>0</b>	<b>3840</b>	<b>22943</b>

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Table 2.9.1

## Table A-4: Bonneville Power Administration - Power Services: Intra-Regional Transfers

Fiscal Year 2016

BP-2016 Final Rate Proposal Report Date: 6/9/2015

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Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<b>Intra-Regional Transfers</b>															
<b>Contracts</b>	<b>39.4</b>	<b>257</b>	<b>249</b>	<b>253</b>	<b>238</b>	<b>151</b>	<b>161</b>	<b>161</b>	<b>52.2</b>	<b>63.7</b>	<b>55.7</b>	<b>57.4</b>	<b>57.3</b>	<b>43.6</b>	<b>135</b>
1 BPA-P to AVWP Setl WNP3 Del	0	109	109	109	105	53.9	53.8	53.8	0	0	0	0	0	0	44.7
2 BPA-P to BPA-T Ops IntrlAgmt	9.44	9.44	9.44	9.44	9.44	9.44	9.44	9.44	9.44	9.44	9.44	9.44	9.44	9.44	9.44
3 BPA-P to PPL NSP RIn	4.41	5.27	3.66	3.22	2.66	2.25	4.70	4.70	5.05	4.97	6.35	5.33	5.33	4.26	4.35
4 BPA-P to PPL SNX SprgDel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 BPA-P to PPL SNX SumrDel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 BPA-P to PSE Ops UBkr Repl	0	3.74	3.92	3.77	4.03	0	0	0	0	0	0	0	0	0	1.28
7 BPA-P to PSE Setl WNP3 Del	0	109	109	109	105	53.9	53.8	53.8	0	0	0	0	0	0	44.7
8 Other Entities to BPA-P	20.4	17.0	11.0	16.1	8.96	26.5	34.5	34.5	32.9	42.8	34.6	38.5	38.5	25.4	25.8
9 PPL to BPA-P NSP SOut	5.11	3.78	3.22	2.49	2.40	4.56	5.22	5.22	4.81	6.56	5.33	4.13	4.12	4.56	4.35
10 PPL to BPA-P SNX SprgRtn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 PPL to BPA-P SNX SumrRtn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>12 Total Intra-Regional Transfers</b>	<b>39.4</b>	<b>257</b>	<b>249</b>	<b>253</b>	<b>238</b>	<b>151</b>	<b>161</b>	<b>161</b>	<b>52.2</b>	<b>63.7</b>	<b>55.7</b>	<b>57.4</b>	<b>57.3</b>	<b>43.6</b>	<b>135</b>
<b>Intra-Regional Contracts Out</b>															
13 Federal Entities	13.8	236	235	234	227	119	122	122	14.5	14.4	15.8	14.8	14.8	13.7	104
14 Investor Owned Utilities	25.5	20.7	14.3	18.6	11.4	31.1	39.7	39.7	37.7	49.3	39.9	42.6	42.6	29.9	30.1
<b>15 Total Regional Contracts Out</b>	<b>39.4</b>	<b>257</b>	<b>249</b>	<b>253</b>	<b>238</b>	<b>151</b>	<b>161</b>	<b>161</b>	<b>52.2</b>	<b>63.7</b>	<b>55.7</b>	<b>57.4</b>	<b>57.3</b>	<b>43.6</b>	<b>135</b>
<b>Intra-Regional Contracts In</b>															
16 Federal Entities	35.0	30.2	23.7	28.0	20.8	40.5	49.1	49.1	47.2	58.8	49.3	52.0	52.0	39.4	39.5
17 Investor Owned Utilities	4.41	227	225	225	217	110	112	112	5.05	4.97	6.35	5.33	5.33	4.26	95.0
<b>18 Total Regional Contracts In</b>	<b>39.4</b>	<b>257</b>	<b>249</b>	<b>253</b>	<b>238</b>	<b>151</b>	<b>161</b>	<b>161</b>	<b>52.2</b>	<b>63.7</b>	<b>55.7</b>	<b>57.4</b>	<b>57.3</b>	<b>43.6</b>	<b>135</b>

Table 2.9.1

## Table A-4: Bonneville Power Administration - Power Services: Intra-Regional Transfers

Fiscal Year 2017

BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<b>Intra-Regional Transfers</b>															
<b>Contracts</b>	<b>39.4</b>	<b>257</b>	<b>249</b>	<b>253</b>	<b>246</b>	<b>150</b>	<b>162</b>	<b>161</b>	<b>52.2</b>	<b>63.7</b>	<b>55.7</b>	<b>57.4</b>	<b>57.3</b>	<b>43.6</b>	<b>135</b>
1 BPA-P to AVWP Setl WNP3 Del	0	109	109	109	109	53.9	53.8	53.8	0	0	0	0	0	0	44.8
2 BPA-P to BPA-T Ops IntrlAgmt	9.44	9.44	9.44	9.44	9.44	9.44	9.44	9.44	9.44	9.44	9.44	9.44	9.44	9.44	9.44
3 BPA-P to PPL NSP RIn	4.41	5.31	3.68	3.22	2.76	2.17	4.72	4.69	5.06	4.97	6.35	5.33	5.33	4.26	4.36
4 BPA-P to PPL SNX SprgDel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 BPA-P to PPL SNX SumrDel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 BPA-P to PSE Ops UBkr Repl	0	3.89	3.92	3.77	4.01	0	0	0	0	0	0	0	0	0	1.28
7 BPA-P to PSE Setl WNP3 Del	0	109	109	109	109	53.9	53.8	53.8	0	0	0	0	0	0	44.8
8 Other Entities to BPA-P	20.4	16.9	11.0	16.1	8.95	26.5	34.5	34.3	32.9	42.8	34.6	38.5	38.5	25.4	25.8
9 PPL to BPA-P NSP SOut	5.15	3.80	3.22	2.49	2.40	4.56	5.25	5.22	4.81	6.56	5.33	4.13	4.12	4.56	4.36
10 PPL to BPA-P SNX SprgRtn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 PPL to BPA-P SNX SumrRtn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>12 Total Intra-Regional Transfers</b>	<b>39.4</b>	<b>257</b>	<b>249</b>	<b>253</b>	<b>246</b>	<b>150</b>	<b>162</b>	<b>161</b>	<b>52.2</b>	<b>63.7</b>	<b>55.7</b>	<b>57.4</b>	<b>57.3</b>	<b>43.6</b>	<b>135</b>
<b>Intra-Regional Contracts Out</b>															
13 Federal Entities	13.8	236	235	234	234	119	122	122	14.5	14.4	15.8	14.8	14.8	13.7	105
14 Investor Owned Utilities	25.6	20.7	14.3	18.6	11.4	31.1	39.7	39.5	37.7	49.3	39.9	42.6	42.6	29.9	30.2
<b>15 Total Regional Contracts Out</b>	<b>39.4</b>	<b>257</b>	<b>249</b>	<b>253</b>	<b>246</b>	<b>150</b>	<b>162</b>	<b>161</b>	<b>52.2</b>	<b>63.7</b>	<b>55.7</b>	<b>57.4</b>	<b>57.3</b>	<b>43.6</b>	<b>135</b>
<b>Intra-Regional Contracts In</b>															
16 Federal Entities	35.0	30.1	23.7	28.0	20.8	40.5	49.2	48.9	47.1	58.8	49.3	52.0	52.0	39.4	39.6
17 Investor Owned Utilities	4.41	227	225	225	225	110	112	112	5.06	4.97	6.35	5.33	5.33	4.26	95.3
<b>18 Total Regional Contracts In</b>	<b>39.4</b>	<b>257</b>	<b>249</b>	<b>253</b>	<b>246</b>	<b>150</b>	<b>162</b>	<b>161</b>	<b>52.2</b>	<b>63.7</b>	<b>55.7</b>	<b>57.4</b>	<b>57.3</b>	<b>43.6</b>	<b>135</b>

Table 2.9.2

## Table A-4: Bonneville Power Administration - Power Services: Intra-Regional Transfers

Fiscal Year 2016

BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Intra-Regional Transfers</b>															
<b>Contracts</b>	<b>16678</b>	<b>96183</b>	<b>100327</b>	<b>103221</b>	<b>93115</b>	<b>62556</b>	<b>33369</b>	<b>33369</b>	<b>20716</b>	<b>25252</b>	<b>21513</b>	<b>11586</b>	<b>12477</b>	<b>17597</b>	<b>647957</b>
1 BPA-P to AVWP Setl WNP3 Del	0	40110	43485	43485	40140	21726	10847	10847	0	0	0	0	0	0	210639
2 BPA-P to BPA-T Ops IntrlAgmt	4077	3624	3926	3775	3775	4077	1963	1963	3775	3926	3775	1963	2114	3775	46506
3 BPA-P to PPL NSP RIn	1840	2117	1344	1248	1200	840	993	993	2205	1720	2746	1098	1182	1550	21077
4 BPA-P to PPL SNX SprgDel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 BPA-P to PPL SNX SumrDel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 BPA-P to PSE Ops UBkr Repl	0	2688	2912	2800	2800	0	0	0	0	0	0	0	0	0	11200
7 BPA-P to PSE Setl WNP3 Del	0	40110	43485	43485	40140	21726	10847	10847	0	0	0	0	0	0	210639
8 Other Entities to BPA-P	8644	6190	3927	7228	4220	12200	7617	7617	13016	16860	12712	7779	8377	10432	126819
9 PPL to BPA-P NSP SOut	2117	1344	1248	1200	840	1987	1102	1102	1720	2746	2280	746	804	1840	21077
10 PPL to BPA-P SNX SprgRtn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 PPL to BPA-P SNX SumrRtn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>12 Total Intra-Regional Transfers</b>	<b>16678</b>	<b>96183</b>	<b>100327</b>	<b>103221</b>	<b>93115</b>	<b>62556</b>	<b>33369</b>	<b>33369</b>	<b>20716</b>	<b>25252</b>	<b>21513</b>	<b>11586</b>	<b>12477</b>	<b>17597</b>	<b>647957</b>
<b>Intra-Regional Contracts Out</b>															
13 Federal Entities	5917	88649	95152	94793	88055	48369	24649	24649	5980	5646	6521	3061	3296	5325	500061
14 Investor Owned Utilities	10761	7534	5175	8428	5060	14187	8719	8719	14736	19606	14992	8525	9181	12272	147896
<b>15 Total Regional Contracts Out</b>	<b>16678</b>	<b>96183</b>	<b>100327</b>	<b>103221</b>	<b>93115</b>	<b>62556</b>	<b>33369</b>	<b>33369</b>	<b>20716</b>	<b>25252</b>	<b>21513</b>	<b>11586</b>	<b>12477</b>	<b>17597</b>	<b>647957</b>
<b>Intra-Regional Contracts In</b>															
16 Federal Entities	14838	11158	9101	12203	8835	18264	10682	10682	18511	23532	18767	10488	11295	16047	194402
17 Investor Owned Utilities	1840	85025	91226	91018	84280	44292	22687	22687	2205	1720	2746	1098	1182	1550	453555
<b>18 Total Regional Contracts In</b>	<b>16678</b>	<b>96183</b>	<b>100327</b>	<b>103221</b>	<b>93115</b>	<b>62556</b>	<b>33369</b>	<b>33369</b>	<b>20716</b>	<b>25252</b>	<b>21513</b>	<b>11586</b>	<b>12477</b>	<b>17597</b>	<b>647957</b>

Table 2.9.2

## Table A-4: Bonneville Power Administration - Power Services: Intra-Regional Transfers

Fiscal Year 2017

BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Intra-Regional Transfers</b>															
<b>Contracts</b>	<b>16212</b>	<b>96725</b>	<b>100343</b>	<b>103221</b>	<b>92649</b>	<b>62522</b>	<b>34327</b>	<b>31686</b>	<b>21384</b>	<b>25238</b>	<b>21513</b>	<b>11586</b>	<b>12477</b>	<b>17597</b>	<b>647480</b>
1 BPA-P to AVWP Setl WNP3 Del	0	40110	43485	43485	40140	21726	11280	10413	0	0	0	0	0	0	210639
2 BPA-P to BPA-T Ops IntrlAgmt	3926	3775	3926	3775	3624	4077	1963	1812	3926	3926	3775	1963	2114	3775	46355
3 BPA-P to PPL NSP RIn	1840	2122	1360	1248	1200	806	1033	954	2216	1706	2746	1098	1182	1550	21061
4 BPA-P to PPL SNX SprgDel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 BPA-P to PPL SNX SumrDel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 BPA-P to PSE Ops UBkr Repl	0	2800	2912	2800	2688	0	0	0	0	0	0	0	0	0	11200
7 BPA-P to PSE Setl WNP3 Del	0	40110	43485	43485	40140	21726	11280	10413	0	0	0	0	0	0	210639
8 Other Entities to BPA-P	8324	6448	3927	7228	4051	12200	7618	7032	13537	16860	12712	7779	8377	10432	126525
9 PPL to BPA-P NSP SOut	2122	1360	1248	1200	806	1987	1152	1064	1706	2746	2280	746	804	1840	21061
10 PPL to BPA-P SNX SprgRtn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 PPL to BPA-P SNX SumrRtn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>12 Total Intra-Regional Transfers</b>	<b>16212</b>	<b>96725</b>	<b>100343</b>	<b>103221</b>	<b>92649</b>	<b>62522</b>	<b>34327</b>	<b>31686</b>	<b>21384</b>	<b>25238</b>	<b>21513</b>	<b>11586</b>	<b>12477</b>	<b>17597</b>	<b>647480</b>
<b>Intra-Regional Contracts Out</b>															
13 Federal Entities	5766	88917	95167	94793	87792	48335	25557	23591	6142	5632	6521	3061	3296	5325	499894
14 Investor Owned Utilities	10446	7808	5175	8428	4857	14187	8770	8095	15243	19606	14992	8525	9181	12272	147586
<b>15 Total Regional Contracts Out</b>	<b>16212</b>	<b>96725</b>	<b>100343</b>	<b>103221</b>	<b>92649</b>	<b>62522</b>	<b>34327</b>	<b>31686</b>	<b>21384</b>	<b>25238</b>	<b>21513</b>	<b>11586</b>	<b>12477</b>	<b>17597</b>	<b>647480</b>
<b>Intra-Regional Contracts In</b>															
16 Federal Entities	14372	11583	9101	12203	8481	18264	10733	9907	19168	23532	18767	10488	11295	16047	193941
17 Investor Owned Utilities	1840	85142	91242	91018	84168	44258	23594	21779	2216	1706	2746	1098	1182	1550	453539
<b>18 Total Regional Contracts In</b>	<b>16212</b>	<b>96725</b>	<b>100343</b>	<b>103221</b>	<b>92649</b>	<b>62522</b>	<b>34327</b>	<b>31686</b>	<b>21384</b>	<b>25238</b>	<b>21513</b>	<b>11586</b>	<b>12477</b>	<b>17597</b>	<b>647480</b>

Table 2.9.3

## Table A-4: Bonneville Power Administration - Power Services: Intra-Regional Transfers

Fiscal Year 2016

BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Intra-Regional Transfers</b>															
<b>Contracts</b>	<b>12606</b>	<b>88964</b>	<b>85064</b>	<b>84950</b>	<b>72502</b>	<b>49266</b>	<b>24763</b>	<b>24763</b>	<b>18127</b>	<b>20641</b>	<b>19905</b>	<b>9066</b>	<b>9543</b>	<b>13821</b>	<b>533982</b>
1 BPA-P to AVWP Setl WNP3 Del	0	38339	37569	37569	33100	18290	8531	8531	0	0	0	0	0	0	181930
2 BPA-P to BPA-T Ops IntrlAgmt	2944	3180	3095	3246	2793	2935	1434	1434	3246	2869	3246	1434	1510	3020	36389
3 BPA-P to PPL NSP RIn	1440	1685	1382	1148	654	829	700	700	1550	1858	1976	821	865	1518	17126
4 BPA-P to PPL SNX SprgDel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 BPA-P to PPL SNX SumrDel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 BPA-P to PSE Ops UBkr Repl	0	7.08	6.89	6.88	7.10	0	0	0	0	0	0	0	0	0	27.9
7 BPA-P to PSE Setl WNP3 Del	0	38339	37569	37569	33100	18290	8531	8531	0	0	0	0	0	0	181930
8 Other Entities to BPA-P	6536	6031	4294	4758	2019	7522	4791	4791	11472	13938	12996	6071	6390	7843	99453
9 PPL to BPA-P NSP SOut	1685	1382	1148	654	829	1400	775	775	1858	1976	1686	739	778	1440	17126
10 PPL to BPA-P SNX SprgRtn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 PPL to BPA-P SNX SumrRtn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>12 Total Intra-Regional Transfers</b>	<b>12606</b>	<b>88964</b>	<b>85064</b>	<b>84950</b>	<b>72502</b>	<b>49266</b>	<b>24763</b>	<b>24763</b>	<b>18127</b>	<b>20641</b>	<b>19905</b>	<b>9066</b>	<b>9543</b>	<b>13821</b>	<b>533982</b>
<b>Intra-Regional Contracts Out</b>															
13 Federal Entities	4384	81551	79622	79539	69654	40344	19197	19197	4796	4727	5222	2256	2375	4538	417403
14 Investor Owned Utilities	8222	7413	5442	5411	2848	8923	5566	5566	13330	15914	14682	6810	7169	9283	116579
<b>15 Total Regional Contracts Out</b>	<b>12606</b>	<b>88964</b>	<b>85064</b>	<b>84950</b>	<b>72502</b>	<b>49266</b>	<b>24763</b>	<b>24763</b>	<b>18127</b>	<b>20641</b>	<b>19905</b>	<b>9066</b>	<b>9543</b>	<b>13821</b>	<b>533982</b>
<b>Intra-Regional Contracts In</b>															
16 Federal Entities	11166	10594	8537	8658	5641	11857	7001	7001	16577	18783	17929	8245	8679	12303	152969
17 Investor Owned Utilities	1440	78370	76527	76293	66861	37409	17763	17763	1550	1858	1976	821	865	1518	381014
<b>18 Total Regional Contracts In</b>	<b>12606</b>	<b>88964</b>	<b>85064</b>	<b>84950</b>	<b>72502</b>	<b>49266</b>	<b>24763</b>	<b>24763</b>	<b>18127</b>	<b>20641</b>	<b>19905</b>	<b>9066</b>	<b>9543</b>	<b>13821</b>	<b>533982</b>



Table 2.9.3

## Table A-4: Bonneville Power Administration - Power Services: Intra-Regional Transfers

Fiscal Year 2017

BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Intra-Regional Transfers</b>															
<b>Contracts</b>	<b>13113</b>	<b>88544</b>	<b>85062</b>	<b>84950</b>	<b>72349</b>	<b>49243</b>	<b>23843</b>	<b>26353</b>	<b>17454</b>	<b>20653</b>	<b>19905</b>	<b>9066</b>	<b>9543</b>	<b>13821</b>	<b>533901</b>
1 BPA-P to AVWP Setl WNP3 Del	0	38339	37569	37569	33100	18290	8105	8958	0	0	0	0	0	0	181930
2 BPA-P to BPA-T Ops IntrlAgmt	3095	3029	3095	3246	2718	2935	1434	1585	3095	2869	3246	1434	1510	3020	36314
3 BPA-P to PPL NSP RIn	1440	1706	1380	1148	654	806	665	735	1550	1870	1976	821	865	1518	17134
4 BPA-P to PPL SNX SprgDel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 BPA-P to PPL SNX SumrDel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 BPA-P to PSE Ops UBkr Repl	0	7.06	6.89	6.88	6.91	0	0	0	0	0	0	0	0	0	27.7
7 BPA-P to PSE Setl WNP3 Del	0	38339	37569	37569	33100	18290	8105	8958	0	0	0	0	0	0	181930
8 Other Entities to BPA-P	6872	5744	4294	4758	1964	7522	4798	5303	10939	13938	12996	6071	6390	7843	99431
9 PPL to BPA-P NSP SOut	1706	1380	1148	654	806	1400	736	814	1870	1976	1686	739	778	1440	17134
10 PPL to BPA-P SNX SprgRtn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 PPL to BPA-P SNX SumrRtn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>12 Total Intra-Regional Transfers</b>	<b>13113</b>	<b>88544</b>	<b>85062</b>	<b>84950</b>	<b>72349</b>	<b>49243</b>	<b>23843</b>	<b>26353</b>	<b>17454</b>	<b>20653</b>	<b>19905</b>	<b>9066</b>	<b>9543</b>	<b>13821</b>	<b>533901</b>
<b>Intra-Regional Contracts Out</b>															
13 Federal Entities	4535	81420	79620	79539	69579	40321	18309	20237	4645	4739	5222	2256	2375	4538	417336
14 Investor Owned Utilities	8578	7124	5442	5411	2770	8923	5534	6117	12809	15914	14682	6810	7169	9283	116565
<b>15 Total Regional Contracts Out</b>	<b>13113</b>	<b>88544</b>	<b>85062</b>	<b>84950</b>	<b>72349</b>	<b>49243</b>	<b>23843</b>	<b>26353</b>	<b>17454</b>	<b>20653</b>	<b>19905</b>	<b>9066</b>	<b>9543</b>	<b>13821</b>	<b>533901</b>
<b>Intra-Regional Contracts In</b>															
16 Federal Entities	11673	10153	8537	8658	5488	11857	6968	7702	15904	18783	17929	8245	8679	12303	152879
17 Investor Owned Utilities	1440	78391	76525	76293	66861	37386	16875	18651	1550	1870	1976	821	865	1518	381022
<b>18 Total Regional Contracts In</b>	<b>13113</b>	<b>88544</b>	<b>85062</b>	<b>84950</b>	<b>72349</b>	<b>49243</b>	<b>23843</b>	<b>26353</b>	<b>17454</b>	<b>20653</b>	<b>19905</b>	<b>9066</b>	<b>9543</b>	<b>13821</b>	<b>533901</b>

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2.10 Total PNW Regional Hydro Resources By Water Year .....95

Table 2.10.1 Total Regional Hydro Resources by Water Year - FY 2016 .....96

Table 2.10.2 Total Regional Hydro Resources by Water Year - FY 2017 .....99

**Table 2.10.1**  
**Total Regional Hydro Resources by Water Year**  
**Fiscal Year 2016**  
**BP-2016 Final Rate Proposal Report Date: 6/9/2015**

S124-RC-20150609-145700

Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
1929	11,131.7	13,120.5	13,587.2	12,226.0	11,592.4	11,251.4	10,010.6	13,743.5	14,551.3	16,064.5	11,418.7	11,891.0	10,773.6	10,074.7	12,350.4
1930	10,523.0	12,621.4	13,283.3	10,326.2	12,385.1	11,029.7	11,423.2	15,472.8	14,466.5	11,914.8	13,176.8	12,470.4	10,755.3	9,718.8	12,039.5
1931	10,563.6	12,940.4	13,261.8	10,810.5	10,145.0	10,566.8	9,055.9	9,011.3	15,958.9	11,849.5	13,130.5	11,423.1	9,646.6	9,232.4	11,515.7
1932	10,442.5	12,192.5	13,285.2	11,432.9	10,051.3	14,150.6	18,003.8	21,022.8	21,397.4	21,844.5	16,787.7	12,861.3	12,898.7	10,403.6	14,540.2
1933	10,964.3	14,251.5	14,684.0	17,839.9	17,419.3	15,836.5	13,498.5	15,620.8	18,543.9	23,702.0	21,532.2	16,441.6	14,340.7	10,821.9	16,291.4
1934	12,878.4	19,355.8	22,222.0	23,782.1	21,353.6	20,224.0	20,899.3	20,720.8	20,025.8	18,494.9	14,163.4	11,566.8	10,388.0	9,238.4	17,781.6
1935	10,946.9	13,778.5	13,267.2	18,086.4	16,632.1	14,910.8	12,681.4	15,330.9	17,627.7	17,926.3	16,828.2	14,583.5	11,461.9	9,553.3	14,710.5
1936	10,421.5	12,570.3	13,208.4	10,787.9	11,699.6	11,694.3	12,006.1	18,527.4	21,168.9	21,155.3	14,156.8	11,946.7	10,655.1	9,432.9	13,569.2
1937	10,192.3	12,652.4	13,441.9	10,577.5	10,581.2	10,804.6	10,880.3	9,872.3	15,763.2	15,462.4	11,947.0	12,846.1	11,071.4	9,728.6	11,961.4
1938	10,823.7	13,618.3	14,692.2	16,824.6	16,197.7	16,401.5	16,533.7	22,031.9	21,459.3	19,213.3	16,514.9	12,216.6	10,650.1	10,229.8	15,551.4
1939	10,944.5	12,567.6	13,468.8	14,738.8	13,152.5	12,466.7	13,781.6	18,070.2	18,363.9	14,662.3	13,325.9	12,128.0	10,588.3	9,734.9	13,393.6
1940	11,066.5	13,729.8	13,813.3	13,793.7	12,663.2	16,631.2	14,177.6	18,354.5	18,630.5	14,180.8	12,384.4	10,873.3	9,757.7	9,517.9	13,587.7
1941	10,467.9	12,779.4	13,161.6	12,398.2	12,045.2	11,835.7	9,292.9	12,161.1	15,795.1	14,118.1	13,264.8	11,322.7	10,262.3	10,277.7	12,309.0
1942	10,763.7	13,879.6	15,900.8	15,546.0	12,763.7	12,128.5	11,641.8	16,393.1	17,444.2	19,907.9	18,018.7	13,495.0	12,213.5	11,182.8	14,539.8
1943	10,439.9	12,358.7	14,558.2	18,699.7	17,469.2	16,208.1	21,917.6	22,479.6	19,921.0	23,666.0	21,802.6	13,649.7	12,149.3	10,068.9	16,680.0
1944	10,859.0	13,235.6	13,802.3	12,405.9	12,195.5	10,654.7	10,047.1	13,370.2	13,391.5	10,980.9	12,192.1	11,328.9	9,792.5	9,384.4	11,781.8
1945	10,529.5	12,410.1	13,194.3	11,364.8	11,551.9	11,023.6	10,023.6	9,912.5	18,783.6	19,940.5	11,891.6	12,604.7	10,430.1	9,135.3	12,609.4
1946	10,754.5	13,912.9	14,869.0	16,631.2	14,593.1	16,989.3	17,972.0	22,112.5	22,224.3	19,254.1	18,702.2	14,729.4	13,711.4	10,634.5	16,076.5
1947	10,793.2	14,807.2	19,751.6	20,263.3	19,263.3	18,174.6	16,377.1	17,992.9	20,340.2	19,691.4	17,112.3	14,394.1	13,501.0	10,277.6	16,799.9
1948	15,772.3	17,605.3	16,474.0	19,846.9	16,192.6	16,045.4	14,616.2	19,693.5	23,309.3	23,745.2	19,794.2	17,135.6	15,673.6	11,425.9	17,824.9
1949	11,436.1	14,387.2	13,920.2	15,760.7	13,332.7	18,174.5	15,880.1	21,467.5	22,353.9	20,859.9	12,903.8	11,398.7	10,052.3	9,364.5	15,158.2
1950	10,965.3	13,542.0	14,369.4	19,719.3	19,111.4	19,866.5	19,071.9	20,093.7	20,905.4	23,843.1	22,672.6	16,179.7	14,563.7	10,999.3	17,574.2
1951	13,410.3	18,906.6	20,647.7	22,986.9	23,134.3	21,003.2	19,959.3	20,952.3	21,948.5	20,134.8	20,159.9	15,311.3	13,145.8	10,822.4	18,976.1
1952	15,021.9	16,318.6	16,944.4	19,039.5	18,141.4	16,900.7	18,249.6	22,779.6	23,302.4	20,870.6	16,896.1	14,374.2	13,241.7	9,449.5	17,266.2
1953	10,518.4	12,718.6	13,582.5	14,256.7	17,323.5	15,421.8	12,446.9	15,499.1	20,685.6	23,780.9	18,617.7	13,746.3	12,706.9	10,591.1	15,380.5
1954	11,344.0	15,184.6	16,038.1	18,730.2	20,392.4	18,280.6	15,751.1	18,048.9	20,837.8	22,279.9	22,777.2	18,198.4	17,569.1	14,635.0	17,933.2
1955	11,659.9	16,604.2	15,466.9	14,719.1	13,365.6	11,777.7	12,013.2	14,044.0	17,743.1	23,615.2	22,156.3	16,865.1	13,832.5	10,226.2	15,479.6
1956	12,665.0	17,944.8	20,047.2	22,189.9	21,427.5	20,227.4	18,763.2	23,144.5	23,389.6	23,982.9	20,627.2	15,944.4	14,800.5	10,861.2	19,134.1
1957	12,129.6	14,489.6	16,369.0	16,690.8	13,655.1	17,239.6	18,130.9	17,413.7	23,500.3	23,650.3	16,160.8	13,913.7	11,357.7	10,084.8	16,205.0
1958	10,801.6	13,388.9	14,268.8	17,675.2	16,606.3	16,205.0	14,551.6	19,261.1	22,571.0	22,367.2	14,693.0	12,242.3	11,352.4	9,835.1	15,585.6
1959	11,076.0	16,148.8	18,750.4	21,172.0	20,077.7	18,506.9	17,663.3	17,436.1	20,494.8	22,309.3	21,287.2	16,503.6	14,134.6	15,329.2	18,158.1
1960	17,580.4	19,685.6	18,010.4	17,633.5	17,007.2	16,157.5	22,523.8	19,943.5	18,677.1	20,978.4	16,789.9	13,877.0	12,116.2	9,888.2	17,211.1
1961	11,123.7	14,586.0	14,435.5	17,922.6	18,030.0	18,189.3	17,510.8	15,774.1	21,051.8	22,379.8	15,836.0	13,856.1	11,574.5	9,766.2	16,044.6
1962	10,685.0	13,702.8	13,912.8	17,058.3	15,565.5	12,443.5	19,143.7	22,578.7	20,673.2	18,806.0	15,449.5	13,602.4	12,511.7	9,755.7	15,153.9
1963	11,993.2	16,649.7	17,881.5	18,435.0	15,948.9	13,335.3	12,130.5	16,381.2	19,075.1	21,410.7	16,157.1	13,305.5	11,565.3	10,808.0	15,694.6
1964	10,863.7	14,122.4	14,366.7	15,269.2	14,277.4	12,886.1	16,312.2	14,722.6	19,422.3	24,171.2	21,903.4	16,489.1	14,983.2	12,071.2	15,884.4

**Table 2.10.1**  
**Total Regional Hydro Resources by Water Year**  
**Fiscal Year 2016**  
**BP-2016 Final Rate Proposal Report Date: 6/9/2015**  
S124-RC-20150609-145700

Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
1965	12,616.1	15,489.0	20,327.3	23,861.1	22,836.6	19,505.9	15,414.7	22,290.6	22,269.9	21,043.6	16,677.2	15,738.4	14,887.2	10,171.5	18,240.6
1966	11,654.7	14,598.9	14,816.4	16,311.4	15,064.9	13,474.8	19,402.7	17,393.0	17,133.9	18,696.0	16,947.9	13,409.5	11,797.4	10,179.2	14,982.3
1967	10,577.7	13,675.7	15,625.8	20,818.9	19,679.4	17,635.7	14,011.2	12,873.4	18,646.0	23,637.6	20,691.4	14,755.5	13,601.0	10,645.5	16,599.4
1968	11,827.5	15,319.1	15,081.0	18,196.9	18,843.8	17,373.3	11,202.8	13,592.7	16,277.1	21,705.2	18,135.2	14,957.4	15,097.4	13,149.9	16,101.3
1969	13,301.0	17,654.6	17,021.5	22,293.5	18,671.6	18,462.1	19,694.6	22,642.3	23,039.0	21,395.9	17,413.9	14,443.7	12,548.2	10,370.5	17,852.5
1970	11,158.6	14,082.5	13,643.8	17,409.6	16,134.8	14,736.7	12,237.0	14,270.8	19,468.4	22,381.7	14,619.9	13,307.9	11,265.9	9,839.3	14,908.8
1971	10,705.6	13,609.4	14,667.3	22,268.4	22,522.9	21,152.6	18,573.0	20,946.5	23,099.1	24,263.5	20,744.7	16,777.5	16,289.3	11,217.5	18,367.3
1972	12,061.9	14,944.6	15,721.4	21,431.8	22,617.3	23,901.6	23,054.5	19,721.6	22,960.4	24,002.1	22,050.3	17,758.5	16,876.9	11,800.7	19,174.7
1973	11,876.9	14,622.0	15,446.9	17,005.3	13,375.0	12,606.0	10,042.2	12,932.1	16,032.5	13,926.4	12,715.8	11,840.9	10,221.2	9,735.6	13,329.1
1974	10,818.3	14,161.8	17,082.1	24,840.5	24,200.2	22,329.5	20,686.4	22,350.6	22,338.8	24,109.5	23,079.9	17,258.8	16,731.4	11,445.3	19,399.6
1975	10,817.1	13,620.2	14,530.2	18,283.8	16,906.1	15,791.0	12,677.0	14,689.3	21,139.9	23,380.7	21,659.8	15,731.0	15,252.2	11,658.7	16,419.0
1976	13,558.9	18,442.3	21,982.5	21,924.4	20,863.6	19,323.7	19,394.5	20,678.6	22,733.9	21,386.0	21,093.7	18,713.4	18,551.3	15,953.5	19,661.8
1977	11,674.3	13,483.1	13,559.5	12,734.6	12,427.2	11,188.2	10,062.9	12,282.8	13,263.7	9,790.8	11,478.0	11,238.5	9,912.3	8,381.8	11,648.5
1978	9,965.2	12,219.6	16,444.4	16,504.0	15,580.8	14,566.9	18,594.2	17,922.5	21,236.8	18,026.4	17,119.3	13,240.3	11,798.3	13,019.8	15,453.0
1979	11,660.9	13,999.7	13,243.1	13,434.6	13,610.5	15,733.1	11,498.4	15,330.3	19,711.9	17,206.2	12,142.0	11,065.7	10,528.3	9,977.4	13,745.1
1980	10,465.8	12,766.3	13,148.5	15,116.6	13,011.0	12,765.9	13,116.9	19,182.7	22,912.7	21,708.7	14,502.7	11,796.1	10,260.4	10,426.9	14,498.0
1981	10,800.9	14,000.1	18,496.6	19,994.7	18,935.0	13,361.3	10,042.5	15,781.9	20,740.6	22,804.9	19,141.0	16,063.5	14,173.6	10,585.4	16,405.8
1982	11,176.7	14,949.1	15,196.4	18,882.9	23,300.0	21,806.1	18,585.0	18,516.7	21,797.2	23,486.0	22,395.2	16,210.2	15,866.0	12,691.3	18,337.8
1983	12,950.5	15,237.7	16,440.0	20,562.0	20,148.4	20,642.6	16,685.8	17,986.1	20,797.5	21,814.6	19,653.6	16,573.2	15,533.3	11,327.9	17,746.2
1984	11,510.0	18,854.4	16,747.6	19,635.7	18,755.9	16,924.3	18,856.3	20,936.3	20,398.6	23,149.8	19,156.0	15,316.4	12,554.0	11,467.8	17,516.9
1985	11,642.9	15,697.4	14,694.0	15,413.6	14,429.8	13,108.8	14,955.2	20,069.1	21,141.7	18,207.3	10,700.7	10,364.3	9,556.6	10,205.5	14,380.8
1986	11,685.5	16,607.3	14,879.0	18,306.0	19,097.8	22,007.6	19,986.0	21,526.2	18,911.5	20,031.1	14,996.4	12,723.6	11,135.5	9,837.8	16,568.2
1987	10,760.3	14,368.5	14,955.6	14,495.1	12,468.7	15,733.2	10,714.8	14,875.2	18,349.8	16,307.2	12,274.9	11,142.9	9,575.5	9,434.1	13,531.9
1988	10,319.7	12,338.9	12,898.6	12,268.2	10,146.2	10,685.5	10,597.9	14,467.3	15,719.0	14,706.8	13,266.1	12,336.1	10,773.0	9,426.8	12,163.2
1989	10,430.1	13,717.3	13,723.1	13,323.7	10,907.3	14,037.7	14,453.2	21,016.7	18,860.7	17,482.4	13,629.3	11,867.5	10,553.2	9,760.1	13,738.1
1990	10,609.4	15,015.3	16,264.0	17,075.0	19,020.4	17,193.8	14,576.8	20,575.9	18,679.2	21,200.0	16,476.0	14,966.5	13,314.2	10,068.7	16,093.1
1991	10,636.9	18,662.7	16,956.1	19,794.0	18,566.5	16,507.3	16,773.4	16,746.1	19,424.2	20,574.4	20,971.1	16,203.0	14,202.8	9,924.9	16,993.0
1992	10,379.5	13,455.5	13,021.0	13,315.0	12,534.7	13,064.6	10,137.0	12,882.4	15,774.6	14,036.9	11,534.0	11,024.9	9,722.6	9,032.7	12,336.8
1993	10,361.7	12,999.2	12,730.7	10,926.5	9,824.6	12,864.3	12,459.8	14,456.9	19,357.9	18,079.2	14,389.4	13,387.9	11,404.8	10,414.1	13,159.3
1994	10,591.8	13,188.9	13,429.3	11,507.4	11,188.0	11,234.0	10,353.7	14,662.0	17,355.7	16,767.4	12,849.2	11,875.2	10,008.8	9,750.5	12,609.9
1995	10,449.5	12,248.0	13,979.9	15,058.8	15,585.0	14,531.2	15,265.9	15,000.8	19,398.5	21,845.0	15,417.4	12,857.8	11,461.0	10,610.9	14,691.6
1996	12,428.8	20,466.4	23,216.7	24,445.3	24,665.7	23,380.1	19,705.5	23,537.1	21,985.9	22,239.4	20,603.9	15,911.1	14,437.6	10,707.0	20,064.9
1997	11,134.7	15,187.5	17,116.9	24,709.1	23,502.7	22,334.3	20,607.7	23,409.2	23,235.6	23,910.0	22,077.2	16,553.4	16,404.9	13,151.3	19,559.1
1998	16,545.2	17,395.7	15,149.6	16,563.7	16,989.3	15,036.7	12,198.4	16,913.9	22,650.4	23,109.9	16,775.6	15,001.8	13,184.3	10,232.2	16,590.0
1999	10,738.4	13,722.7	16,354.1	21,733.5	20,995.1	20,841.6	16,790.9	20,536.8	20,299.4	23,205.7	22,052.0	18,265.7	16,705.6	11,498.0	18,128.8
2000	11,268.0	19,032.6	18,080.0	17,953.9	16,812.6	15,696.1	18,499.1	22,025.3	20,890.3	16,541.0	15,866.7	13,657.8	10,808.3	9,606.6	16,178.1

**Table 2.10.1**  
**Total Regional Hydro Resources by Water Year**  
**Fiscal Year 2016**  
**BP-2016 Final Rate Proposal** Report Date: **6/9/2015**  
S124-RC-20150609-145700

Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
2001	10,784.2	12,594.0	13,351.0	12,015.8	11,629.4	11,177.4	10,448.5	12,509.9	14,644.3	9,403.8	12,171.0	11,152.9	9,587.3	8,996.1	11,559.2
2002	9,041.6	11,519.2	13,813.1	12,146.1	12,276.1	11,576.9	16,288.6	20,429.3	18,456.2	22,306.9	19,563.4	12,219.6	11,148.6	9,707.7	14,199.4
2003	10,425.0	13,099.0	13,457.5	11,803.8	12,443.1	15,795.6	13,007.7	15,912.6	17,854.0	19,518.4	12,969.9	11,268.3	9,890.6	9,214.9	13,465.2
2004	11,147.9	15,065.6	13,576.4	13,279.3	12,403.3	12,139.7	11,340.6	15,075.7	17,489.4	18,273.2	13,447.4	10,906.4	10,823.2	11,598.5	13,536.7
2005	11,432.2	14,243.0	15,109.4	15,892.5	14,938.8	12,261.1	10,295.2	13,995.3	17,939.4	17,379.8	14,043.6	12,266.5	10,431.9	9,602.0	13,858.8
2006	10,418.8	13,838.7	14,629.1	17,877.8	17,486.4	16,729.1	20,042.3	21,566.7	21,808.8	22,334.4	15,815.8	13,543.3	10,074.9	9,203.6	16,044.9
2007	10,190.2	14,874.2	15,253.6	17,992.8	16,256.4	18,270.0	17,219.3	16,691.7	19,373.2	16,839.3	15,974.9	12,178.6	10,120.6	9,554.5	15,222.1
2008	10,484.2	13,708.9	12,983.4	14,082.9	12,901.0	12,871.6	12,498.6	12,103.6	20,442.2	23,825.0	17,724.7	12,909.8	12,035.7	9,997.0	14,485.2

**Table 2.10.2**  
**Total Regional Hydro Resources by Water Year**  
**Fiscal Year 2017**  
**BP-2016 Final Rate Proposal Report Date: 6/9/2015**  
S124-RC-20150609-145700

Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
1929	11,131.7	13,121.2	13,586.6	12,226.0	11,592.4	11,251.4	10,010.6	13,743.5	14,810.2	15,811.3	11,414.2	11,886.5	10,773.6	10,108.3	12,355.9
1930	10,523.0	12,621.7	13,282.6	10,326.2	12,385.2	11,029.7	11,277.8	15,222.6	14,465.3	11,914.8	13,172.3	12,470.4	10,755.3	9,754.7	12,024.7
1931	10,563.6	12,940.7	13,261.2	10,810.5	10,145.0	10,566.8	9,416.0	9,397.3	16,395.5	11,930.6	13,126.1	11,418.6	9,646.6	9,265.9	11,596.0
1932	10,442.5	12,192.8	13,284.6	11,432.9	10,051.4	14,154.2	17,614.8	20,627.8	21,496.0	21,685.3	16,788.7	12,856.8	12,894.6	10,441.6	14,518.7
1933	10,964.3	14,157.2	14,683.4	17,816.8	17,269.3	16,202.4	13,149.2	15,298.7	18,420.5	23,860.8	21,526.2	16,437.0	14,336.1	10,876.9	16,276.7
1934	12,842.3	19,166.1	22,136.6	23,518.1	21,343.6	19,976.6	20,351.3	20,079.3	19,938.4	18,764.7	13,989.3	11,562.4	10,388.0	9,271.3	17,655.3
1935	10,946.9	13,781.6	13,266.6	18,020.2	16,900.8	15,478.0	10,318.2	15,078.1	17,526.9	17,871.8	16,828.4	14,579.0	11,461.9	9,584.8	14,650.4
1936	10,421.5	12,570.6	13,207.8	10,787.9	11,699.6	11,694.3	11,868.2	18,546.4	21,342.5	21,203.1	14,152.8	11,942.3	10,655.1	9,466.4	13,590.3
1937	10,192.3	12,652.7	13,441.3	10,577.5	10,581.3	10,804.6	11,205.1	10,262.2	16,216.3	15,548.5	11,942.4	12,841.5	11,071.2	9,758.7	12,042.0
1938	10,823.7	12,920.8	14,691.6	17,328.7	16,123.9	16,423.5	16,220.2	21,990.2	21,464.9	19,143.1	16,514.9	12,212.2	10,650.2	10,265.6	15,514.0
1939	10,944.5	12,567.9	13,468.2	14,738.8	13,152.5	12,466.7	13,751.1	17,802.0	18,314.5	14,622.4	13,321.4	12,123.5	10,588.3	9,766.3	13,376.5
1940	11,066.5	13,730.1	13,812.7	13,793.7	12,663.2	18,640.8	13,641.4	15,894.6	17,699.1	14,180.8	12,384.4	10,873.3	9,757.7	9,552.6	13,561.2
1941	10,467.9	12,779.7	13,161.0	12,398.2	12,045.3	11,835.7	9,630.9	12,505.9	16,236.3	14,208.2	13,274.0	11,327.2	10,262.5	10,328.3	12,387.7
1942	10,754.3	13,879.9	15,900.2	15,604.8	12,763.5	14,736.8	11,525.0	16,168.8	16,887.9	17,733.7	17,990.7	13,490.5	12,213.5	11,220.7	14,530.6
1943	10,439.9	13,052.2	13,888.9	18,730.7	17,386.0	16,344.7	21,620.6	22,260.1	19,944.6	23,799.8	21,651.6	13,649.0	12,144.7	10,111.8	16,668.1
1944	10,859.0	13,236.0	13,801.7	12,405.9	12,195.5	10,654.7	10,047.1	13,370.2	13,391.5	10,980.9	12,192.1	11,328.9	9,792.5	9,419.5	11,783.6
1945	10,529.5	12,410.4	13,193.7	11,364.8	11,551.9	11,023.6	10,023.6	9,911.7	18,774.2	19,837.3	11,898.8	12,600.2	10,430.1	9,183.9	12,607.4
1946	10,754.5	13,915.1	14,868.4	16,789.3	14,368.3	17,062.5	17,677.0	22,128.0	22,033.9	19,234.9	18,702.2	14,724.9	13,711.4	10,684.6	16,057.8
1947	10,793.2	14,810.4	19,618.8	20,115.9	19,300.8	18,016.7	16,111.4	17,729.7	20,536.8	19,650.2	17,112.6	14,389.5	13,500.8	10,333.4	16,755.1
1948	15,537.3	17,545.5	16,473.4	19,684.4	16,591.1	15,517.6	14,497.2	19,516.8	23,116.9	24,097.0	19,797.2	17,136.2	15,670.6	11,482.0	17,781.6
1949	11,436.1	14,389.5	13,919.6	15,715.2	13,328.3	18,347.8	15,672.7	21,330.2	22,553.5	20,848.7	12,897.8	11,394.3	10,052.3	9,408.5	15,178.6
1950	10,965.3	13,545.1	14,368.8	19,999.6	18,945.1	19,992.6	18,745.8	19,899.9	20,662.0	24,208.9	22,700.6	16,180.2	14,564.2	11,058.0	17,587.2
1951	13,366.5	18,800.8	20,554.0	22,876.0	22,552.2	21,160.8	19,601.3	20,919.8	21,976.1	20,074.6	20,162.9	15,309.7	13,145.8	10,868.4	18,888.9
1952	14,845.3	16,321.9	16,943.8	19,328.7	18,168.0	16,408.3	18,178.6	22,631.1	23,360.0	20,856.4	16,899.1	14,369.7	13,237.2	9,489.2	17,231.7
1953	10,518.4	12,718.9	13,581.9	14,256.7	17,263.8	15,417.4	12,446.9	15,413.0	20,609.2	24,215.7	18,618.3	13,741.8	12,702.4	10,629.9	15,398.7
1954	11,344.0	15,184.9	16,037.4	18,974.4	19,968.1	18,322.8	15,429.4	17,740.0	20,925.4	22,614.7	22,722.2	18,198.0	17,569.0	14,789.9	17,935.3
1955	11,659.9	16,599.8	15,466.3	14,209.1	13,967.6	11,777.7	11,931.7	13,796.2	17,639.7	23,844.0	22,230.3	16,862.5	13,828.0	10,282.8	15,495.0
1956	12,665.0	17,880.3	19,959.8	22,226.2	21,224.6	20,070.0	18,424.2	22,615.0	23,142.2	24,273.7	20,597.2	15,940.9	14,796.0	10,914.5	19,058.0
1957	12,114.9	14,490.8	16,368.4	16,634.1	13,655.1	17,326.2	17,735.5	17,158.8	23,713.9	24,037.2	16,158.8	13,909.3	11,357.7	10,124.0	16,239.4
1958	10,801.6	13,389.2	14,268.2	17,587.5	16,573.7	16,200.9	14,388.2	19,006.8	22,699.6	22,009.0	14,951.0	13,313.0	11,194.5	9,884.6	15,599.8
1959	11,076.0	16,152.0	18,667.3	21,104.3	20,053.0	18,377.2	17,276.0	17,396.4	20,163.4	22,406.1	21,232.2	16,500.9	14,130.1	15,540.8	18,102.1
1960	17,334.8	19,501.4	17,856.4	17,730.9	16,836.1	15,912.5	22,072.8	19,617.0	18,577.7	20,949.2	16,790.9	13,872.6	12,111.7	9,933.4	17,097.5
1961	11,123.7	14,589.4	14,434.9	17,832.5	17,908.0	18,973.6	15,406.9	15,500.7	20,733.4	22,569.6	15,834.0	13,851.6	11,574.5	9,814.4	15,983.3
1962	10,685.0	13,703.1	13,912.2	16,936.9	15,840.8	12,443.0	18,762.7	22,104.2	20,509.8	18,798.8	15,450.5	13,597.9	12,511.7	9,802.7	15,117.7
1963	11,984.0	16,653.1	17,880.9	18,112.7	17,261.0	15,076.8	11,826.2	14,875.2	18,730.7	19,909.5	16,159.1	13,301.1	11,565.3	10,849.3	15,690.6
1964	10,863.7	14,123.1	14,366.1	15,269.2	14,277.4	12,886.1	16,024.1	14,644.9	19,360.9	24,415.0	21,885.4	16,486.3	14,978.7	12,150.2	15,893.2

**Table 2.10.2**  
**Total Regional Hydro Resources by Water Year**  
**Fiscal Year 2017**  
**BP-2016 Final Rate Proposal Report Date: 6/9/2015**  
S124-RC-20150609-145700

Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
1965	12,557.8	15,492.1	20,233.9	23,833.5	22,346.9	20,019.4	15,002.7	22,257.2	22,179.5	21,173.4	16,681.2	15,737.0	14,888.8	10,237.6	18,209.5
1966	11,654.7	14,601.7	14,815.8	16,291.4	15,065.0	13,474.8	19,113.7	17,144.5	17,081.0	18,603.8	16,949.9	13,405.0	11,797.4	10,210.4	14,948.9
1967	10,577.7	13,678.4	15,625.2	20,672.7	19,920.9	17,643.1	13,742.6	12,800.3	18,592.6	23,981.4	20,614.4	14,751.0	13,596.5	10,684.1	16,603.8
1968	11,827.5	15,322.6	15,080.4	18,106.7	18,717.0	17,384.6	11,065.4	13,344.9	16,203.1	21,681.0	18,134.2	14,953.0	15,100.3	13,242.5	16,061.0
1969	13,225.2	17,606.9	17,020.9	22,342.0	19,394.1	17,327.2	19,633.6	22,080.8	23,145.6	21,346.7	17,422.9	14,439.2	12,548.2	10,412.8	17,786.6
1970	11,158.6	14,083.4	13,643.1	17,341.1	16,092.1	14,783.1	12,050.0	14,021.0	19,448.0	22,541.5	14,619.9	13,305.6	11,261.5	9,897.2	14,898.2
1971	10,705.6	13,610.6	14,666.7	22,299.3	22,409.0	21,341.2	18,244.0	20,773.0	22,951.7	24,535.3	20,739.7	16,776.2	16,284.8	11,277.7	18,359.2
1972	12,061.9	14,946.4	15,720.8	21,754.6	22,329.7	24,343.2	22,538.5	19,416.1	22,864.0	24,471.9	22,017.3	17,759.0	16,874.0	11,858.7	19,206.7
1973	11,876.9	14,623.0	15,446.3	16,934.3	13,375.0	12,606.0	10,042.2	12,932.1	16,031.5	13,825.1	12,711.3	11,836.4	10,221.2	9,755.3	13,315.6
1974	10,818.3	14,165.1	17,081.5	25,024.4	23,433.0	22,590.1	20,185.4	22,091.1	22,201.4	24,479.3	23,142.9	17,256.8	16,727.0	11,476.1	19,360.6
1975	10,817.1	13,620.9	14,529.6	18,216.5	16,822.9	15,880.9	12,644.2	14,660.2	21,003.5	23,683.5	21,591.8	15,731.5	15,252.7	11,701.7	16,421.7
1976	13,471.9	18,346.0	21,963.8	21,981.9	20,387.3	19,356.1	19,253.5	20,624.1	22,784.5	21,386.8	21,044.7	18,714.0	18,551.8	16,163.0	19,622.1
1977	11,673.5	13,483.4	13,558.9	12,734.6	12,427.2	11,188.2	10,367.7	12,665.5	13,657.6	9,872.6	11,478.0	11,238.5	9,912.3	8,437.1	11,719.3
1978	9,965.2	12,220.0	16,429.5	16,440.1	15,754.4	14,133.5	18,419.2	17,629.9	20,956.4	18,008.9	17,119.8	13,238.5	11,795.7	13,064.2	15,381.5
1979	11,641.3	14,000.0	13,242.5	13,434.6	13,610.5	15,733.1	11,381.2	15,062.3	19,686.5	17,207.0	12,138.0	11,061.2	10,528.3	10,008.7	13,727.9
1980	10,465.8	12,766.6	13,147.9	15,116.6	13,011.0	12,765.9	13,116.9	19,089.6	23,013.3	21,626.5	14,504.7	11,791.7	10,260.6	10,465.0	14,503.1
1981	10,800.9	14,003.6	18,492.3	20,025.6	18,817.1	15,948.7	9,972.2	14,759.8	18,922.2	22,978.7	19,141.0	16,059.2	14,169.3	10,612.1	16,428.6
1982	11,176.7	14,950.1	15,195.8	18,782.3	22,806.8	22,219.7	18,249.5	18,438.8	21,982.8	23,777.8	22,306.2	16,209.2	15,861.5	12,731.9	18,331.2
1983	12,885.7	15,238.1	16,439.4	20,592.9	20,015.1	21,191.2	16,335.1	17,678.6	20,895.1	21,853.4	19,666.6	16,571.6	15,528.9	11,365.7	17,761.4
1984	11,510.0	18,737.3	16,747.0	19,622.5	18,627.6	17,259.6	18,451.3	20,898.8	20,590.2	23,375.6	19,144.0	15,312.0	12,549.5	11,502.8	17,539.4
1985	11,642.9	15,699.2	14,693.4	15,780.0	14,428.8	13,107.7	14,763.0	19,551.4	21,094.3	18,159.1	10,696.2	10,359.8	9,556.6	10,295.8	14,381.4
1986	11,685.5	16,609.8	14,878.4	18,215.8	19,154.9	22,531.2	19,624.3	21,348.7	18,953.1	19,844.9	14,932.6	12,719.1	11,135.5	9,864.2	16,565.2
1987	10,760.3	14,370.4	14,955.0	14,495.1	12,468.7	15,733.2	11,120.2	15,279.3	18,706.4	16,364.0	12,270.4	11,138.4	9,575.5	9,438.6	13,602.9
1988	10,319.7	12,339.2	12,898.0	12,268.2	10,146.2	11,376.7	10,567.4	14,413.8	15,659.1	14,061.6	13,261.6	12,331.6	10,773.0	9,444.5	12,166.7
1989	10,430.1	13,717.6	13,722.5	13,323.7	10,907.4	14,074.5	14,188.5	20,874.2	18,767.3	17,483.8	13,630.8	11,867.5	10,553.2	9,794.2	13,727.3
1990	10,609.4	15,016.9	16,263.4	17,290.3	19,119.2	17,206.0	14,190.7	19,581.6	18,577.3	21,476.8	16,475.0	14,962.0	13,309.7	10,071.1	16,069.1
1991	10,636.9	18,547.7	16,952.7	19,897.4	18,490.5	16,558.1	16,435.5	16,442.3	19,348.8	20,500.2	20,911.1	16,199.1	14,198.4	9,928.1	16,942.1
1992	10,379.5	13,455.9	13,020.3	13,315.0	12,534.7	15,575.6	10,384.1	12,843.2	15,617.9	12,072.9	11,529.5	11,020.4	9,722.6	9,097.7	12,387.8
1993	10,361.7	12,999.6	12,724.4	10,838.8	9,819.9	12,859.0	12,454.6	14,079.1	19,580.5	18,004.6	14,389.7	13,388.5	11,404.2	10,463.0	13,160.7
1994	10,591.8	13,189.2	13,428.7	11,507.4	11,188.1	11,234.0	10,734.8	15,085.7	17,759.0	16,843.2	12,844.7	11,870.7	10,008.8	9,782.6	12,689.4
1995	10,449.5	12,248.3	13,979.3	15,058.8	15,803.8	16,796.9	12,787.4	14,001.7	18,648.1	21,734.8	15,408.4	12,842.9	11,451.1	10,647.3	14,683.6
1996	12,389.6	20,285.8	24,107.1	24,334.3	24,360.7	23,637.7	19,347.5	22,996.6	22,276.5	21,928.2	20,762.9	15,907.0	14,437.4	10,747.2	20,077.6
1997	11,134.7	15,189.3	17,116.3	24,800.2	23,464.0	22,846.9	20,157.7	22,945.7	23,109.2	24,363.8	22,099.5	16,553.4	16,400.4	13,224.9	19,593.4
1998	16,299.6	17,376.8	15,148.9	16,557.5	16,910.4	15,036.7	12,198.4	16,729.5	22,936.0	23,179.7	16,775.6	14,997.4	13,184.3	10,279.2	16,585.9
1999	10,738.4	13,724.3	16,353.5	21,653.9	20,795.0	21,254.1	16,715.5	20,365.3	20,337.0	23,475.5	22,024.0	18,262.8	16,701.3	11,542.5	18,150.1
2000	11,268.0	18,901.7	18,072.2	17,863.7	16,729.2	15,691.6	18,090.1	21,748.4	20,771.9	16,544.2	15,861.0	13,653.3	10,808.3	9,661.4	16,116.3



**Table 2.10.2**  
**Total Regional Hydro Resources by Water Year**  
**Fiscal Year 2017**  
**BP-2016 Final Rate Proposal** Report Date: **6/9/2015**  
S124-RC-20150609-145700

Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
2001	10,784.2	12,594.4	13,350.4	12,015.8	11,629.4	11,177.4	10,788.7	12,899.5	15,089.4	9,486.1	12,166.5	11,148.4	9,587.3	9,025.8	11,635.4
2002	9,041.6	11,519.5	13,812.1	13,071.4	12,269.9	12,344.6	13,197.9	19,664.3	18,367.8	22,716.7	19,428.4	12,215.3	11,144.3	9,755.8	14,207.7
2003	10,425.0	13,099.3	13,456.9	11,803.8	12,443.1	15,791.1	12,767.5	15,656.7	17,780.6	19,470.2	12,936.7	11,263.8	9,890.6	9,258.8	13,437.6
2004	11,147.9	15,065.9	13,575.8	14,137.5	11,480.1	13,382.6	11,732.8	14,702.7	17,249.9	16,778.0	13,445.1	10,902.0	10,823.2	11,687.5	13,511.8
2005	11,425.0	14,246.5	15,108.8	15,867.0	14,916.9	12,297.2	10,274.0	13,827.0	17,866.0	17,291.6	14,039.8	12,262.0	10,431.9	9,631.2	13,835.4
2006	10,418.8	13,840.1	14,628.5	18,764.3	17,268.3	16,719.9	18,062.3	21,515.2	21,926.4	22,631.2	15,702.8	13,538.8	10,074.9	9,242.9	16,043.1
2007	10,190.2	14,876.6	15,252.9	17,838.5	16,178.1	18,276.8	17,144.5	16,438.1	19,245.8	16,829.1	15,970.4	12,174.1	10,120.6	9,579.8	15,177.3
2008	10,484.2	13,709.2	12,982.8	14,082.9	12,901.0	12,867.1	12,267.8	12,103.6	20,677.8	24,227.8	17,719.7	12,905.3	12,031.3	10,054.4	14,536.7

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2.11 Estimated Purchase MW Eligible For 4(h)(10)(C) Credit.....103

Table 2.11.1 FY 2016 - 4(h)(10)(C) Power Purchase Amount.....104

Table 2.11.2 FY 2017 - 4(h)(10)(C) Power Purchase Amount.....107

**Table 2.11.1**  
**4(h)(10)(C) Power Purchase Amounts**  
**Fiscal Year 2016**

Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
1929	927	400	1,387	1,932	1,628	1,372	1,321	123	1,321	0	999	-183	-103	543	924
1930	767	138	1,460	3,439	1,357	1,454	-315	0	928	2,417	0	0	0	148	997
1931	406	402	1,305	3,977	2,120	2,171	976	4,962	-138	2,460	-100	0	0	1,029	1,374
1932	137	275	1,470	2,880	-371	450	0	0	0	0	0	0	0	447	450
1933	630	182	523	0	0	0	0	0	0	0	0	0	0	652	166
1934	116	0	0	0	0	0	0	0	0	-475	-122	-108	-12	439	-8
1935	279	650	1,804	0	0	0	0	431	0	-18	0	0	0	1,166	342
1936	928	315	1,374	3,283	1,663	1,333	0	0	0	0	0	0	0	961	820
1937	1,059	0	1,253	3,088	2,207	1,587	785	2,131	260	305	345	-321	-135	277	963
1938	358	697	807	335	0	0	0	0	0	0	-62	-57	-30	19	177
1939	358	965	1,739	1,449	451	1,174	0	0	0	931	-125	0	0	204	597
1940	167	0	986	1,935	1,038	0	0	0	0	1,225	268	619	44	-93	485
1941	353	223	1,682	2,532	1,014	294	1,851	381	0	580	0	-657	-158	-37	611
1942	266	0	229	371	582	370	586	0	0	0	0	0	0	0	174
1943	682	1,524	1,037	0	0	0	0	0	0	0	0	0	0	997	353
1944	976	202	1,513	1,829	1,511	1,713	1,052	386	1,750	2,957	145	-134	0	861	1,173
1945	0	17	1,354	3,233	2,815	2,450	95	2,513	0	0	421	-510	-301	352	953
1946	319	6	1,066	469	0	0	0	0	0	0	0	0	0	521	201
1947	1,035	0	0	0	0	0	0	0	0	0	0	0	0	740	149
1948	0	0	0	0	0	0	0	0	0	0	0	0	0	181	15
1949	642	0	920	0	1,164	0	0	0	0	0	304	207	-163	532	293
1950	535	754	772	0	0	0	0	0	0	0	0	0	0	551	218
1951	0	0	0	0	0	0	0	0	0	0	0	0	0	702	58
1952	0	0	0	0	0	0	0	0	0	0	0	0	0	1,283	105
1953	1,043	264	1,357	1,707	0	0	0	0	0	0	0	0	0	681	426
1954	714	0	104	0	0	0	0	0	0	0	0	0	0	0	69
1955	611	0	0	843	982	996	109	0	0	0	0	0	0	926	364
1956	477	0	0	0	0	0	0	0	0	0	0	0	0	645	94
1957	495	0	0	0	1,339	0	0	0	0	0	0	-92	-40	759	202
1958	895	0	938	0	0	0	0	0	0	0	0	-150	0	955	228
1959	819	0	0	0	0	0	0	0	0	0	0	0	0	0	70
1960	0	0	0	0	0	0	0	0	0	0	-300	0	0	994	56
1961	604	0	628	0	0	0	0	0	0	0	-175	-222	0	846	150
1962	977	0	1,101	0	0	619	0	0	0	0	0	0	0	1,230	330

**Table 2.11.1**  
**4(h)(10)(C) Power Purchase Amounts**  
**Fiscal Year 2016**

Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
1963	335	0	0	0	45	377	2	0	0	0	0	0	0	440	100
1964	906	122	670	812	472	302	0	0	0	0	0	0	0	0	275
1965	0	0	0	0	0	0	0	0	0	0	0	0	0	1,059	87
1966	429	0	249	0	0	497	0	0	0	0	0	0	0	759	162
1967	912	81	250	0	0	0	0	652	0	0	0	0	0	496	173
1968	618	0	259	0	0	0	456	-205	165	0	0	0	0	0	99
1969	0	0	0	0	0	0	0	0	0	0	-181	0	0	745	46
1970	796	0	1,261	0	0	0	0	-254	0	0	0	-58	0	999	244
1971	917	165	705	0	0	0	0	0	0	0	0	0	0	418	186
1972	447	0	35	0	0	0	0	0	0	0	0	0	0	120	51
1973	519	0	527	0	1,063	314	1,525	-134	58	1,227	-111	21	-136	195	361
1974	278	261	0	0	0	0	0	0	0	0	0	0	0	222	63
1975	1,032	129	1,358	0	0	0	0	0	0	0	0	0	0	100	222
1976	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1977	399	0	1,362	1,623	1,057	1,324	1,334	441	1,805	3,394	215	-313	-243	1,357	1,092
1978	679	195	0	0	23	776	0	0	0	0	0	-16	0	0	141
1979	5	5	1,540	2,002	425	0	0	705	0	-311	559	210	-154	177	402
1980	737	611	1,876	1,230	952	890	0	0	0	0	-205	-195	-143	31	496
1981	415	172	0	0	0	488	543	381	0	0	0	0	0	482	168
1982	765	0	506	0	0	0	0	0	0	0	0	0	0	0	108
1983	0	0	0	0	0	0	0	0	0	0	0	0	0	225	18
1984	650	0	0	0	0	0	0	0	0	0	0	0	0	214	73
1985	663	0	430	132	189	634	0	0	0	-391	1,159	884	44	247	297
1986	440	0	247	0	0	0	0	0	0	0	-27	0	-42	1,087	144
1987	1,016	0	271	916	1,818	-339	986	0	0	-78	-8	-95	-119	431	358
1988	556	782	2,059	3,175	2,165	2,167	386	1,510	132	1,152	-149	-107	0	371	1,103
1989	358	327	976	2,552	1,802	110	0	0	0	-399	-323	-205	0	448	473
1990	570	0	0	576	0	0	0	0	0	0	0	0	0	869	169
1991	1,050	0	0	0	0	0	0	0	0	0	0	0	0	924	165
1992	920	49	1,809	1,389	1,508	211	1,259	-220	-66	476	201	152	-303	154	586
1993	171	-97	1,814	3,897	2,241	234	512	0	0	0	0	-45	0	-211	685
1994	553	41	1,048	3,864	1,484	1,774	485	1,537	0	-1	0	-104	-82	-16	806
1995	475	1,046	1,178	1,355	0	70	0	825	0	0	0	0	0	398	414
1996	0	0	0	0	0	0	0	0	0	0	0	0	0	646	53

**Table 2.11.1  
4(h)(10)(C) Power Purchase Amounts  
Fiscal Year 2016**

Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
1997	819	0	0	0	0	0	0	0	0	0	0	0	0	0	70
1998	0	0	469	218	0	0	255	0	0	0	0	0	0	916	144
1999	970	233	0	0	0	0	0	0	0	0	0	0	0	133	112
2000	641	0	0	0	0	0	0	0	0	-376	0	-1	-32	1,163	118
2001	811	313	1,406	1,821	1,451	1,243	1,231	408	946	3,869	-33	-252	-204	1,441	1,148
2002	927	308	1,331	2,283	2,067	1,545	0	0	0	0	0	-63	0	306	723
2003	668	0	1,268	2,814	1,336	0	0	0	0	0	-53	39	-35	533	545
2004	307	-148	1,226	2,556	903	1,127	0	872	0	0	0	152	0	0	542
2005	355	0	72	0	0	123	743	0	0	0	0	0	0	886	150
2006	912	0	363	0	0	0	0	0	0	0	0	-204	-275	1,264	192
2007	990	0	290	0	0	0	0	0	0	0	0	-172	-349	1,414	203
2008	714	0	1,261	1,177	964	356	-365	750	0	0	0	0	0	885	460
Average	541	145	687	846	518	378	198	227	90	237	33	-25	-37	523	348
Median	563	0	525	0	0	0	0	0	0	0	0	0	0	465	202

These 4(h)(10)(C) Power Purchase Amounts are used to calculate the credit for power purchase expenses in the Power Risk and Market Price Study, BP-16-FS-BPA-04.

**Table 2.11.2**  
**4(h)(10)(C) Power Purchase Amounts**  
**Fiscal Year 2017**

Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
1929	832	186	1,068	1,959	1,621	1,460	1,371	162	1,180	89	1,005	-178	-71	711	895
1930	720	0	1,116	3,466	1,337	1,434	-119	0	1,114	2,480	0	0	0	234	987
1931	236	66	1,114	3,860	2,119	2,171	608	4,549	0	2,553	-118	-822	-180	356	1,194
1932	345	502	1,567	2,733	1,129	0	0	0	0	0	0	0	0	629	574
1933	583	55	308	0	0	0	0	0	0	0	0	0	0	768	143
1934	105	0	0	0	0	0	0	0	0	-465	-68	-78	-28	528	4
1935	46	477	1,613	0	0	0	306	655	0	0	0	0	0	1,306	327
1936	881	121	1,138	3,296	1,638	1,333	111	0	0	0	0	0	0	1,170	801
1937	1,012	0	963	3,115	2,182	1,673	532	1,814	-79	275	429	-278	-63	388	908
1938	180	846	559	0	0	0	0	0	0	0	-60	-59	-25	105	132
1939	188	640	1,420	1,369	450	1,174	0	0	0	1,024	-206	0	0	294	531
1940	0	-28	733	1,855	1,037	0	0	141	0	1,225	268	270	0	303	462
1941	228	36	1,007	2,733	1,112	317	427	1,050	0	1,057	-201	-660	-160	0	549
1942	273	-62	53	208	577	0	702	0	0	0	0	0	0	67	119
1943	800	565	1,134	0	0	0	0	0	0	0	0	0	0	1,165	306
1944	929	8	1,224	1,835	1,563	1,786	1,117	386	1,745	3,001	146	-34	0	860	1,149
1945	-40	-168	1,310	2,959	2,799	2,164	41	2,216	0	0	568	-359	0	772	934
1946	274	-220	464	631	0	0	0	0	0	0	0	0	0	642	151
1947	988	0	0	0	0	0	0	0	0	0	0	0	0	856	154
1948	0	0	0	0	0	0	0	0	0	0	0	0	0	295	24
1949	595	0	705	0	1,143	0	0	0	0	0	267	247	-105	664	281
1950	218	436	536	0	0	0	0	0	0	0	0	0	0	663	154
1951	0	0	0	0	0	0	0	0	0	0	0	0	0	827	68
1952	0	0	0	0	0	0	0	0	0	0	0	0	0	1,510	124
1953	996	70	1,127	1,734	0	0	0	0	0	0	0	0	0	813	400
1954	667	0	0	0	0	0	0	0	0	0	0	0	0	0	57
1955	564	0	0	1,231	523	992	422	0	0	0	0	0	0	1,040	380
1956	430	0	0	0	0	0	0	0	0	0	0	0	0	763	99
1957	462	0	0	0	1,314	0	0	0	0	0	0	0	-88	891	209
1958	848	0	688	0	0	0	0	0	0	0	0	-54	0	994	210
1959	772	0	0	0	0	0	0	0	0	0	0	0	0	0	66
1960	0	0	0	0	0	0	0	0	0	0	-281	0	0	1,120	68
1961	557	0	413	0	0	0	0	0	0	0	-176	-184	0	937	137
1962	930	-67	694	0	0	710	0	0	0	0	0	0	0	1,401	308

**Table 2.11.2**  
**4(h)(10)(C) Power Purchase Amounts**  
**Fiscal Year 2017**

Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
1963	298	0	0	0	0	0	306	0	0	0	0	0	0	569	85
1964	859	0	455	839	447	301	0	0	0	0	0	0	0	0	243
1965	0	0	0	0	0	0	0	0	0	0	0	0	0	1,164	96
1966	382	0	34	0	0	497	0	0	0	0	0	0	0	899	151
1967	865	-15	35	0	0	0	0	834	0	0	0	0	0	628	161
1968	571	0	44	0	0	0	593	-385	234	0	0	0	0	0	81
1969	0	0	0	0	0	0	0	0	0	0	-168	0	0	893	59
1970	749	0	1,046	0	0	0	3	-269	0	0	0	-57	0	1,112	231
1971	870	0	490	0	0	0	0	0	0	0	0	0	0	529	159
1972	400	0	0	0	0	0	0	0	0	0	0	0	0	233	53
1973	472	0	312	0	1,038	309	1,430	-46	54	1,372	37	95	-92	62	355
1974	264	-5	0	0	0	0	0	0	0	0	0	0	0	362	52
1975	985	0	1,143	0	0	0	0	0	0	0	0	0	0	228	199
1976	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1977	353	0	1,147	1,650	1,103	1,384	1,098	96	1,406	3,356	258	-158	-94	1,374	1,038
1978	611	-149	-263	0	0	1,094	0	0	0	0	0	-16	0	0	110
1979	0	-185	1,196	1,922	424	0	0	941	0	-353	678	289	-54	159	372
1980	535	290	1,346	1,150	951	1,016	0	0	0	0	-204	-181	-140	115	419
1981	245	-143	0	0	0	0	578	1,219	0	0	0	0	0	627	134
1982	718	0	291	0	0	0	0	0	0	0	0	0	0	0	86
1983	0	0	0	0	0	0	0	0	0	0	0	0	0	358	29
1984	603	0	0	0	0	0	0	0	0	0	0	0	0	350	80
1985	616	0	215	0	165	635	0	0	0	-350	1,243	906	92	360	285
1986	208	0	56	0	0	0	0	0	0	0	-26	0	-42	1,232	120
1987	969	0	56	943	1,821	-221	598	0	0	-104	78	42	-4	590	361
1988	386	540	1,682	2,904	2,164	1,690	461	1,537	163	1,612	-57	-31	0	475	1,038
1989	272	7	719	2,472	1,801	93	0	0	0	-387	-221	-124	-170	536	422
1990	385	0	0	388	0	0	0	0	0	0	0	0	0	1,078	154
1991	1,003	0	0	0	0	0	0	0	0	0	0	0	0	1,092	175
1992	873	-71	1,525	1,416	1,483	-72	831	-234	-91	1,914	206	142	-232	288	637
1993	99	-312	1,284	3,696	2,241	235	517	0	0	0	0	-92	0	-44	611
1994	383	-213	723	3,782	1,483	1,861	104	1,096	0	0	0	-44	0	197	733
1995	305	741	645	1,275	0	0	0	1,591	0	0	0	0	0	532	359
1996	0	0	0	0	0	0	0	0	0	0	0	0	0	777	64



**Table 2.11.2**  
**4(h)(10)(C) Power Purchase Amounts**  
**Fiscal Year 2017**

Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
1997	772	0	0	0	0	0	0	0	0	0	0	0	0	0	66
1998	0	0	254	252	0	0	255	0	0	0	0	0	0	1,040	139
1999	923	38	0	0	0	0	0	0	0	0	0	0	0	259	103
2000	594	0	0	0	0	0	0	0	0	-390	0	0	-31	1,279	122
2001	764	119	1,173	1,848	1,444	1,302	891	19	496	3,830	0	-112	-163	1,445	1,054
2002	872	-12	1,101	1,338	2,160	899	0	0	0	0	0	15	-150	423	551
2003	312	-156	1,089	3,447	695	0	0	454	0	0	-45	105	0	675	527
2004	65	-228	830	1,872	1,558	263	0	1,208	0	0	0	224	0	23	419
2005	316	0	0	0	0	128	647	0	0	0	0	0	0	1,108	155
2006	865	0	148	0	0	0	0	0	0	0	0	-204	-257	1,507	190
2007	943	-9	75	0	0	0	0	0	0	0	0	-172	-289	1,593	197
2008	667	0	1,025	1,204	939	416	-362	750	0	0	0	0	0	1,054	456
<b>Average</b>	475	46	510	817	531	338	168	247	78	272	42	-20	-29	628	325
<b>Median</b>	446	0	310	0	0	0	0	0	0	0	0	0	0	628	194

These 4(h)(10)(C) Power Purchase Amounts are used to calculate the credit for power purchase expenses in the Power Risk and Market Price Study, BP-16-FS-BPA-04.

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**Table 2.12.1**  
**Federal Tier 1 System Firm Critical Output Projection - 2-Year Average**  
**2016 RHWM Process for BP-16 Rate Period**  
**PNW Loads and Resources Study**  
**Study: S115-RC-20141016-105651**

1.	<b>T1SFCO Projections Energy in aMW</b>	<b>2016</b>	<b>2017</b>	<b>Average <sup>1/</sup></b>
2.	Total Tier 1 Federal System Hydro Generation (Table 2.12.2)	6,663.3	6,740.7	6,701.9
3.	Total Designated Non-Federally Owned Resources (Table 2.12.3)	1,134.4	964.6	1,049.6
4.	Total Designated BPA Contract Purchases (Table 2.12.4)	183.6	170.8	177.2
5.	Total Designated System Obligations (Table 2.12.5)	-1,006.3	-1,003.1	-1,004.7
<b>6.</b>	<b><i>Federal Tier 1 System Firm Critical Output</i></b>	<b>6,975.0</b>	<b>6,872.9</b>	<b>6,924.0</b>

<sup>1/</sup> 2-year average calculated hourly to take into account leap year FY 2016.

**Table 2.12.2**  
**Federal System Hydro Generation for use in the T1SFCO Calculation <sup>1/</sup>**  
**2016 RHWM Process for BP-16 Rate Period**  
**PNW Loads and Resources Study**  
**Study: S115-RC-20141016-105651**

1.	Regulated Hydro	2016	2017	Average <sup>2/</sup>
2.	Albeni Falls	24.3	24.4	24.3
3.	Bonneville Hydro	392.6	392.4	392.5
4.	Chief Joseph Hydro	1,110.1	1,110.5	1,110.3
5.	Dworshak Hydro	141.3	141.6	141.4
6.	Grand Coulee Hydro	1,939.3	1,940.0	1,939.7
7.	Hungry Horse	83.8	83.8	83.8
8.	Ice Harbor Hydro	107.9	107.8	107.8
9.	John Day Hydro	790.1	790.2	790.1
10.	Libby	186.5	186.8	186.6
11.	Little Goose Hydro	156.5	176.0	166.2
12.	Lower Granite Hydro	146.5	171.4	158.9
13.	Lower Monumental Hydro	147.1	178.1	162.6
14.	McNary Hydro	481.0	481.0	481.0
15.	The Dalles Hydro	603.5	603.5	603.5
16.	Independent Hydro			
17.	Anderson Ranch	12.2	12.2	12.2
18.	Big Cliff	9.7	9.7	9.7
19.	Black Canyon	6.2	6.2	6.2
20.	Boise River Diversion	1.2	1.2	1.2
21.	Chandler	6.1	6.1	6.1
22.	Cougar	19.0	19.0	19.0
23.	Cowlitz Falls	26.5	26.5	26.5
24.	Detroit	33.8	33.8	33.8
25.	Dexter	9.4	9.4	9.4
26.	Foster	12.2	12.2	12.2
27.	Green Peter	26.8	26.9	26.8
28.	Green Springs - USBR	7.3	7.3	7.3
29.	Hills Creek	17.9	18.0	17.9
30.	Idaho Falls - City Plant	4.2	4.2	4.2
31.	Idaho Falls - Lower Plants #1 & #2	5.8	5.8	5.8
32.	Idaho Falls - Upper Plant	4.2	4.2	4.2
33.	Lookout Point	35.7	35.8	35.8
34.	Lost Creek	30.0	30.1	30.0
35.	Minidoka	10.7	10.7	10.7
36.	Palisades	67.3	67.4	67.4
37.	Roza	6.86	6.9	6.9
<b>38.</b>	<b>Total Tier 1 Federal System Hydro Generation</b>	<b>6,663.3</b>	<b>6,740.7</b>	<b>6,701.9</b>

<sup>1/</sup> Reference Tiered Rate Methodology, BP-12-A-03, Table 3.1, page 139.

<sup>2/</sup> 2-year average calculated hourly to take into account leap year FY 2016.

**Table 2.12.3**  
**Designated Non-Federally Owned Resources for use in the T1SFCO Calculation <sup>1/</sup>**  
**2016 RHWM Process for BP-16 Rate Period**  
**PNW Loads and Resources Study**  
**Study: S115-RC-20141016-105651**

1.	Project	2016	2017	Average <sup>2/</sup>
2.	Ashland Solar Project	0.0	0.0	0.0
3.	Columbia Generating Station	1,075.0	916.0	995.6
4.	Condon Wind Project	9.6	9.7	9.6
5.	Dworshak/Clearwater Small Hydropower	2.6	2.6	2.6
6.	Foote Creek 1	4.0	4.0	4.0
7.	Foote Creek 2	0.5	0.5	0.5
8.	Foote Creek 4	4.4	4.4	4.4
9.	Fourmile Hill Geothermal (Not included)	0.0	0.0	0.0
10.	Georgia-Pacific Paper (Wauna) <i>(Acquisition Expires 3/31/2016)</i>	10.9	0.0	5.4
11.	Klondike I	6.8	6.8	6.8
12.	Stateline Wind Project	20.7	20.7	20.7
13.	White Bluffs Solar	0.0	0.0	0.0
<b>14.</b>	<b>Total Designated Non-Federally Owned Resources</b>	<b>1,134.4</b>	<b>964.6</b>	<b>1,049.6</b>

<sup>1/</sup> Reference Tiered Rate Methodology, BP-12-A-03, Table 3.2, page 140.

<sup>2/</sup> 2-year average calculated hourly to take into account leap year FY 2016.

**Table 2.12.4**  
**Designated BPA Contract Purchases for use in the T1SFCO Calculation <sup>1/</sup>**  
**2016 RHWM Process for BP-16 Rate Period**  
**PNW Loads and Resources Study**  
**Study: S115-RC-20141016-105651**

1.	Contract Purchases	Contract #	2016	2017	Average <sup>2/</sup>
2.	Priest Rapids CER for Canada	97PB-10099	29.4	29.3	29.3
3.	Rock Island #1 CER for Canada	97PB-10102	18.1	18.1	18.1
4.	Rock Reach CER for Canada	97PB-10103	37.6	37.5	37.5
5.	Wanapum CER for Canada	97PB-10100	28.4	28.0	28.2
6.	Wells CER for Canada	97PB-10101	24.0	24.0	24.0
7.	BCHP to BPA PwrS	99PB-22685	1.0	1.0	1.0
8.	BCHP to BPA LCA	99PB-22685	28.9	32.9	30.9
9.	PASA to BPA Pk Repl	94BP-93658	0.0	0.0	0.0
10.	PASA to BPA S/N/X	94BP-93658	0.0	0.0	0.0
11.	PASA to BPA Xchg Nrg	94BP-93658	0.0	0.0	0.0
12.	RVSD to BPA Pk Repl	94BP-93958	2.3	0.0	1.1
13.	RVSD to BPA Seas Xchg	94BP-93958	6.7	0.0	3.3
14.	RVSD to BPA Xchg Nrg	94BP-93958	7.3	0.0	3.7
15.	PPL to BPA SNX (Spring Return)	94BP-94332	0.0	0.0	0.0
16.	PPL to BPA SPX (Summer Return)	94BP-94332	0.0	0.0	0.0
<b>17.</b>	<b>Total Designated BPA Contract Purchases</b>		<b>183.6</b>	<b>170.8</b>	<b>177.2</b>

<sup>1/</sup> Reference Tiered Rate Methodology, BP-12-A-03, Table 3.3, page 141.

<sup>2/</sup> 2-year average calculated hourly to take into account leap year FY 2016.

**Table 2.12.5**  
**Designated BPA System Obligations for use in the T1SFCO Calculation <sup>1/</sup>**  
**2016 RHWM Process for BP-16 Rate Period**  
**PNW Loads and Resources Study**  
**Study: S115-RC-20141016-105651**

1.	System Obligation	Contract #	2016	2017	Average <sup>2/</sup>
2.	BPA to BRCJ Chief Joseph	14-03-17506; 14-03-49151	7.4	7.4	7.4
3.	BPA to BRCB Columbia Basin Project	lbp-4512; 14-03-001-12160	139.1	139.5	139.3
4.	BPA to BRCR Crooked River Project	14-03-73152	0.8	0.8	0.8
5.	BPA to BROP Owyhee Project	EW-78-Y-83-00019	3.4	3.4	3.4
6.	BPA to BRRP Rathdrum Prairie Project	14-03-49151	0.6	0.6	0.6
7.	BPA to BRSID Southern Idaho Projects	EW-78-Y-83-00019	19.8	19.8	19.8
8.	BPA to BRSIN Spokane Indian Develop.	14-03-49151	0.3	0.3	0.3
9.	BPA to BRSV Spokane Valley	14-03-63656	0.7	0.7	0.7
10.	BPA to BRTD The Dallas Reclamation Project	14-03-32210	2.0	2.0	2.0
11.	BPA to BRTV Tualatin Project	14-03-49151	0.7	0.7	0.7
12.	BPA to BRUB Umatilla Basin Project	10GS-75345	2.2	2.2	2.2
13.	BPA to BRYK Yakima Project	DE-MS79-88BP92591	1.8	1.8	1.8
14.	BPA to BCHP LCA	99PB-22685	32.1	32.2	32.2
15.	BPA to BCHA Can Ent	99EO-40003	471.3	467.9	469.6
16.	BPA to BCHA NTSA	12PG-10002	9.4	9.4	9.4
17.	BPA to BHEC 2012PSC	97PB-10051	7.5	7.5	7.5
18.	BPA to PASA C/N/X	94BP-93658	0.0	0.0	0.0
19.	BPA to PASA S/N/X	94BP-93658	0.0	0.0	0.0
20.	BPA to RVSD C/N/X	94BP-93958	2.2	0.0	1.1
21.	BPA to RVSD Seas Xchg	94BP-93958	0.0	0.0	0.0
22.	Federal Intertie Losses (Calculated: 3.0% of Intertie Sales Table 2.12.5 lines 18-21)	n/a	0.1	0.0	0.0
23.	BPA to AVWP WP3 S	85BP-92186	41.8	41.7	41.7
24.	BPA to PPL SNX (Spring Delivery)	94BP-94332	0.0	0.0	0.0
25.	BPA to PPL SPX (Summer Delivery)	94BP-94332	0.0	0.0	0.0
26.	BPA to PSE WP3 S	85BP-92185	41.8	41.7	41.7
27.	BPA to PSE Upper Baker 2	09PB-12126	1.3	1.3	1.3
28.	BPAP to BPAT (Dittmer/Substation Service)	09PB-12128	9.4	9.4	9.4
29.	Federal Power Trans. Losses	n/a	245.8	247.7	246.7
30.	Slice Transmission Loss Returns	n/a	-35.2	-34.6	-34.9
<b>31.</b>	<b>Total Designated System Obligations</b>		<b>1,006.3</b>	<b>1,003.1</b>	<b>1,004.7</b>

<sup>1/</sup> Reference Tiered Rate Methodology, BP-12-A-03, Table 3.4, page 142.

<sup>2/</sup> 2-year average calculated hourly to take into account leap year FY 2016.



**3. HYDRO REGULATION ASSUMPTIONS .....117**  
3.1 HYDSIM Hydro Regulation Study Assumptions for 2016 and 2017 .....119

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**STUDY NUMBER:** 14\_RateCase16\_final & 14\_RateCase17\_final

**Requested By:** BPA Rates Process

**Due Date:** May 8, 2015

**Purpose of Study:** This is an 80-year continuous study of the system operation for the final proposal BP-16 Rate Case for FY 2016 and FY 2017.

**Study Directories:** **DOP Step:** X:\RATES\14\_RateCase16\_final\DOP16\FY16\_RateCase

**AER Step:** X:\RATES\14\_RateCase16\_final\AER &  
X:\RATES\14\_RateCase17\_final\AER

**OPER Step:** X:\RATES\14\_RateCase16\_final\OPER\_final &  
X:\RATES\14\_RateCase17\_final\OPER\_final

**Name of Regulator:** Jennie Tran

The Rate Case HYDSIM studies are run in three steps or layers. The first step determines the Canadian Treaty operations; the second step includes those Treaty operations and adds a layer that determines the U.S. non-federal operations and an approximation of the federal operations; and the third step includes those operations and adds a layer of fine-tuning to determine the federal operations.

There are two separate 80-year studies—one for Fiscal Year (FY) 2016 (October 2015 through September 2016) and one for FY 2017 (October 2016 through September 2017). For simplicity the two 80-year studies are often referred to as a singular study, and each step is often referred to as a singular step. However, in reality there is a surrogate DOP study for each one, an AER step for each one, and an OPER step for each one, which is a total of six studies, and these are collectively referred to as the HYDSIM study for the Rate Case.

## DOP STEP

- This Step is used to determine the Canadian Treaty project elevations following procedures from the Columbia River Treaty.
- Since the official Detailed Operating Plans (DOP) for Treaty storage operations are typically completed just 1-2 months prior to the operating year, they are not available in time for the rate case study. Therefore, surrogate DOP studies are used to reflect expected study results and determine the Canadian Treaty storage operations for the AER step.
- The surrogate DOP studies start with the official Assured Operating Plans (AOP): AOP16 and AOP17 (roll over from AOP16) studies. The surrogate DOP converts the AOP from perfect-knowledge to forecast-based and from operating-year to fiscal-year, and includes all the data updates that are expected to be included in the official DOP studies.
- These updates include plant data from the 2014 PNCA data submittal, 80-year 2010-level Modified Streamflow data, and the most recent flood control data provided by the Corps of Engineers.
- The study begins on October 1, 1928, and ends on September 30, 2008.

## AER STEP

- This AER Step is used to determine the project minimum storage elevations using load equal to the 2014 operating year (OY14) Firm Energy Load Carrying Capability (FELCC) and unlimited secondary market. Minimum elevations from the AER Step are input into the Operational Step.
- This is a **continuous** 80-year study based on the OY14 PNCA data submittal.
- The Coordinated System generation does not include the Tacoma projects, PacifiCorp projects, Brownlee, Oxbow, and Hells Canyon.
- **Streamflow Data** are from “Modified Streamflows 2010 Level of Irrigation”. They contain estimated irrigation depletions from the year 2010. (See “2010 Level Modified Streamflow: Seasonal Volumes and Statistics, 1928-2008” and “2010 Level Modified Streamflow, 1928-2008” both dated August 2011.) Adjustments to these 2010 level modified stream flows are made in this study according to the Bureau of Reclamation’s updated **Grand Coulee pumping schedule** for the Columbia Basin Project in their February 1, 2013, preliminary PNCA data submittal for OY14.
- **Plant Data** are from the PNCA plant data for OY14 for all projects.
- **Loads** are from the FELCC OY14 Critical Period study run by the Northwest Power Pool (NWPP) for the PNCA. The NWPP study has a one-year critical period (September 1, 1936 through April 30, 1937). Thus, only one year of FELCC values are used for all water conditions. This study reflects coordination between PNCA parties in meeting PNCA FELCC. Therefore, generation from projects owned by non-PNCA parties (Brownlee, Oxbow, Hells Canyon, and Canadian projects) are not used to meet PNCA FELCC in these studies. Also, in this study the generation from Tacoma and PacifiCorp projects is not included in the PNCA Coordinated System FELCC computation. The PNCA hydro FELCC includes Hydro-Independent generation from 1936-37 so BPA revises the FELCC to reflect the Hydro-Independent generation for each of the 80 years and uses this modified FELCC as the hydro-residual load required for this study. There is no limit assumed in the secondary market, which is consistent with PNCA studies.
- **Unit Outages** for all projects are from the PNCA OY14 data.
- **Initial Contents** for all projects came from the September 30, 1929, storage ending content from the final Rates study for 2007 (X:\RATES\06\04RATE\_07), except Mica, Arrow, Duncan projects are initialized to the content from the surrogate DOP studies. (X:\Rates\14\_Ratecase16\_final\DOP16\FY16\_RateCase). The initial conditions do not significantly affect the study results since this is a continuous study.
- **Critical Rule Curves (CRC)** are in accordance with PNCA 2014 adopted system critical rule curves where the 1st year critical rule curve = OY14 CRC1; 2nd year = empty; 3rd year = empty; and 4th year = empty.
- **Flood Control Rule Curves**, also known as Upper Rule Curves (URC), are the highest contents allowed for each reservoir and supersede all other reservoir elevation and content operating objectives. The curves are based on: forecasts (not actuals); shift from Dworshak to Grand Coulee; a ratio of 3.6/4.08 Arrow/Mica split; and variable flood control (VARQ) at Hungry Horse and Libby. They were provided by the Corps of Engineers to BPA in March 2013 for 1929-2008. These flood control curves include the variable flood control in December at Libby, BC Hydro’s updated storage reservation diagram for Duncan, and a 1600 cfs minimum flow at Dworshak. (The unit ‘cfs’ is a common measure of flow, cubic feet per second.) The Mica, Arrow, and Duncan flood control requirements are from the DOP16 study (which are the same data as in the Rate Case study). The flood control curves for Coulee are adjusted for the amount of storage capability available below the URC on April 30 each year for Mica, Arrow, and Duncan to more closely reflect the methodology used in real-time operations. BPA adjusts the flood control curves to shift some of Dworshak’s requirement to Grand Coulee when possible.

- **Variable Energy Content Curves (VECCs)** are calculated using OY14 Power Discharge Requirements (PDR's), distribution factors, and forecast errors, which are used in PNCA planning. The Grand Coulee Energy Content Curve (ECC) lower limits are 1225 feet (420.5 ksf) January through April 30 and 1240 feet (843.9 ksf) in May. (The unit 'ksf' is a volume of water equal to 1000 cfs for one day.) The Canadian projects' DOP16 VECCs are based on forecasts, the ratio of 3.6/4.08 Arrow/Mica split, non-shifted flood control, and VarQ flood control at Hungry Horse only. The VECCs for the Federal projects are based on the 80-year volume forecasts.

**Project Specific Data:**

- **Mica, Duncan, and Arrow** are fixed to the 80-year surrogate DOP16 study run by BPA on January 17, 2014, specifically for the BP-16 Rate Case.
- **Libby** operates to meet Coordinated System FELCC in October and November with a minimum flow of 4,000 cfs. Libby has a maximum outflow of 4,000 cfs January through April, 25,000 cfs May through August. The 25,000 cfs May through August maximum outflow is powerhouse hydraulic capacity without spill, but a higher outflow including spill can be provided to maintain the required VARQ flood control space. Libby has a minimum outflow of 6,000 cfs May 15 through September. Libby can be drafted to meet FELCC in October and November as long as it does not draft below the December Variable URC. When the December forecast at Libby for April through August is less than 5500 thousand acre feet (KAF), the flood control at Libby in December is 2426.6 feet (1804.7 ksf). When the forecast is greater than 5900 KAF, the flood control in December is 2411.0 feet (1502.2 ksf). The flood control data is interpolated between 1804.7 ksf and 1502.2 ksf when the forecast is between 5500 and 5900 KAF. January-April, Libby operates to minimum flow (4,000 cfs) or at the flood control URC in attempt to reach the flood control URC on April 15 (as a surrogate for the BiOp's April 10 objective). During May 1 through June 30 Libby operates for Sturgeon and during May 15 through September 30 it operates for Bull Trout. Sturgeon and Bull Trout flow requirements May through September are based on May final April-August Kuehl-Moffit forecast at Libby and are summarized as follows from the PNCA OY14 Corps of Engineers Data Submittal based on the USFWS BiOp dated February 18, 2006, where MAF is one million acre-feet and KAF is one thousand acre-feet of water volume.

<u>Libby May1 Apr-Aug</u> <u>Forecast Volume (MAF)</u>	<u>Sturgeon Flow Volume</u> <u>Provided from Libby (KAF)</u>
<4800	0
4800-5400	800
5400-6350	800-1120
6350-7400	1120-1200
7400-8500	1200
8500-8900	1200-1600
>8900	1600

<u>Libby May1 Apr-Aug</u> <u>Forecast Interval (MAF)</u>	<u>Bull Trout Minimum Flow</u> <u>May15-Sep30 (CFS)</u>
<4800	6000
4800-6000	7000
6000-6700	8000
>6700	9000

Libby can draft below the 2,439 feet (2061.3 ksf) draft limit to meet the Bull Trout flow objective. In years when the May-1 April through August volume forecast for The Dalles is less than 71.8 million acre feet (MAF), which is the lowest 20<sup>th</sup> percentile, the project attempts to operate along a computed straight line between June 30 content and a September 30 draft limit of 2439.0 feet (2061.3 ksf) during July and August to minimize occurrences of a second peak flow in the summer. In years when the forecast is greater than or equal to 71.8 MAF the September 30 draft limit is 2449 feet (2280.3 ksf). However, due to minimum flow for sturgeon and bull trout, the project often operates below the computed straight line.

- **Hungry Horse** operates to meet the following minimum flow requirements at the project and at Columbia Falls as shown in the PNCA data submittal. The minimum flows are determined each month based on the January, February, and March forecasts of April-August streamflow volumes. The March forecast also determines the minimum flows for April through December.

<u>Hungry Horse</u> <u>Apr-Aug Forecast (KAF)</u>	<u>Hungry Horse</u> <u>Minimum Flow (CFS)</u>	<u>Columbia Falls</u> <u>Minimum Flow (CFS)</u>
<1190	400	3200
1190-1790	400-900	3200-3500
>1790	900	3500

Hungry Horse will draft to 3555.8 feet (1453.9 ksf) in October and November, 3549.2 feet (1377.7 ksf) in December for winter flood control. However, due to the minimum flow requirement at Columbia Falls, Hungry Horse often operates below these elevations in October through December. From January through March, Hungry Horse operates between the fish VECC (aka Variable Draft limit to assure 75% chance of filling to April flood control elevation) and the VarQ flood control elevation except in periods when minimum flow requirements draft the project deeper. The fish VECCs are calculated using assumed inflows that are exceeded 75 percent of the time, the minimum outflow, and the requirement to be at flood control elevation on April 10. Hungry Horse operates to the lower of 3545 feet (1330.2 ksf) or VarQ flood control upper rule curve in April. In May-June, Hungry Horse operates on flood control when possible but drafts below flood control to meet minimum flows when necessary. In years when the May 1 April-August volume forecast for The Dalles is less than 71.8 MAF (20<sup>th</sup> percentile), the project operates along the computed straight line between June 30 content and a September 30 draft limit of 3540.0 feet (1275.0 ksf) during July and August to minimize occurrences of a second peak flow in the summer. In years when the May 1 April-August volume forecast for The Dalles is greater than or equal to 71.8 MAF (20<sup>th</sup> percentile), the project operates along the computed straight line between June 30 content and a September 30 draft limit of 3550.0 feet (1386.7 ksf) during July and August to minimize occurrences of a second peak flow in the summer. The maximum discharge at Hungry Horse is 9,000 cfs during September through April 1-15, and 11,956 cfs in April 16-30 through August 31, unless the URC causes more discharge.

- **Albeni Falls** operates at 2062 feet (559.1 ksf) from June through August, 2060 feet (465.7 ksf) in September, 2056 feet (279.0 ksf) in October, 2051 feet (57.6 ksf) November through March, 2056 feet (279.0 ksf) in April, and 2060 feet (465.7 ksf) in May.
- **Kerr** operates to elevation 2891 feet (488.6 ksf) in October, 2890 feet (426.3 ksf) in November, 2888 feet (302.8 ksf) in December, 2886.3 feet (198.8 ksf) in January, 2884.7 feet (101.8 ksf) in February, 2883.5 feet (29.9 ksf) in March, 2883.8 feet (47.8 ksf) in April 15, 2885.3 feet (138.1 ksf) in April 30, 2890 feet (426.3 ksf) in May, full at 2893 feet (614.7 ksf) June through August, and 2892.5 feet (583.1 ksf) in September. This operation is based on best estimated operations from Kerr project.

- **Grand Coulee** operates to meet FELCC September through December subject to the draft limits of 1283 feet (2332.2 ksf) in September and October, 1275 feet (2027.1 ksf) in November, and 1270 feet (1843.4 ksf) in December. January through March, Coulee can be drafted to the higher of winter draft limits [1260 feet (1489.2 ksf), 1250 feet (1155.8 ksf), 1240 feet (843.7 ksf), respectively] or the Biological Rule Curve (fish VECC). The fish VECC reflects the expected April 10th URC and storage needed for the appropriate Vernita Bar minimum flow requirement. Grand Coulee is then operated to these minimum storage points. The fish VECCs are calculated using the regulated inflows calculated in the hydro regulation model which are exceeded 85 percent of the time, perfect foreknowledge of the minimum outflow, and the requirement to be at flood control elevation on April 10. On April 15, Coulee operates on flood control. From April 30 through May, Grand Coulee may be drafted to the lower of flood control or 1280 feet (2215.5 ksf) to support Priest Rapids and McNary flow augmentation targets. In June, Grand Coulee operates to 1288 feet (2532.0 ksf) or flood control elevations. In July, Grand Coulee has a draft limit of 1285 feet (2411.4 ksf) to support Priest Rapids and McNary flow augmentation targets. In August 1-15, the draft limit for BIOP flow augmentation is 1280 feet (2215.6 ksf) if July 1 April-August runoff at The Dalles is less than 92 MAF; otherwise the draft limit is 1282 feet (2293.3 ksf). In August 16-31, the draft limit is 1278 feet (2139.8 ksf) if the July 1 forecast April through August volume runoff at The Dalles is less than 92 MAF; otherwise the draft limit is 1280 feet (2215.6 ksf). At-site minimum flow is equal to 30,000 cfs. Grand Coulee is subject to a draw down limit of 1.5 feet per day when Coulee is above 1260 feet, 1.3 feet per day when Coulee is between 1260 and 1240 feet, and 1.0 feet per day when Coulee is below 1240 feet. During the flow augmentation period, Grand Coulee will release no more water than necessary to meet the minimum flow requirements.
- **Vernita Bar** minimum flows for December through May vary by water condition, with minimum flows established as the lower of a) 68 percent of the largest of the October or November flow at Wanapum or b) 70,000 cfs. Values less than 70,000 cfs are rounded to the nearest 5,000 cfs. The minimum protection level flow at Vernita Bar in any period will be no less than 36,000 cfs. These Vernita Bar flow requirements are modeled as requirements at Priest Rapids, and Grand Coulee will draft to meet them.
- **Priest Rapids** has a flow augmentation target of 135,000 cfs for Steelhead April 10 through June 30. From April 1-9 the minimum flow for Priest Rapids is the same as the Vernita Bar minimum flow.
- **Upper Snake** reservoirs and river reaches above Brownlee are not simulated in this study. Upper Snake operations are embedded in the Brownlee inflow data, as described in the 2010 Level Modified Streamflow documentation.
- **Brownlee** operates to the fixed target elevations provided to BPA from the Northwest Power Pool on October 11, 2013. They are 2059 feet (373.5 ksf) in August, 2045 feet (293.8 ksf) in September, 2053 feet (337.4 ksf) in October, 2069.8 feet (441.8 ksf) in December, 2059.7 feet (377.7 ksf) in January, 2075 feet (477.8 ksf) in June, and 2062 feet (391.5 ksf) in July and supports a minimum flow requirement of 6500 cfs at Hells Canyon. Brownlee drafts to support the flow objective at Hells Canyon between 6500 to 13000 cfs in October, and between 8000 to 13000 cfs in November for Fall Chinook operation. In February through May, Brownlee operates to flood control unless drafted for Hells Canyon minimum flow requirement.

- **Dworshak** is on minimum flow of 1500 cfs or at flood control elevations in all periods with the exception of July-September. Dworshak's outflow is limited to 14,000 cfs in July-August except when exceeded to meet the URC-- the maximum flow is 25,000 cfs for flood control operations. During the July-August flow augmentation period, Dworshak will release no more water than necessary to meet the Lower Granite flow target, though the target is rarely met and instead Dworshak most often operates to target elevations based on a straight-line draft between end of June and end of August target elevations: usually 1600 feet (1016 ksf) June 30, 1570 feet (756.5 ksf) July 31, 1554 feet (630.9 ksf) August 15, and 1535 feet (497.0 ksf) August 31. Dworshak is drafted to 1520 feet (395.8 ksf) on September 30 without violating the maximum outflow of 7,750 cfs.
- **Lower Snake projects operate at MOP** (minimum operating pool) in accordance with the PNCA data submittal. As identified in the FCRPS BiOp, the Corps operates Little Goose, Lower Monumental, and Ice Harbor within one foot of minimum operating pool (MOP) during the period from approximately April 3 through August 31. Lower Granite operates within one foot of MOP from approximately April 3 through November 15 (Apr1-Oct in HYDSIM modeling). MOP for Lower Granite, Little Goose, Lower Monumental and Ice Harbor is elevation 733 (224.9 ksf), 633 (260.4 ksf), 537 (180.4 ksf) and 437 feet (193.4 ksf), respectively. During the rest of the year Lower Granite, Little Goose, Lower Monumental and Ice Harbor operate at elevation 738 (245.7 ksf), 638 (285.0 ksf), 540 (190.1 ksf) and 440 feet (204.8 ksf), respectively.
- **Turbine operations** at the four lower Snake River projects (Lower Granite, Little Goose, Lower Monumental and Ice Harbor) and the four lower Columbia River projects (McNary, John Day, The Dalles and Bonneville) are within **1 percent of peak efficiency** March through November. This requirement is reflected in the HYDSIM hydro availability file.
- **Spill for Fish Passage** is included at the eight federal mainstem projects (Lower Granite, Little Goose, Lower Monumental, Ice Harbor, McNary, John Day, The Dalles and Bonneville) based on the OY14 PNCA data, summarized below. The spill is limited at times by 120% Total Dissolved Gas (TDG) Caps and minimum turbine flow requirements.



- Juvenile Passage Spill and Total Dissolved Gas Caps from OY14 PNCA Planning**

<b>SPILL CRITERIA FOR PNCA OY14 (Feb 1, 2013 Submittal Appendix A-25)</b>						
	<b>Spill</b>	<b>Min Turb</b>	<b>Min Spill</b>	<b>Days</b>	<b>Hour Ending</b>	<b>Notes</b>
<b>LWG</b>	20 kcfs 18 kcfs	11.5 kcfs		Apr 3 - Jun 20; Jun 21 - Aug 31	All hours	Gas Cap: 40 kcfs
<b>LGS</b>	30% flow	11.5 kcfs	8kcfs if flow<32 kcfs	Apr 3 - Jun 20; Jun 21 - Aug 31	All hours	Gas Cap: Ap1-Ap2: 30 kcfs; May 28 kcfs; June 30 kcfs; Jul-Au2: 28 kcfs
<b>LMN</b>	26 kcfs; 25 kcfs; 22 kcfs; 18.3 kcfs; 17 kcfs;	11.5 kcfs		Apr 3 -15; Apr 16 - 31; May 1-31; Jun 1 -20; Jun 21 - Aug 31	All hours	Gas Cap: Ap1: 26 kcfs; Ap2: 25 kcfs; May: 22 kcfs; Jun 19 kcfs; Jul-Au2: 24 kcfs
<b>IHR</b>	45 kcfs day/gas cap night	9.5 kcfs	8.4 kcfs	Apr 3 - 28;	All hours (13 hrs day/11 hrs night)	Gas Cap: 97 kcfs
	30% vs 45kcfsday/ gas cap night			Apr 29 - Jul 12;	All hours (13 hrs day/11 hrs night)	
	45 kcfs day/gas cap night			Jul 13 - Aug 31	13 hrs day/11 hrs night	
<b>MCN</b>	40% flow	50 kcfs		April 10 - Jun 19	All hours	Gas Cap: Ap1-Ap2: 117 kcfs; May 122 kcfs; Jun 125 kcfs ; Jul 138 kcfs; Au1- Au2: 148 kcfs
	50% flow		Jun 20 - Aug 31	All hours		
<b>JDA</b>	30%	50 kcfs	25%	Apr 10 - 27	All hours	Gas Cap: Ap1 : 96 kcfs; Ap2: 90 kcfs; May-Jul 95 kcfs; Au1-Au2: 98 kcfs
	30% vs 40% flow			Apr 28 - Jul 20		
	30%			Jul 21 - Aug 31		
<b>TDA</b>	40% flow	50 kcfs		Apr 10 - Aug 31	All hours	Gas Cap: Ap1 : 124 kcfs; Ap2: 131 kcfs; May 132; Jun 137 kcfs; Jul 139 kcfs; Au1-Au2: 125 kcfs
<b>BON</b>	100 kcfs	30 kcfs	50 kcfs	Apr 10 - Jun 15	All hours	Gas Cap: Ap1: 106 kcfs; Ap2: 108 kcfs; May: 109 kcfs; Jun: 98 kcfs; Jul: 111 kcfs ; Au1: 116 kcfs, Au2: 120 kcfs
	95 kcfs vs 85kcfs day/ 121 kcfs night			Jun 16 - Jul 21	16 hrs Day/ 8 hrs night	
	75 kcfs day/gas cap night			Jul 22 - Aug 31		

LWG = Lower Granite; LGS = Little Goose; LMN = Lower Monumental; IHR = Ice Harbor; MCN = McNary;  
JDA = John Day; TDA = The Dalles; BON = Bonneville

- **Chum Flow Objectives at Bonneville** are from November 1 through April 10 and estimated at 125,000 cfs in the PNCA data submittal. Grand Coulee drafts for this Chum flow requirement with draft limits of 1275 feet (2027.1 ksf) in November and 1270 feet (1843.4 ksf) in December.
- **McNary Flow Targets** for April 10 through June 30 are 220,000 to 260,000 cfs based on The Dalles April 1, April - August volume runoff forecasts. When the forecast is 80 MAF or less the target is 220,000 cfs, and when the forecast is 92 MAF or greater the target is 260,000 cfs. Straight-line interpolation determines the flow targets for volume forecasts between 80 and 92 MAF. McNary summer flow targets are 200,000 cfs in July and August. Grand Coulee drafts for this flow augmentation target, subject to draft limits.
- **Lower Granite Flow Targets** also vary depending on the forecast. When Lower Granite April 1, April - July runoff forecast is less than 16 MAF, then the April 3 through June 20 flow target is 85,000 cfs, and the June 21 through August 31 is 50,000 cfs. When the April 1 Lower Granite April through July forecast is greater than 20 MAF, the April 3 through June 20 target flow is 100,000 cfs. In June 21 through August 31, when the forecast is greater than 28 MAF, the flow target is 55,000 cfs. The spring flow targets are interpolated for forecasts between 16 and 20 MAF, and the summer flow targets are interpolated for forecasts between 16 and 28 MAF. Dworshak drafts to meet this flow objective, subject to draft limits.
- **John Day** is operated at 262.5 feet (127.8 ksf) from April through September. From October through March, John Day operates to elevation 265 feet (191.0 ksf).
- **Bonneville** second powerhouse corner collector is modeled as “other spill” in HYDSIM, using the “other spill” data from PNCA OY14.
- **Spill at non-Federal projects** is summarized below from OY14 PNCA planning data. Wells dam spills the percentage shown below if Chief Joseph’s outflow is less than 140,000 cfs; otherwise Wells spills 10,200 cfs April 12 through August 26.

Non-Federal Spill for Fish (Percent of Total Outflow or cfs)

PROJECTS:	Apr1	Apr2	May	Jun	Jul	Aug1	Aug2
Wells (%)	1.7	6.5	6.5	6.5	6.5	6.5	4.5
Rocky Reach (%)	0.0	0.0	0.0	8.4	9.0	9.0	2.8
Rock Island (%)	0.0	9.3	10.0	19.0	20.0	20.0	6.3
Wanapum (cfs)	2,000	22,000	22,000	22,000	22,000	22,000	13,000
Priest Rapids(cfs)	1,800	25,800	25,800	25,800	25,800	25,800	14,300

PROJECTS:	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Wanapum (cfs)	4,000	4,000	3,000	800	800	1,200	1,613
Priest Rapids(cfs)	2,800	2,800	2,300	200	200	1,100	1,461

- **Kootenay Lake** is operated as necessary, up to free flow, to maintain the lake level below the International Joint Commission (IJC) rule curve and the calculated “allowable elevation at Queens Bay”. After August 31, the lake level may rise to elevation 1745.32 at the Queens Bay gage. This maximum elevation at Queens Bay is in effect through January 7. After January 7 the lake will be lowered to elevation 1744 on February 1, elevation 1742.4 on March 1, and 1739.32 on May 1. From June 1 through August 31, after the lake exceeds elevation 1739.32 feet at the Queens Bay gage, the lake shall be operated using the “allowable elevation” calculation to determine the Queens Bay maximum allowable elevation until the elevation at the Nelson gage drafts back to elevation 1743.32 feet.

**OPER STEP**

- All AER step criteria apply in the OPER step unless specifically amended below.
- **Loads** in the OPER step are the 2016 and 2017 Coordinated System firm residual hydro loads from BPA’s LORA Inventory Study (S121-INV-20150317-130348) on March 17, 2015. These residual hydro loads are the total coordinated system firm load less all the other firm non-hydro resources. A variable secondary market limit based on an AURORA market analysis is also included in March through July periods of every year. The secondary market limit is calculated as necessary to force the HYDSIM ‘overgen’ spill to equal the spill due to lack of market estimated by AURORA, except in periods when Grand Coulee is able to store water and avoid spill. The Coordinated System independent hydro generation from LORA Inventory Study (S121-INV-20150317-130348) is also used in this study to develop the residual hydro load. In this OPER study, the generation from the Tacoma and PacifiCorp projects is included in the Hydsim Coordinated System total generation because Tacoma and PacifiCorp are included in the Coordinated System firm residual hydro loads from BPA’s LORA.
- **Availability Factors** are used in HYDSIM to simulate unit outages and units held for reserve requirements. Unit outages are based on the latest information for all plants provided by PGF. The availability factors are calculated using a combination of planned outages plus forced outages that are based on historical data with the additional input from the project owners. The following tables show availability factors based on these outage assumptions for FY 2016 and FY 2017.

FY 2016:

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>LIB</b>	78%	95%	98%	80%	80%	71%	88%	98%	98%	85%	81%	83%
<b>HGH</b>	72%	73%	73%	44%	72%	73%	57%	69%	79%	87%	73%	73%
<b>ALF</b>	99%	75%	96%	99%	99%	99%	99%	99%	99%	77%	65%	78%
<b>DWR</b>	82%	66%	90%	98%	43%	43%	98%	98%	98%	98%	98%	34%
<b>GCL</b>	62%	68%	71%	75%	74%	72%	80%	74%	67%	78%	79%	71%
<b>CHJ</b>	57%	86%	92%	91%	88%	80%	87%	94%	92%	94%	88%	72%
<b>LWG</b>	48%	50%	61%	64%	64%	62%	64%	68%	97%	84%	72%	81%
<b>LGS</b>	76%	74%	76%	82%	78%	94%	96%	95%	95%	81%	67%	97%
<b>LMN</b>	68%	79%	73%	82%	82%	78%	80%	79%	81%	80%	61%	64%
<b>IHR</b>	83%	83%	76%	79%	78%	76%	78%	78%	69%	65%	62%	62%
<b>MCN</b>	89%	94%	93%	81%	81%	81%	80%	80%	80%	75%	71%	68%
<b>JDA</b>	72%	89%	70%	63%	87%	87%	87%	94%	95%	91%	91%	85%
<b>TDA</b>	89%	92%	96%	94%	89%	92%	84%	82%	79%	82%	80%	87%
<b>BON</b>	68%	82%	82%	84%	91%	85%	82%	87%	79%	76%	78%	63%

FY 2017:

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
LIB	95%	95%	95%	80%	83%	80%	77%	93%	95%	80%	72%	81%
HGH	61%	65%	93%	61%	71%	73%	50%	48%	48%	48%	52%	48%
ALF	99%	79%	99%	99%	99%	99%	99%	99%	99%	83%	77%	68%
DWR	21%	20%	25%	42%	42%	42%	42%	97%	97%	97%	97%	82%
GCL	68%	66%	69%	77%	79%	79%	74%	72%	75%	80%	80%	68%
CHJ	77%	82%	85%	84%	79%	77%	85%	89%	89%	89%	88%	83%
LWG	81%	81%	80%	95%	96%	95%	96%	96%	96%	83%	81%	77%
LGS	82%	87%	86%	93%	91%	92%	92%	91%	91%	79%	82%	93%
LMN	66%	72%	91%	97%	97%	93%	97%	97%	90%	66%	56%	66%
IHR	76%	66%	77%	78%	67%	75%	77%	77%	77%	62%	59%	53%
MCN	69%	73%	81%	73%	73%	74%	73%	73%	73%	71%	68%	67%
JDA	79%	87%	90%	68%	66%	87%	86%	90%	92%	88%	84%	74%
TDA	85%	91%	93%	89%	81%	82%	72%	75%	82%	87%	85%	82%
BON	67%	86%	84%	86%	85%	81%	80%	82%	85%	88%	87%	80%

- The availability factors are also used to reflect reserve requirements because HYDSIM has no other mechanism to account for *inc* reserves, which require the system to have units available to increase generation within a few minutes. After calculating availability factors based on unit outage information, the availability factors are further decreased to reflect units needed for meeting reserve requirements. The availability factors assume the federal hydro system will provide 89 percent of the estimated operating contingency reserves required. The availability factors reflect operating contingency reserve requirements at 3 percent of the total control area generation and 3 percent of the total loads. Balancing reserve requirements of 400 MW in April-July and 900 MW in August-March are also included in the availability factors. The following tables show availability factors after considering these reserve requirements in addition to the outage assumptions.

FY 2016:

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
LIB	78%	95%	98%	80%	80%	71%	88%	98%	98%	85%	81%	83%
HGH	72%	74%	74%	43%	71%	74%	56%	69%	79%	86%	74%	74%
ALF	92%	71%	92%	92%	92%	92%	92%	92%	92%	71%	61%	71%
DWR	82%	66%	90%	98%	43%	43%	98%	98%	98%	98%	98%	34%
GCL	47%	60%	63%	66%	65%	61%	69%	67%	62%	70%	66%	57%
CHJ	57%	76%	80%	84%	81%	77%	87%	84%	78%	88%	83%	72%
LWG	39%	40%	52%	55%	54%	53%	52%	55%	78%	68%	59%	57%
LGS	54%	65%	66%	73%	68%	84%	79%	78%	78%	67%	55%	71%
LMN	61%	70%	63%	72%	72%	69%	72%	72%	73%	73%	55%	58%
IHR	66%	71%	63%	66%	65%	64%	74%	74%	65%	61%	58%	58%
MCN	63%	86%	85%	73%	72%	73%	63%	63%	63%	59%	55%	46%
JDA	64%	81%	61%	55%	79%	79%	80%	88%	89%	84%	81%	77%
TDA	67%	84%	87%	85%	80%	83%	62%	60%	58%	60%	55%	65%
BON	59%	72%	72%	74%	80%	75%	68%	72%	65%	62%	62%	50%

FY 2017:

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>LIB</b>	95%	95%	95%	80%	83%	80%	77%	93%	95%	80%	72%	81%
<b>HGH</b>	61%	65%	92%	62%	70%	74%	50%	48%	48%	48%	53%	48%
<b>ALF</b>	92%	82%	92%	92%	92%	92%	92%	92%	92%	82%	71%	71%
<b>DWR</b>	20%	20%	25%	42%	42%	42%	42%	97%	97%	97%	97%	83%
<b>GCL</b>	57%	58%	60%	65%	63%	61%	65%	64%	66%	70%	66%	59%
<b>CHJ</b>	72%	73%	76%	82%	79%	76%	81%	81%	83%	88%	83%	74%
<b>LWG</b>	57%	73%	71%	85%	86%	86%	78%	78%	78%	67%	66%	54%
<b>LGS</b>	59%	78%	77%	83%	81%	82%	76%	75%	75%	65%	67%	68%
<b>LMN</b>	59%	63%	81%	88%	88%	84%	88%	87%	81%	59%	50%	51%
<b>IHR</b>	60%	54%	64%	65%	66%	75%	72%	72%	72%	58%	56%	50%
<b>MCN</b>	47%	65%	73%	65%	65%	74%	58%	57%	57%	55%	53%	46%
<b>JDA</b>	71%	78%	82%	59%	66%	83%	79%	83%	85%	82%	74%	66%
<b>TDA</b>	63%	83%	84%	81%	72%	77%	52%	55%	60%	64%	59%	61%
<b>BON</b>	53%	76%	74%	76%	75%	82%	66%	68%	71%	73%	70%	65%

- **Initial Contents** for the major federal projects are based on the 70-year average of September 30 storage ending content from the 08RateCase10\_final study.
- **Flood Control Rule Curves** for Grand Coulee are adjusted for the amount of storage capability available below the URC on April 30 each year for Mica, Arrow, and Duncan and are also adjusted to shift some Dworshak flood control space to Grand Coulee when possible while still meeting Dworshak’s local flood control requirements and following Corps procedures.
- **Non-federal projects** are run to the resulting contents from the AER step. This allows the federal projects to operate differently without causing the non-federal projects to adjust operations to meet the system load.
- **Bonneville Chum Flow Objectives** are determined each period based on 11.5 or 11.3 feet tailwater elevation requirements below Bonneville November through March and 16.5 feet tailwater in April. Grand Coulee operates to meet the chum flow objectives November through March subject to the draft limits described under Grand Coulee.
- **April 10 URC** objectives are included in the study. The BiOp objective is for the federal reservoirs to be at their April 10 URC elevations each year, as full as possible in preparation for providing flows to meet the spring flow objectives, although minimum flow requirements and forecast errors can cause projects to miss this refill objective. The objective is for Grand Coulee to operate with an 85 percent chance of reaching the April 10 elevation and for Libby and Hungry Horse to operate with a 75 percent chance. The April 10 objectives are modeled as April 15 objectives in HYDSIM.
- **Lower Granite flow targets** are removed from the OPER step because Dworshak is the only project available to help meet them and other operating requirements determine its operation.

### Project Specific Data:

- **Mica, Duncan, and Arrow** are fixed to the 80-year DOP16 study for 2016 and 2017 rate case studies with the following additions: 1) One MAF of flow augmentation is stored in January and is released in March in dry years or released in May, June, and July in non-dry years. For whitefish, the 1 MAF storage is not allowed to decrease Arrow February or March outflows more than 19,000 cfs below the January outflow. The DOP study is not limited for whitefish, but the 1 MAF storage is not allowed to worsen the operation for whitefish. 2) The trout spawning operation is included at Arrow where April 16 through April 30 flows are at least 15,000 cfs and May and June flows are equal to or greater than the preceding month whenever possible. No more than a 10,000 cfs decrease is allowed in the April through June trout spawning period. 3) Arrow and Duncan balance operations to ensure that both projects are on DOP16 contents by 31 July. 4) Mica balances to the DOP16 contents July-December when Arrow and Duncan can not.
- **Duncan** targets outflow of 6,800 cfs to support Cora Linn and Brilliant flows but does not draft below 1,845 feet (316.2 ksf) in September. Duncan targets outflow of 2,500 cfs in October, 2,700 cfs in November, 4,600 cfs in December (to support Kootenay Lake elevation), and 7,100 cfs in January (to support Arrow whitefish operation). Duncan has a minimum flow of 5,500 cfs and 2,500 cfs in February-March, respectively, which often control the operation. In February and March, when not controlled by minimum flows Duncan drafts for power with a draft limit of 1812.5 feet (93.1 ksf) in February and a maximum elevation of 1807.7 feet (65.3 ksf) in March. In April, Duncan drafts to empty (elevation 1794.2 ft, 0.0 ksf) unless the March 1 May through July forecast at Duncan is less than 1,480 KAF when Duncan operates to 1,000 cfs outflow in the first half of April and 100 cfs outflow in the second half of April. In May and June Duncan operates to a flow of 100 cfs unless the flood control URC requires more discharge. In July, refill Duncan to full elevation of 1892 feet (705.8 ksf), and in August target to 1890 feet (688.2 ksf) or full unless it's on minimum flow constraint.
- **Arrow** stores up to 1 MAF for flow augmentation in January in all years with a minimum flow of 30,000 cfs in January if the January 1 forecast of April through August volume at The Dalles is less than 75 MAF; otherwise the minimum flow is 20,000 cfs. Arrow releases this storage up to 1 MAF (15 percent in May, 15 percent in June, and 70 percent in July) in years with a February 1 and March 1 forecast April through August volume at The Dalles greater than 75.0 MAF. In years when February 1 and March 1 forecast April through August volume at The Dalles is less than 75.0 MAF this storage is released half in February and released all in March. In years when February 1 forecast is less than 75.0 MAF and March 1 forecast is greater than 75.0 MAF, this storage is released half in February and re-stored up to 1 MAF in March to release during May through July. The flow augmentation will all be released by July 31 allowing Arrow to be on DOP16 elevation by 31 July. For trout spawning, Arrow outflow operates to minimum flow of 15,000 cfs in April 15, between 15,000 cfs and 25,000 cfs in April 30, between 15,000 cfs and 35,000 cfs in May-June. During April through June the outflow at Arrow can not decline unless the DOP16 balance by June 30 is too negative. Then the outflow is allowed to reduce up to 10,000 cfs in the April through June trout spawning period. The outflow at Arrow can be increased in May-June to keep the July discharge below 80,000 cfs.

- **Non-Treaty Storage Agreement (NTSA):** A total of 3 MAF NTSA storage and release is included in the study. Modeling the NTSA operations required plant data updates at Mica and Arrow to increase their maximum storage contents and their upper rule curves. The study includes the NTSA dry-year operations and spring-summer operations. The NTSA also includes operations driven by price, but this operation is not included in this study due to the complexities of incorporating price-based operating decisions.
  - **For Dry Year NTSA operation**
    - Release ½ MAF from Mica (or Arrow) in May-June in years if the April Final April-August volume forecast at The Dalles is less than 71.8 MAF.
    - Store ½ MAF into Mica (or Arrow) in November-June in years if the April Final April-August volume forecast at The Dalles is 91.4 MAF or higher.
    - Water that is stored in November-June should not violate the minimum flow requirements at Priest Rapids, Bonneville, and McNary and the Arrow trout/whitefish operations. Water that is released in May or June should not violate the Arrow trout spawning operation.
  - **For Spring-Summer NTSA operation**
    - Store up to 2½ MAF at Mica (or Arrow) in April 16 – June 30 if meeting Arrow Trout operation and exceeding 300,000 cfs outflow at McNary and minimum flow requirement at Priest. Do not store in May-June for years that Arrow’s outflow from the DOP study exceeds 80,000 cfs in August. The Canadians would not likely agree to the spring-summer provision when flows are forecasted to be that high.
    - Release in July-August the amount that was stored in April 16 – June 30 at Mica (or Arrow). If the release in July would result in McNary exceeding its flow target, then the release occurs in August without violating the 80,000 cfs maximum flow.
- **Priest Rapids** flow augmentation targets for Steelhead are modeled as 120,000 cfs during April 16-30, and 135,000 cfs in May.
- **Brownlee** drafts to 2062.0 feet (391.5 ksf) in July, 2059.0 feet (373.5 ksf) on August 15, 2055.0 feet (349.4 ksf) on August 31, 2048.0 feet (309.7 ksf) in September, and 2050.0 feet (320.4 ksf) in October. In November, Brownlee operates to meet the flow target of 9,000 cfs at Hells Canyon for Idaho Power Company (IPC) Fall Chinook operation, and Hells Canyon only exceeds the 9000 cfs flow when Brownlee drafts more due to the flood control URC. In December Brownlee targets elevation 2065.0 feet (409.5 ksf) but will draft deeper in order to meet the minimum flow of 9,000 cfs at Hells Canyon. In January Brownlee targets elevation 2060.0 feet (379.5 ksf) but will draft deeper in order to meet the minimum flow of 9,000 cfs at Hells Canyon. In February-May Brownlee maintains full content of 491.7 ksf (2077.0 ft) except when flood control URC or minimum flow at Hells Canyon of 9,000 cfs requires deeper drafts. In June Brownlee targets full except when a draft is needed to maintain a minimum flow of 7,000 cfs at Hells Canyon.
- **Dworshak** has a maximum discharge of 17,000 cfs in all periods to reflect typical actual operations and avoid exceeding 110 percent TDG level. February through June outflows are reshaped to reduce forced spill. July and August outflows are smoothed to reflect typical actual operations by using 11,000 cfs minimum in July and August 1-15, and a maximum 25 percent reduction from the first half of August to the second half of August.
- **Libby** has a September minimum flow of 6,000 cfs. In the fall, Libby minimizes October draft and maximizes December draft by targeting outflow of 4,000 cfs in October-November, and limiting outflow to 20,000 cfs maximum October-December. Libby can release above 4,000 cfs in October-November if the outflow in December exceeds 20,000 cfs. Libby’s outflow in May is based on a VarQ allowable refill calculation as used in actual operations. Libby’s June through September operation includes the sturgeon pulse, bull trout minimum required flows, and summer flow augmentation according to the Montana Proposal. Libby is allowed to fill above flood control to avoid spilling in January through March to reflect the actual operation.

- **Hungry Horse** will violate the flood control upper rule curve to keep its maximum outflow at 20,000 cfs or below. Hungry Horse has a maximum elevation of 3558 feet (1480.1 ksf) in June. Hungry Horse's summer draft is shaped to provide flat flows July through September where possible.
- **Grand Coulee** operates at elevation 1285 feet (2411.4 ksf) in September and between 1283 feet (2332.0 ksf) and 1288 feet (2532.0 ksf) in October. In November, it operates between 1275 feet (2027.1 ksf) and 1288 feet (2532.0 ksf). Grand Coulee can not fill above 1288 feet (2532.0 ksf) in December, January, and February. Grand Coulee drafts to support the Chum flow target January through March subject to the draft limits of about 10 feet below the computed fish VECC. Grand Coulee can draft further if needed to support the Vernita Bar flow requirement at Priest Rapids. The deepest draft limits at Grand Coulee for Vernita Bar minimum flow requirement and for Steelhead and Chum flow targets are: 1270 feet (1843.4 ksf) in December, 1260 feet (1489.1 ksf) in January, 1250 feet (1155.8 ksf) in February, and 1240 feet (843.8 ksf) in March-May. In all periods, Coulee can not draft below 1228 feet (500.1 ksf) unless it is on flood control operation. Coulee operates to the lower of 1288 feet (2532.0 ksf) or flood control in June. In June through August, Grand Coulee only fills above 1288 feet (2532.0 ksf) in order to reduce forced spill. Beside drafting in April through June for the Washington Columbia River Water Management Program (WCRWMP), the WCRWMP allows Coulee to draft an additional 1 foot in August; therefore, in August 1-15, the draft limit for BIOP flow augmentation is 1279 feet (2177.7 ksf) if July 1 April-August runoff at The Dalles is less than 92 MAF; otherwise the draft limit is 1281 feet (2254.4 ksf). In August 16-31, the draft limit is 1277 feet (2101.9 ksf) if the July 1 forecast April through August volume runoff at The Dalles is less than 92 MAF, otherwise the draft limit is 1279 feet (2177.7 ksf). Also, the Bureau performs maintenance during the spring on the spillway drum gates at least one year of every three years, at least two of every five years, and at least three of every seven years. Therefore, Coulee will not be required to draft for drum gate maintenance in the rate case for FY 2016. In the rate case for FY 2017 the drum gate modeling requirement is included. For modeling, this maintenance requires a maximum Lake Roosevelt elevation of 1277.5 feet (2120.9 ksf) at the end of February, 1255 feet (1319.7 ksf) from March through April 30. After meeting all modeling requirements, Grand Coulee's January through March operation is re-evaluated to put more generation in January and February or evenly distribute the secondary energy when possible without violating the one foot per day draft rate limit and other constraints in the study.
- **Columbia Basin Irrigation Project Pumping (Banks Lake)** is captured through the PNCA data submittal estimates of pumping, which are based on the average of the past five years actual pumping and include the equivalent of 5 feet (65.5 ksf) flow augmentation in August and the associated increase in pumping the following March-May period to return those 5 feet to Banks Lake. In years when this flow augmentation is not needed to meet the McNary flow augmentation target of 200,000 cfs, the pumping is increased by the equivalent of 5 feet in August and the following year's March-May pumping is decreased.



- **Juvenile Fish Bypass Spill** for the federal projects is summarized in the following table.

<b>Spill Criteria for BP16 Final Proposal</b>					
<b>Projects</b>	<b>Spill</b>	<b>Min Turb</b>	<b>Days</b>	<b>Hour Ending</b>	<b>Notes</b>
<b>Lower Granite</b>	20 kcfs 18 kcfs	11.5 kcfs	Apr 3 - Jun 20; Jun 21 - Aug 9	All hours	* All years
<b>Little Goose</b>	30% of total flow	11.5 kcfs	Apr 3 - Aug 17	All hours	* All years
<b>Lower Monumental</b>	gas cap; 17 kcfs	11.5 kcfs	Apr 3 - Jun 20; Jun 21 - Aug 19	All hours	* All years
<b>Ice Harbor</b>	45 kcfs day/ Gas cap night;	9.5 kcfs	Apr3 -Apr28	All hours	All years
	alternate 30% and 45 kcfs day/gas cap night		Apr 29 - Jul 13		
	45 kcfs day/ Gas cap night		Jul 14 - Aug 21		
<b>McNary</b>	40% of total flow	50 kcfs	April 10 - Jun 15	All hours	All years
	50% of total flow		Jun 16 - Aug 31		
<b>John Day</b>	30% of total flow	50 kcfs	Apr 10 - Apr 27	All hours	All years
	alternate 30% and 40 % of total flow		Apr 28 - Jul 20		
	30% of total flow		Jul 21 - Aug 31		
<b>The Dalles</b>	40% of total flow	50 kcfs	Apr 10 - Aug 31	All hours	All years
<b>Bonneville</b>	100 kcfs	30 kcfs	Apr 10 - Jun 15	All hours	All years
	alternating every 2 days: 85 kcfs day / 121 kcfs night and 95 kcfs		Jun 16 - Aug 31	All hours; day/night spill hours vary	Jun1-30 day hrs are 0430-2130; Jul1-31 day hrs are 0430-2200; Aug1-15 day hrs are 0500-2145; Aug16-31 day hrs are 0500-2030.

\*For FY 2017 assume max transport in years when the average spring flow (April through June) at Lower Granite is less than 55,000 cfs (1931, 1937, 1941, 1977, 1987, 1992, 1994, 2001). In these years, Lower Granite, Little Goose, and Lower Monumental do not spill for fish passage during April-June 4 and start summer spill on June 5.

- **Overgeneration Spill Priorities and TDG Caps** are summarized in the following table. One kcfs equals one thousand cfs. Spill up to the TDG levels in the order listed below to avoid generation levels that exceed the secondary market limit. This is called ‘overgen spill’ in HYDSIM. A variable secondary market limit is calculated in HYDSIM as needed to force the ‘overgen’ spill in each period to equal the estimated energy spilled due to lack of market from the AURORA model. The following are rough approximations of the typical amounts of spill that cause TDG to reach the specified percentage levels. (In actual operations, the spill at a certain gas level can vary significantly and operations are adjusted as necessary to manage to the appropriate gas level at the time.)

	<b>120%</b>	<b>125%</b>	<b>130%</b>	<b>135%</b>
LWG:	45 kcfs	63 kcfs	90 kcfs	200 kcfs
IHR <sup>1</sup> :	95 kcfs	110 kcfs	145 kcfs	240 kcfs
MCN <sup>2</sup> :	190 kcfs	230 kcfs	320 kcfs	375 kcfs
JDA <sup>3</sup> :	145 kcfs	190 kcfs	250 kcfs	300 kcfs
TDA <sup>4</sup> :	135 kcfs	270 kcfs	360 kcfs	400 kcfs
BON:	120 kcfs	215 kcfs	250 kcfs	300 kcfs
LMN <sup>5</sup> :	45 kcfs	80 kcfs	180 kcfs	250 kcfs
LGS <sup>6</sup> :	55 kcfs	70 kcfs	125 kcfs	175 kcfs
CHJ <sup>7</sup> :	115 kcfs	190 kcfs	280 kcfs	300 kcfs
GCL <sup>8</sup> :	50 kcfs	80 kcfs	120 kcfs	
GCL <sup>9</sup> :	15 kcfs	25 kcfs	42 kcfs	

<sup>1</sup> During all periods except July (92 kcfs gas cap at 120% TDG).

<sup>2</sup> During all periods except July (170 kcfs gas cap at 120% TDG and 321 kcfs at 130% TDG).

<sup>3</sup> During all periods except July (146 kcfs gas cap at 120% TDG).

<sup>4</sup> During all periods except July (269 kcfs gas cap at 125% TDG).

<sup>5</sup> During all periods except July (44 kcfs gas cap at 120% TDG).

<sup>6</sup> During all periods except July (177 kcfs gas cap at 135% TDG).

<sup>7</sup> 50 kcfs minimum turbine flow for CHJ included during ‘overgen’ spill.

<sup>8</sup> During July.

<sup>9</sup> During March-June when the reservoir is more likely below the spillway crest elevation 1260 feet and the regulating outlets must be used to spill.

**4. FEDERAL LOADS AND RESOURCES FOR FY 2016 AND FY 2017.....135**

4.1 Federal Loads and Resources

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**Table 4.1.1**  
**Loads and Resources - Federal System**  
**Fiscal Year: 2016 Water Year: 1937**  
**BP-2016 Final Rate Proposal Report Date: 6/9/2015**  
S124-RC-20150609-145700

Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<b>Firm Obligations</b>															
<b>1 Non-Utility Obligation</b>	304	257	276	260	252	288	457	457	522	527	595	494	493	443	390
2 Federal Agencies	101	128	147	145	135	126	109	109	100	92.2	101	103	103	94.9	115
3 USBR Obligation	111	37.9	37.6	22.9	25.2	70.9	256	256	330	344	404	299	299	257	183
4 DSI Obligation	91.4	91.2	91.2	91.3	91.0	91.0	91.4	91.4	90.9	90.7	90.7	91.0	91.0	90.9	91.1
<b>5 Transfers Out</b>	6499	8075	8659	8266	7870	7341	6707	6562	7170	6884	7046	7272	7028	6562	7347
6 Load Following	2677	3203	3637	3592	3350	3000	2856	2856	2776	2872	3130	3057	3060	2789	3079
7 Tier 1 Block	2.23	10.1	8.85	12.5	11.8	10.4	0.68	0.68	0	0	2.49	2.56	2.56	5.29	5.55
8 Slice Block	1630	2010	2233	2263	2019	1946	1639	1639	1448	1358	1579	1573	1573	1643	1778
9 Slice Output from T1 System	1664	2115	2045	1666	1767	1764	1577	1432	2417	2122	1775	1997	1746	1608	1860
10 Exports	512	502	500	499	495	502	512	512	515	517	543	627	631	502	519
11 Intra-Regional Transfers (Out)	13.8	236	235	234	227	119	122	122	14.5	14.4	15.8	14.8	14.8	13.7	104
12 Federal Diversity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>13 Total Firm Obligations</b>	<b>6803</b>	<b>8333</b>	<b>8934</b>	<b>8525</b>	<b>8121</b>	<b>7629</b>	<b>7164</b>	<b>7019</b>	<b>7692</b>	<b>7411</b>	<b>7641</b>	<b>7765</b>	<b>7521</b>	<b>7005</b>	<b>7736</b>
<b>Net Resources</b>															
<b>14 Net Hydro</b>	5747	7579	7300	5842	6228	6144	5650	5108	8892	7751	6525	7381	6383	5670	6663
15 Regulated Hydro - Net	5426	7308	7121	5696	6076	5892	5216	4663	8174	7087	6122	6998	6009	5363	6311
16 Independent Hydro - Net	321	271	179	145	152	251	434	445	718	664	403	383	374	307	353
<b>17 Other Resources</b>	1159	1143	1151	1136	1131	1170	1151	1135	1145	1168	1139	1129	1165	1147	1148
18 Cogeneration Resources	18.4	19.6	22.6	24.0	23.0	23.0	0	0	0	0	0	0	0	0	10.9
19 Combustion Turbines	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20 Large Thermal Resources	1075	1075	1075	1075	1075	1075	1075	1075	1075	1075	1075	1075	1075	1075	1075
21 Renewable Resources	62.9	45.5	50.3	34.2	29.4	69.4	73.1	56.7	67.2	90.3	60.9	51.2	87.5	69.4	59.6
22 Small Hydro Resources	2.67	2.84	3.19	3.21	3.04	3.10	3.09	3.09	2.83	2.72	2.63	2.63	2.63	2.63	2.88
23 Small Thermal & Misc.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>24 Contract Purchases</b>	209	224	221	214	211	232	225	222	219	230	209	221	217	201	218
25 Imports	12.1	29.4	28.5	30.2	28.8	28.5	16.2	16.2	1.00	1.00	1.00	1.00	1.00	1.00	14.9
26 Intra-Regional Transfers (In)	25.5	20.7	14.3	18.6	11.4	31.1	39.7	39.7	37.7	49.3	39.9	42.6	42.6	29.9	30.1
27 Non-Federal CER	140	133	139	134	137	139	139	139	135	139	135	139	141	139	137
28 Slice Transmission Loss Return	31.6	40.2	38.9	31.7	33.6	33.5	30.0	27.2	45.9	40.3	33.7	37.9	33.2	30.6	35.4
29 Augmentation Purchases	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>30 Reserves &amp; Losses</b>	-211	-266	-258	-214	-225	-224	-209	-192	-305	-272	-234	-259	-231	-208	-238

Table 4.1.1

Loads and Resources - Federal System

Fiscal Year: 2016 Water Year: 1937

BP-2016 Final Rate Proposal Report Date: 6/9/2015 *Continued*

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Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<sup>31</sup> Contingency Reserves (Spinning)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>32</sup> Contingency Reserves (Non-Spinning)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>33</sup> Load Following Reserves	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>34</sup> Generation Imbalance Reserves	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>35</sup> Transmission Losses	-211	-266	-258	-214	-225	-224	-209	-192	-305	-272	-234	-259	-231	-208	-238
<b><sup>36</sup> Total Net Resources</b>	<b>6904</b>	<b>8680</b>	<b>8414</b>	<b>6978</b>	<b>7345</b>	<b>7322</b>	<b>6818</b>	<b>6273</b>	<b>9952</b>	<b>8878</b>	<b>7639</b>	<b>8471</b>	<b>7534</b>	<b>6809</b>	<b>7791</b>
<b><sup>37</sup> Total Surplus/Deficit</b>	<b>102</b>	<b>347</b>	<b>-520</b>	<b>-1547</b>	<b>-776</b>	<b>-307</b>	<b>-346</b>	<b>-746</b>	<b>2260</b>	<b>1466</b>	<b>-1.83</b>	<b>706</b>	<b>13.0</b>	<b>-196</b>	<b>54.7</b>

**Table 4.1.1**  
**Loads and Resources - Federal System**  
**Fiscal Year: 2017 Water Year: 1937**  
**BP-2016 Final Rate Proposal Report Date: 6/9/2015**  
S124-RC-20150609-145700

Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<b>Firm Obligations</b>															
<b>1 Non-Utility Obligation</b>	305	259	277	264	259	291	459	460	524	530	598	497	496	446	393
2 Federal Agencies	102	129	148	150	143	129	113	112	103	94.9	104	106	106	97.5	118
3 USBR Obligation	111	37.9	37.6	22.9	25.2	70.9	255	257	330	344	404	299	299	257	184
4 DSI Obligation	91.4	91.2	91.2	91.3	91.0	91.0	91.6	91.2	90.9	90.7	90.7	91.0	91.0	90.9	91.1
<b>5 Transfers Out</b>	6524	8142	8716	8334	8082	7376	6837	6655	7111	6638	7037	7301	7059	6613	7373
6 Load Following	2683	3215	3640	3593	3420	2981	2864	2837	2765	2861	3124	3058	3061	2789	3081
7 Tier 1 Block	10.2	46.1	40.4	56.9	55.7	47.7	3.10	3.10	0	0	11.4	11.7	11.7	24.1	25.4
8 Slice Block	1662	2048	2276	2305	2130	1982	1671	1671	1477	1385	1609	1603	1603	1673	1817
9 Slice Output from T1 System	1658	2104	2034	1654	1753	1751	1654	1533	2347	1865	1746	1993	1743	1614	1833
10 Exports	498	493	491	491	488	494	524	490	508	513	532	622	626	498	512
11 Intra-Regional Transfers (Out)	13.8	236	235	234	234	119	122	122	14.5	14.4	15.8	14.8	14.8	13.7	105
12 Federal Diversity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>13 Total Firm Obligations</b>	<b>6828</b>	<b>8401</b>	<b>8993</b>	<b>8598</b>	<b>8341</b>	<b>7668</b>	<b>7296</b>	<b>7115</b>	<b>7636</b>	<b>7168</b>	<b>7635</b>	<b>7798</b>	<b>7555</b>	<b>7058</b>	<b>7766</b>
<b>Net Resources</b>															
<b>14 Net Hydro</b>	5747	7579	7300	5842	6228	6144	5975	5497	9345	7837	6520	7376	6382	5700	6741
15 Regulated Hydro - Net	5426	7308	7121	5696	6076	5892	5541	5052	8627	7174	6117	6993	6009	5393	6388
16 Independent Hydro - Net	321	271	179	145	152	251	434	445	718	664	403	383	374	307	353
<b>17 Other Resources</b>	1141	1123	1128	1112	1107	1148	1151	1135	417	93.1	1034	1129	1165	1147	979
18 Cogeneration Resources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 Combustion Turbines	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20 Large Thermal Resources	1075	1075	1075	1075	1075	1075	1075	1075	347	0	971	1075	1075	1075	916
21 Renewable Resources	62.9	45.5	50.3	34.2	29.4	69.4	73.1	56.7	67.2	90.3	60.9	51.2	87.5	69.4	59.7
22 Small Hydro Resources	2.67	2.84	3.19	3.21	3.05	3.10	3.09	3.09	2.83	2.72	2.63	2.63	2.63	2.63	2.88
23 Small Thermal & Misc.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>24 Contract Purchases</b>	273	280	273	265	263	285	292	278	303	305	289	301	297	281	284
25 Imports	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
26 Intra-Regional Transfers (In)	25.6	20.7	14.3	18.6	11.4	31.1	39.7	39.5	37.7	49.3	39.9	42.6	42.6	29.9	30.2
27 Non-Federal CER	134	138	138	134	137	139	139	128	139	139	134	139	140	139	137
28 Slice Transmission Loss Return	31.5	40.0	38.6	31.4	33.3	33.3	31.4	29.1	44.6	35.4	33.2	37.9	33.1	30.7	34.8
29 Augmentation Purchases	80.7	80.7	80.7	80.7	80.7	80.7	80.7	80.7	80.7	80.7	80.7	80.7	80.7	80.7	80.7
<b>30 Reserves &amp; Losses</b>	-213	-267	-258	-214	-226	-225	-220	-205	-299	-245	-233	-262	-233	-212	-238

Table 4.1.1

Loads and Resources - Federal System

Fiscal Year: 2017 Water Year: 1937

BP-2016 Final Rate Proposal Report Date: 6/9/2015 *Continued*

S124-RC-20150609-145700

Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<sup>31</sup> Contingency Reserves (Spinning)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>32</sup> Contingency Reserves (Non-Spinning)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>33</sup> Load Following Reserves	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>34</sup> Generation Imbalance Reserves	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>35</sup> Transmission Losses	-213	-267	-258	-214	-226	-225	-220	-205	-299	-245	-233	-262	-233	-212	-238
<b><sup>35</sup> Total Net Resources</b>	<b>6948</b>	<b>8716</b>	<b>8443</b>	<b>7005</b>	<b>7373</b>	<b>7351</b>	<b>7197</b>	<b>6705</b>	<b>9766</b>	<b>7991</b>	<b>7611</b>	<b>8544</b>	<b>7612</b>	<b>6916</b>	<b>7766</b>
<b><sup>37</sup> Total Surplus/Deficit</b>	<b>120</b>	<b>315</b>	<b>-550</b>	<b>-1593</b>	<b>-968</b>	<b>-316</b>	<b>-99.0</b>	<b>-410</b>	<b>2131</b>	<b>823</b>	<b>-24.3</b>	<b>746</b>	<b>56.7</b>	<b>-143</b>	<b>0</b>

**Table 4.1.2**  
**Loads and Resources - Federal System**  
**Fiscal Year: 2016 Water Year: 1937**  
**BP-2016 Final Rate Proposal Report Date: 6/9/2015**  
S124-RC-20150609-145700

HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<b>Firm Obligations</b>															
<b>1 Non-Utility Obligation</b>	109995	101053	108723	110360	101145	111595	97478	97478	195877	214040	214997	95018	102327	156455	1816540
2 Federal Agencies	44896	52995	61752	61188	54978	55138	23129	23129	43127	40424	44605	22799	24552	39560	592274
3 USBR Obligation	25897	11665	10868	11447	10009	18509	55433	55433	115150	137168	133259	53277	57375	82225	777714
4 DSI Obligation	39202	36393	36103	37726	36158	37948	18915	18915	37600	36448	37133	18943	20400	34670	446552
<b>5 Transfers Out</b>	3107967	3524914	3936868	3698739	3440234	3438581	1525648	1492385	3325593	3175850	3271949	1706145	1736570	2934013	40315458
6 Load Following	1239933	1355374	1604344	1561133	1417866	1368671	632102	632102	1223532	1282400	1393579	686220	739006	1211442	16347705
7 Tier 1 Block	963	3871	3682	4983	4710	4510	141	141	0	0	997	532	573	2114	27216
8 Slice Block	704221	771663	928993	905048	807476	840633	340932	340932	579259	564999	631767	327278	352453	657153	8752807
9 Slice Output from T1 System	794784	960264	947771	776191	788307	820570	355654	322391	1163050	980011	875038	496039	433379	718844	10432291
10 Exports	362149	345094	356927	356590	333822	355829	172169	172169	353773	342795	364048	193016	207863	339135	4255378
11 Intra-Regional Transfers (Out)	5917	88649	95152	94793	88055	48369	24649	24649	5980	5646	6521	3061	3296	5325	500061
12 Federal Diversity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>13 Total Firm Obligations</b>	<b>3217962</b>	<b>3625967</b>	<b>4045591</b>	<b>3809099</b>	<b>3541379</b>	<b>3550176</b>	<b>1623126</b>	<b>1589862</b>	<b>3521471</b>	<b>3389890</b>	<b>3486946</b>	<b>1801163</b>	<b>1838897</b>	<b>3090468</b>	<b>42131998</b>
<b>Net Resources</b>															
<b>14 Net Hydro</b>	2866518	3605157	3528154	2890900	2913547	2981276	1336484	1214236	4423262	3700337	3339833	1889631	1638130	2650504	38977969
15 Regulated Hydro - Net	2711264	3478954	3449627	2825172	2848732	2863057	1236301	1111843	4093740	3402740	3163131	1805860	1550769	2512737	37053927
16 Independent Hydro - Net	155254	126203	78527	65728	64815	118220	100183	102393	329523	297596	176702	83771	87361	137767	1924042
<b>17 Other Resources</b>	499388	438110	476519	456533	450080	504104	241461	233546	453845	482481	457426	232930	259340	460355	5646118
18 Cogeneration Resources	7936	7526	9406	9580	9212	9919	0	0	0	0	0	0	0	0	53579
19 Combustion Turbines	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20 Large Thermal Resources	464400	412800	447200	430000	430000	464400	223600	223600	430000	447200	430000	223600	240800	430000	5297600
21 Renewable Resources	25897	16685	18581	15654	9654	28450	17219	9304	22708	34151	26373	8782	17950	29303	280711
22 Small Hydro Resources	1155	1098	1333	1299	1214	1335	642	642	1137	1130	1053	548	590	1052	14229
23 Small Thermal & Misc.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>24 Contract Purchases</b>	133049	122647	127569	124247	120358	138093	67040	66408	133638	138902	128421	68288	71625	122732	1563016
25 Imports	3072	4646	4800	5469	4718	4872	1434	1434	400	416	400	208	224	400	32492
26 Intra-Regional Transfers (In)	10761	7534	5175	8428	5060	14187	8719	8719	14736	19606	14992	8525	9181	12272	147896
27 Non-Federal CER	104112	92219	99583	95600	95600	103441	50128	50128	96400	100256	96400	50128	53984	96400	1184379
28 Slice Transmission Loss Return	15104	18248	18011	14750	14980	15594	6759	6127	22102	18624	16629	9426	8236	13660	198249
29 Augmentation Purchases	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>30 Reserves &amp; Losses</b>	-103919	-123728	-122728	-103109	-103474	-107617	-48856	-44971	-148819	-128355	-116593	-65068	-58482	-96038	-1371757



Table 4.1.2

Loads and Resources - Federal System

Fiscal Year: 2016 Water Year: 1937

BP-2016 Final Rate Proposal Report Date: 6/9/2015 *Continued*

S124-RC-20150609-145700

HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<sup>31</sup> Contingency Reserves (Spinning)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>32</sup> Contingency Reserves (Non-Spinning)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>33</sup> Load Following Reserves	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>34</sup> Generation Imbalance Reserves	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>35</sup> Transmission Losses	-103919	-123728	-122728	-103109	-103474	-107617	-48856	-44971	-148819	-128355	-116593	-65068	-58482	-96038	-1371757
<b><sup>36</sup> Total Net Resources</b>	<b>3395036</b>	<b>4042186</b>	<b>4009514</b>	<b>3368571</b>	<b>3380511</b>	<b>3515856</b>	<b>1596129</b>	<b>1469219</b>	<b>4861927</b>	<b>4193365</b>	<b>3809087</b>	<b>2125780</b>	<b>1910613</b>	<b>3137553</b>	<b>44815346</b>
<b><sup>37</sup> Total Surplus/Deficit</b>	<b>177074</b>	<b>416219</b>	<b>-36077</b>	<b>-440528</b>	<b>-160868</b>	<b>-34320</b>	<b>-26997</b>	<b>-120644</b>	<b>1340456</b>	<b>803475</b>	<b>322140</b>	<b>324617</b>	<b>71715</b>	<b>47085</b>	<b>2683348</b>

Table 4.1.2

## Loads and Resources - Federal System

Fiscal Year: 2017 Water Year: 1937

BP-2016 Final Rate Proposal Report Date: 6/9/2015

S124-RC-20150609-145700

HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<b>Firm Obligations</b>															
<b>1 Non-Utility Obligation</b>	104914	103410	109283	112132	100221	113023	93459	86269	215062	215147	216250	95652	103009	157507	1825338
2 Federal Agencies	45460	53344	62312	62960	55878	56567	24775	22869	44082	41531	45859	23432	25235	40612	604916
3 USBR Obligation	20251	13672	10868	11447	9432	18509	49012	45242	133380	137168	133259	53277	57375	82225	775116
4 DSI Obligation	39202	36393	36103	37726	34911	37948	19672	18158	37600	36448	37133	18943	20400	34670	445306
<b>5 Transfers Out</b>	3077645	3598653	3955669	3699150	3391625	3456122	1573283	1449373	3330786	3069717	3267592	1713187	1743841	2956973	40283616
6 Load Following	1228649	1380873	1606951	1563226	1395510	1361598	648431	598552	1234776	1278746	1392752	687057	739907	1212728	16329755
7 Tier 1 Block	4237	18423	16823	22766	21395	20603	644	594	0	0	4553	2430	2617	9658	124743
8 Slice Block	691203	819024	946781	922160	818034	856360	347497	320766	614342	576232	643557	333399	359045	669316	8917715
9 Slice Output from T1 System	797177	951450	938438	744847	751515	818902	374811	343091	1125132	869582	862756	495209	432173	721994	10227075
10 Exports	350614	339966	351509	351358	317380	350323	176344	162779	350395	339526	357453	192031	206803	337953	4184434
11 Intra-Regional Transfers (Out)	5766	88917	95167	94793	87792	48335	25557	23591	6142	5632	6521	3061	3296	5325	499894
12 Federal Diversity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>13 Total Firm Obligations</b>	<b>3182558</b>	<b>3702063</b>	<b>4064952</b>	<b>3811283</b>	<b>3491846</b>	<b>3569145</b>	<b>1666742</b>	<b>1535642</b>	<b>3545849</b>	<b>3284864</b>	<b>3483842</b>	<b>1808838</b>	<b>1846850</b>	<b>3114480</b>	<b>42108955</b>
<b>Net Resources</b>															
<b>14 Net Hydro</b>	2891558	3561235	3501926	2780418	2789990	2985722	1410749	1295915	4576582	3720577	3334884	1889079	1636332	2667401	39042368
15 Regulated Hydro - Net	2736303	3435032	3423399	2714690	2727410	2867502	1310567	1193522	4247059	3422981	3158183	1805308	1548971	2529634	37120561
16 Independent Hydro - Net	155254	126203	78527	65728	62580	118220	100183	102393	329523	297596	176702	83771	87361	137767	1921807
<b>17 Other Resources</b>	474210	447825	467114	446953	423293	494185	241461	216304	168146	35281	415813	232930	259340	460355	4783210
18 Cogeneration Resources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 Combustion Turbines	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20 Large Thermal Resources	447200	430000	447200	430000	412800	464400	223600	206400	144258	0	388387	223600	240800	430000	4488645
21 Renewable Resources	25897	16685	18581	15654	9321	28450	17219	9304	22709	34151	26373	8782	17950	29303	280378
22 Small Hydro Resources	1113	1140	1333	1299	1172	1335	642	600	1179	1130	1053	548	590	1052	14187
23 Small Thermal & Misc.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>24 Contract Purchases</b>	159547	153943	156007	150838	142290	168142	82808	76383	170454	169962	160070	84851	89456	154675	1919426
25 Imports	416	400	416	400	384	432	208	192	416	416	400	208	224	400	4912
26 Intra-Regional Transfers (In)	10446	7808	5175	8428	4857	14187	8770	8095	15243	19606	14992	8525	9181	12272	147586
27 Non-Federal CER	99962	95371	99008	95573	91776	103096	49920	46080	99840	99840	96000	49920	53760	96000	1176146
28 Slice Transmission Loss Return	15149	18081	17833	14155	14281	15562	7123	6520	21381	16525	16395	9411	8213	13720	194349
29 Augmentation Purchases	33574	32283	33574	32283	30991	34865	16787	15496	33574	33574	32283	16787	18078	32283	396433
<b>30 Reserves &amp; Losses</b>	-104702	-123641	-122514	-100333	-99661	-108347	-51530	-47181	-145981	-116597	-116150	-65544	-58958	-97488	-1358627

Table 4.1.2

Loads and Resources - Federal System

Fiscal Year: 2017 Water Year: 1937

BP-2016 Final Rate Proposal Report Date: 6/9/2015 *Continued*

S124-RC-20150609-145700

HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<sup>31</sup> Contingency Reserves (Spinning)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>32</sup> Contingency Reserves (Non-Spinning)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>33</sup> Load Following Reserves	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>34</sup> Generation Imbalance Reserves	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>35</sup> Transmission Losses	-104702	-123641	-122514	-100333	-99661	-108347	-51530	-47181	-145981	-116597	-116150	-65544	-58958	-97488	-1358627
<b><sup>36</sup> Total Net Resources</b>	<b>3420613</b>	<b>4039362</b>	<b>4002532</b>	<b>3277877</b>	<b>3255912</b>	<b>3539702</b>	<b>1683488</b>	<b>1541421</b>	<b>4769200</b>	<b>3809223</b>	<b>3794618</b>	<b>2141316</b>	<b>1926169</b>	<b>3184942</b>	<b>44386377</b>
<b><sup>37</sup> Total Surplus/Deficit</b>	<b>238055</b>	<b>337299</b>	<b>-62420</b>	<b>-533405</b>	<b>-235934</b>	<b>-29442</b>	<b>16747</b>	<b>5779</b>	<b>1223352</b>	<b>524359</b>	<b>310775</b>	<b>332477</b>	<b>79319</b>	<b>70463</b>	<b>2277422</b>

**Table 4.1.3**  
**Loads and Resources - Federal System**  
**Fiscal Year: 2016 Water Year: 1937**  
**BP-2016 Final Rate Proposal Report Date: 6/9/2015**  
S124-RC-20150609-145700

LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<b>Firm Obligations</b>															
<b>1 Non-Utility Obligation</b>	116084	84553	96352	82734	74013	102239	66991	66991	192266	165696	227551	82705	87058	162613	1607846
2 Federal Agencies	30390	39506	47486	46896	39286	38367	16199	16199	31560	25985	30271	14380	15137	28742	420405
3 USBR Obligation	56871	15659	17122	5600	7559	34197	36803	36803	130711	110832	166957	54515	57385	103106	834119
4 DSI Obligation	28823	29388	31745	30238	27168	29675	13989	13989	29995	28879	30323	13809	14536	30766	353322
<b>5 Transfers Out</b>	1727135	2297515	2505267	2451131	2036994	2016017	888807	870045	2008820	1780356	1970217	911655	962285	1790411	24216654
6 Load Following	751634	954272	1101397	1111070	914047	860473	396097	396097	841720	785565	935009	414273	436077	796856	10694586
7 Tier 1 Block	695	3397	2903	4286	3485	3247	103	103	0	0	857	389	409	1691	21566
8 Slice Block	508595	677225	732475	778355	597538	605170	249140	249140	498172	412880	543329	239160	251747	525714	6868641
9 Slice Output from T1 System	443021	564506	573918	463433	441348	489901	212048	193286	635097	547544	445663	222745	237117	439099	5908726
10 Exports	18806	16565	14952	14448	10922	16882	12221	12221	29034	29640	40137	32832	34560	22513	305732
11 Intra-Regional Transfers (Out)	4384	81551	79622	79539	69654	40344	19197	19197	4796	4727	5222	2256	2375	4538	417403
12 Federal Diversity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>13 Total Firm Obligations</b>	<b>1843219</b>	<b>2382068</b>	<b>2601619</b>	<b>2533865</b>	<b>2111007</b>	<b>2118256</b>	<b>955798</b>	<b>937036</b>	<b>2201086</b>	<b>1946052</b>	<b>2197768</b>	<b>994360</b>	<b>1049343</b>	<b>1953024</b>	<b>25824500</b>
<b>Net Resources</b>															
<b>14 Net Hydro</b>	1409568	1859625	1902921	1455214	1421170	1583502	697517	624492	2192541	1880600	1514645	767429	812765	1431638	19553628
15 Regulated Hydro - Net	1325652	1790328	1848206	1412849	1380122	1515049	641402	566699	1987872	1700187	1391443	713429	756627	1348379	18378244
16 Independent Hydro - Net	83916	69297	54715	42365	41047	68454	56115	57793	204669	180414	123202	53999	56138	83259	1175384
<b>17 Other Resources</b>	362868	385928	379865	388920	336754	365568	172984	174967	398024	358524	389638	173450	188082	365507	4441078
18 Cogeneration Resources	5731	6605	7416	8239	6817	7141	0	0	0	0	0	0	0	0	41949
19 Combustion Turbines	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20 Large Thermal Resources	335400	362275	352600	369800	318200	334325	163400	163400	369800	326800	369800	163400	172000	344000	4145200
21 Renewable Resources	20902	16101	18811	9795	10838	23136	9114	11097	27252	30899	18932	9650	15661	20665	242853
22 Small Hydro Resources	835	947	1038	1086	899	967	470	470	972	826	906	400	421	842	11076
23 Small Thermal & Misc.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>24 Contract Purchases</b>	22592	38507	36576	35070	26574	34564	14006	13649	29599	26624	27351	11195	11835	21804	349944
25 Imports	5952	16542	16404	17028	15339	16331	4410	4410	344	304	344	152	160	320	98039
26 Intra-Regional Transfers (In)	8222	7413	5442	5411	2848	8923	5566	5566	13330	15914	14682	6810	7169	9283	116579
27 Non-Federal CER	0	3824	3824	3824	0	0	0	0	3856	0	3856	0	0	3856	23040
28 Slice Transmission Loss Return	8419	10728	10906	8807	8387	9310	4030	3673	12069	10405	8469	4233	4506	8344	112286
29 Augmentation Purchases	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>30 Reserves &amp; Losses</b>	-53312	-67837	-68885	-55812	-53000	-58914	-26270	-24149	-77819	-67293	-57370	-28277	-30077	-54023	-723036

Table 4.1.3

Loads and Resources - Federal System

Fiscal Year: 2016 Water Year: 1937

BP-2016 Final Rate Proposal Report Date: 6/9/2015 *Continued*

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LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<sup>31</sup> Contingency Reserves (Spinning)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>32</sup> Contingency Reserves (Non-Spinning)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>33</sup> Load Following Reserves	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>34</sup> Generation Imbalance Reserves	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>35</sup> Transmission Losses	-53312	-67837	-68885	-55812	-53000	-58914	-26270	-24149	-77819	-67293	-57370	-28277	-30077	-54023	-723036
<b><sup>36</sup> Total Net Resources</b>	<b>1741716</b>	<b>2216223</b>	<b>2250477</b>	<b>1823391</b>	<b>1731498</b>	<b>1924721</b>	<b>858237</b>	<b>788959</b>	<b>2542345</b>	<b>2198455</b>	<b>1874264</b>	<b>923797</b>	<b>982605</b>	<b>1764926</b>	<b>23621614</b>
<b><sup>37</sup> Total Surplus/Deficit</b>	<b>-101503</b>	<b>-165845</b>	<b>-351142</b>	<b>-710474</b>	<b>-379509</b>	<b>-193535</b>	<b>-97561</b>	<b>-148078</b>	<b>341259</b>	<b>252403</b>	<b>-323503</b>	<b>-70563</b>	<b>-66737</b>	<b>-188098</b>	<b>-2202886</b>

**Table 4.1.3**  
**Loads and Resources - Federal System**  
**Fiscal Year: 2017 Water Year: 1937**  
**BP-2016 Final Rate Proposal Report Date: 6/9/2015**  
S124-RC-20150609-145700

LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<b>Firm Obligations</b>															
<b>1 Non-Utility Obligation</b>	121818	83024	96808	84194	73797	103356	71893	79461	175082	166480	228440	83112	87487	163450	1618401
2 Federal Agencies	30478	39984	47941	48356	40035	39484	15750	17408	32607	26769	31160	14788	15566	29579	429904
3 USBR Obligation	62517	13651	17122	5600	7531	34197	42854	47365	112480	110832	166957	54515	57385	103106	836112
4 DSI Obligation	28823	29388	31745	30238	26231	29675	13289	14688	29995	28879	30323	13809	14536	30766	352385
<b>5 Transfers Out</b>	1775946	2271894	2529073	2501400	2039496	2024491	888037	946471	1960135	1709837	1968187	915319	966900	1804122	24301307
6 Load Following	767364	936858	1101457	1110143	903045	853539	382636	422914	822602	781038	931350	413654	435425	795623	10657648
7 Tier 1 Block	3341	14784	13264	19579	16046	14833	470	520	0	0	3916	1776	1869	7726	98124
8 Slice Block	544986	657253	746500	793073	613522	616492	253935	280665	484384	421089	553468	243633	256456	535443	7000899
9 Slice Output from T1 System	436024	565880	574517	485485	426547	482458	220461	208625	620975	473249	435915	222128	237225	439978	5829468
10 Exports	19695	15698	13714	13581	10756	16849	12224	13511	27527	29722	38315	31873	33551	20814	297832
11 Intra-Regional Transfers (Out)	4535	81420	79620	79539	69579	40321	18309	20237	4645	4739	5222	2256	2375	4538	417336
12 Federal Diversity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>13 Total Firm Obligations</b>	<b>1897763</b>	<b>2354917</b>	<b>2625880</b>	<b>2585594</b>	<b>2113293</b>	<b>2127847</b>	<b>959930</b>	<b>1025932</b>	<b>2135217</b>	<b>1876317</b>	<b>2196626</b>	<b>998432</b>	<b>1054386</b>	<b>1967572</b>	<b>25919708</b>
<b>Net Resources</b>															
<b>14 Net Hydro</b>	1384529	1903547	1929149	1565696	1395254	1579057	740185	683167	2376318	1922378	1516189	766338	814533	1436273	20012612
15 Regulated Hydro - Net	1300612	1834250	1874434	1523330	1355622	1510603	684070	625374	2171650	1741964	1392987	712339	758395	1353014	18838644
16 Independent Hydro - Net	83916	69297	54715	42365	39632	68454	56115	57793	204669	180414	123202	53999	56138	83259	1173968
<b>17 Other Resources</b>	374378	362081	372449	380681	320943	358428	172984	192209	141923	31724	353851	173450	188082	365507	3788690
18 Cogeneration Resources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 Combustion Turbines	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20 Large Thermal Resources	352600	345075	352600	369800	309600	334325	163400	180600	113742	0	334013	163400	172000	344000	3535155
21 Renewable Resources	20902	16101	18811	9795	10464	23136	9114	11097	27252	30899	18932	9650	15661	20665	242479
22 Small Hydro Resources	877	905	1038	1086	878	967	470	512	930	826	906	400	421	842	11055
23 Small Thermal & Misc.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>24 Contract Purchases</b>	43663	47913	46967	46552	34408	43502	22143	23808	55249	49747	54913	23451	24750	47631	564697
25 Imports	328	321	328	344	288	311	152	168	328	304	344	152	160	320	3848
26 Intra-Regional Transfers (In)	8578	7124	5442	5411	2770	8923	5534	6117	12809	15914	14682	6810	7169	9283	116565
27 Non-Federal CER	0	3808	3808	3808	0	0	0	0	3840	0	3840	0	0	3840	22943
28 Slice Transmission Loss Return	8286	10754	10918	9226	8106	9168	4190	3965	11801	8993	8284	4221	4508	8361	110780
29 Augmentation Purchases	26472	25907	26472	27763	23244	25100	12267	13559	26472	24535	27763	12267	12913	25826	310561
<b>30 Reserves &amp; Losses</b>	-53536	-68712	-69752	-59190	-51993	-58835	-27779	-26706	-76433	-59514	-57171	-28608	-30513	-54927	-723670

Table 4.1.3

Loads and Resources - Federal System

Fiscal Year: 2017 Water Year: 1937

BP-2016 Final Rate Proposal Report Date: 6/9/2015 *Continued*

S124-RC-20150609-145700

LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<sup>31</sup> Contingency Reserves (Spinning)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>32</sup> Contingency Reserves (Non-Spinning)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>33</sup> Load Following Reserves	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>34</sup> Generation Imbalance Reserves	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>35</sup> Transmission Losses	-53536	-68712	-69752	-59190	-51993	-58835	-27779	-26706	-76433	-59514	-57171	-28608	-30513	-54927	-723670
<b><sup>36</sup> Total Net Resources</b>	<b>1749034</b>	<b>2244829</b>	<b>2278813</b>	<b>1933739</b>	<b>1698611</b>	<b>1922151</b>	<b>907533</b>	<b>872478</b>	<b>2497058</b>	<b>1944335</b>	<b>1867781</b>	<b>934631</b>	<b>996852</b>	<b>1794483</b>	<b>23642328</b>
<b><sup>37</sup> Total Surplus/Deficit</b>	<b>-148729</b>	<b>-110088</b>	<b>-347068</b>	<b>-651855</b>	<b>-414682</b>	<b>-205696</b>	<b>-52397</b>	<b>-153454</b>	<b>361841</b>	<b>68018</b>	<b>-328845</b>	<b>-63801</b>	<b>-57535</b>	<b>-173090</b>	<b>-2277380</b>

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