

**2010 BPA Rate Case  
Wholesale Power Rate Final Proposal**

**LOADS AND RESOURCES  
STUDY DOCUMENTATION**

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July 2009

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WP-10-FS-BPA-01A



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## COMMONLY USED ACRONYMS

AC	alternating current
AFUDC	Allowance for Funds Used During Construction
AGC	Automatic Generation Control
ALF	Agency Load Forecast (computer model)
aMW	average megawatt
AMNR	Accumulated Modified Net Revenues
ANR	Accumulated Net Revenues
AOP	Assured Operating Plan
ASC	Average System Cost
ATC	Accrual to Cash
BAA	Balancing Authority Area
BASC	BPA Average System Cost
Bcf	billion cubic feet
BiOp	Biological Opinion
BPA	Bonneville Power Administration
Btu	British thermal unit
CAISO	California Independent System Operator
CBFWA	Columbia Basin Fish & Wildlife Authority
CCCT	combined-cycle combustion turbine
cfs	cubic feet per second
CGS	Columbia Generating Station
CHJ	Chief Joseph
C/M	consumers per mile of line ratio for LDD
COB	California-Oregon Border
COE	U.S. Army Corps of Engineers
COI	California-Oregon Intertie
COSA	Cost of Service Analysis
COU	consumer-owned utility
Council	Northwest Power and Conservation Council
CP	Coincidental Peak
CRAC	Cost Recovery Adjustment Clause
CRC	Conservation Rate Credit
CRFM	Columbia River Fish Mitigation
CRITFC	Columbia River Inter-Tribal Fish Commission
CSP	Customer System Peak
CT	combustion turbine
CY	calendar year (January through December)
DC	direct current
DDC	Dividend Distribution Clause
dec	decremental (pertains to generation movement)
DJ	Dow Jones
DO	Debt Optimization
DOE	Department of Energy
DOP	Debt Optimization Program
DSI	direct-service industrial customer or direct-service industry

DSO	Dispatcher Standing Order
EAF	energy allocation factor
ECC	Energy Content Curve
EIA	Energy Information Administration
EIS	Environmental Impact Statement
EN	Energy Northwest, Inc. (formerly Washington Public Power Supply System)
EPA	Environmental Protection Agency
EPP	Environmentally Preferred Power
EQR	Electric Quarterly Report
ESA	Endangered Species Act
F&O	financial and operating reports
FBS	Federal base system
FCRPS	Federal Columbia River Power System
FCRTS	Federal Columbia River Transmission System
FERC	Federal Energy Regulatory Commission
FELCC	firm energy load carrying capability
FPA	Federal Power Act
FPS	Firm Power Products and Services (rate)
FY	fiscal year (October through September)
GAAP	Generally Accepted Accounting Principles
GARD	Generation and Reserves Dispatch (computer model)
GCL	Grand Coulee
GCPs	General Contract Provisions
GEP	Green Energy Premium
GI	Generation Integration
GRI	Gas Research Institute
GRSPs	General Rate Schedule Provisions
GSP	Generation System Peak
GSU	generator step-up transformers
GTA	General Transfer Agreement
GWh	gigawatthour
HLH	heavy load hour
HOSS	Hourly Operating and Scheduling Simulator (computer model)
HYDSIM	Hydro Simulation (computer model)
IDC	interest during construction
inc	incremental (pertains to generation movement)
IOU	investor-owned utility
IP	Industrial Firm Power (rate)
IPR	Integrated Program Review
IRP	Integrated Resource Plan
ISD	incremental standard deviation
ISO	Independent System Operator
JDA	John Day
kaf	thousand (kilo) acre-feet
kcfs	thousand (kilo) cubic feet per second
K/I	kilowatthour per investment ratio for LDD

ksfd	thousand (kilo) second foot day
kV	kilovolt (1000 volts)
kVA	kilo volt-ampere (1000 volt-amperes)
kVAr	kilo-volt ampere reactive
kW	kilowatt (1000 watts)
kWh	kilowatthour
LDD	Low Density Discount
LGIP	Large Generator Interconnection Procedures
LLH	light load hour
LME	London Metal Exchange
LOLP	loss of load probability
LRA	Load Reduction Agreement
m/kWh	mills per kilowatthour
MAE	mean absolute error
Maf	million acre-feet
MCA	Marginal Cost Analysis
MCN	McNary
Mid-C	Mid-Columbia
MIP	Minimum Irrigation Pool
MMBtu	million British thermal units
MNR	Modified Net Revenues
MOA	Memorandum of Agreement
MOP	Minimum Operating Pool
MORC	Minimum Operating Reliability Criteria
MOU	Memorandum of Understanding
MRNR	Minimum Required Net Revenue
MVA	mega-volt ampere
MVAr	mega-volt ampere reactive
MW	megawatt (1 million watts)
MWh	megawatthour
NCD	non-coincidental demand
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
NOAA Fisheries	National Oceanographic and Atmospheric Administration Fisheries (officially National Marine Fisheries Service)
NOB	Nevada-Oregon Border
NORM	Non-Operating Risk Model (computer model)
Northwest Power Act	Pacific Northwest Electric Power Planning and Conservation Act
NPCC	Northwest Power and Conservation Council
NPV	net present value
NR	New Resource Firm Power (rate)
NT	Network Transmission

NTSA	Non-Treaty Storage Agreement
NUG	non-utility generation
NWPP	Northwest Power Pool
OATT	Open Access Transmission Tariff
O&M	operation and maintenance
OMB	Office of Management and Budget
OTC	Operating Transfer Capability
OY	operating year (August through July)
PDP	proportional draft points
PF	Priority Firm Power (rate)
PI	Plant Information
PMA	(Federal) Power Marketing Agency
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
POM	Point of Metering
POR	Point of Receipt
Project Act	Bonneville Project Act
PS	BPA Power Services
PSC	power sales contract
PSW	Pacific Southwest
PTP	Point to Point Transmission (rate)
PUD	public or people's utility district
RAM	Rate Analysis Model (computer model)
RAS	Remedial Action Scheme
Reclamation	U.S. Bureau of Reclamation
RD	Regional Dialogue
REC	Renewable Energy Certificate
REP	Residential Exchange Program
RevSim	Revenue Simulation Model (component of RiskMod)
RFA	Revenue Forecast Application (database)
RFP	Request for Proposal
RiskMod	Risk Analysis Model (computer model)
RiskSim	Risk Simulation Model (component of RiskMod)
RMS	Remote Metering System
RMSE	root-mean squared error
ROD	Record of Decision
RPSA	Residential Purchase and Sale Agreement
RTF	Regional Technical Forum
RTO	Regional Transmission Operator
SCADA	Supervisory Control and Data Acquisition
SCCT	single-cycle combustion turbine
Slice	Slice of the System (product)
SME	subject matter expert
TAC	Targeted Adjustment Charge



TDA	The Dalles
Tcf	trillion cubic feet
TPP	Treasury Payment Probability
Transmission System Act	Federal Columbia River Transmission System Act
TRL	Total Retail Load
TRM	Tiered Rate Methodology
TS	BPA Transmission Services
UAI	Unauthorized Increase
UDC	utility distribution company
URC	Upper Rule Curve
USFWS	U.S. Fish and Wildlife Service
VOR	Value of Reserves
WECC	Western Electricity Coordinating Council (formerly WSCC)
WIT	Wind Integration Team
WPRDS	Wholesale Power Rate Development Study
WREGIS	Western Renewable Energy Generation Information System
WSPP	Western Systems Power Pool

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## **1. LOADS AND RESOURCES OVERVIEW**

The Loads and Resources Documentation presents the load, sales, contract, and resource data necessary for developing Bonneville Power Administration's (BPA) wholesale power rates used in the Loads and Resources Study,

WP-10-FS-BPA-01. This data is used to:

- (1) Provide base data to determine resource costs for the Revenue Requirements Study, WP-10-FS-BPA-02;
- (2) Provide base data to derive billing determinants for revenue forecasts in the Wholesale Power Rate Development Study (WPRDS), WP-10-FS-BPA-05;
- (3) Provide load and resource data for use in calculating risk in the Risk Analysis and Mitigation Study, WP-10-FS-BPA-04; and
- (4) Provide regional hydro data for use in the secondary revenue forecast for the Market Price Forecast Study, WP-10-FS-BPA-03.

## **2. DOCUMENTATION FOR THE LOADS AND RESOURCES STUDY**

### **2.1 Federal System Load Obligations**

BPA forecasts power sales contracts to three main customer groups: public body and cooperative utilities and Federal agencies (together called "Public Agencies"), investor-owned utilities (IOU), and direct service industrial customers (DSI). These power sales contract forecasts, together with additional inter-regional contracts obligations, termed imports, and intra-regional contractual obligations, constitute the Federal system firm load forecast used in BPA's 2010 Wholesale Power Rate Case Final Proposal Load Resource Study, WP-10-FS-BPA-01. The following tables document the resulting tables methodologies and assumptions employed in developing BPA's sales forecasts.

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**2.2 PUBLIC AGENCIES SALES OBLIGATION FORECAST**

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**Table 2.2.1**  
**Projected PF Full and Partial Service Sales (excluding Slice deliveries)**

	Full Service			Partial Service			Load Variance
	HLH (aMW)	LLH (aMW)	GSP (MW)	HLH (aMW)	LLH (aMW)	GSP (MW)	
FY2010	1,227	804	3,259	837	576	2,130	3,936
FY2011	1,255	818	3,315	858	588	2,185	4,009

	HLH (MWh)	LLH (MWh)	GSP (MW)	HLH (MWh)	LLH (MWh)	GSP (MW)	(MWh)
Oct-09	868,019	532,311	2,647	594,585	374,098	1,818	2,649,602
Nov-09	950,375	649,671	2,772	637,864	472,510	2,012	2,994,817
Dec-09	1,094,214	752,495	3,102	709,471	516,928	2,125	3,388,003
Jan-10	1,106,820	755,470	3,259	697,345	514,042	2,130	3,379,796
Feb-10	971,371	624,039	3,110	635,627	426,100	2,069	2,938,079
Mar-10	933,852	583,001	2,696	632,026	412,344	1,880	2,858,495
Apr-10	868,535	555,217	2,451	601,460	400,825	1,796	2,713,345
May-10	776,697	525,046	2,109	554,032	421,913	1,592	2,726,132
Jun-10	760,238	465,047	2,176	559,891	364,135	1,549	2,664,210
Jul-10	768,609	560,100	2,534	559,012	398,057	1,734	2,822,397
Aug-10	823,310	496,469	2,372	603,015	372,485	1,637	2,788,451
Sep-10	828,640	547,300	2,221	548,216	376,593	1,581	2,559,924
Oct-10	881,958	548,941	2,700	600,387	395,697	1,859	2,707,247
Nov-10	974,821	659,309	2,827	663,754	469,853	2,080	3,051,870
Dec-10	1,114,974	767,647	3,160	719,657	524,040	2,179	3,440,944
Jan-11	1,124,035	767,531	3,315	712,849	524,636	2,185	3,435,095
Feb-11	984,592	632,561	3,166	650,689	435,709	2,124	2,984,408
Mar-11	951,027	594,240	2,747	647,166	421,784	1,932	2,911,392
Apr-11	885,075	566,485	2,498	615,998	410,159	1,848	2,765,100
May-11	793,532	536,972	2,151	566,635	430,460	1,640	2,775,969
Jun-11	777,597	475,914	2,219	572,834	372,023	1,598	2,713,362
Jul-11	813,047	551,822	2,580	572,967	409,192	1,762	2,883,759
Aug-11	848,261	503,705	2,419	627,974	369,937	1,699	2,842,895
Sep-11	845,495	558,789	2,266	561,454	385,204	1,632	2,609,964

**Table 2.2.2**  
**Projected PF Block and Slice Block Sales (excluding Slice deliveries)**

	Block			Slice Block			
	HLH (aMW)	LLH (aMW)	GSP (MW)	HLH (aMW)	LLH (aMW)	GSP (MW)	Load Variance
FY2010	368	248	846	638	512	1,571	0
FY2011	364	246	846	641	515	1,571	0

	HLH (MWh)	LLH (MWh)	GSP (MW)	HLH (MWh)	LLH (MWh)	GSP (MW)	
Oct-09	223,633	148,253	621	484,409	349,851	1,121	0
Nov-09	253,952	176,762	765	523,592	459,531	1,364	0
Dec-09	304,670	198,470	824	636,549	501,895	1,530	0
Jan-10	292,587	200,156	844	628,567	540,568	1,571	0
Feb-10	274,361	181,232	846	591,011	443,259	1,539	0
Mar-10	300,630	197,239	846	597,660	430,235	1,383	0
Apr-10	293,035	195,714	790	426,162	311,426	1,020	0
May-10	291,391	210,344	824	269,932	255,358	916	0
Jun-10	270,843	183,280	694	255,833	204,989	954	0
Jul-10	266,736	180,513	658	304,374	268,600	1,116	0
Aug-10	226,797	155,736	574	373,472	317,597	1,207	0
Sep-10	222,840	148,442	594	497,445	397,956	1,244	0
Oct-10	220,811	151,075	635	466,468	367,792	1,121	0
Nov-10	256,893	174,541	747	545,408	437,715	1,364	0
Dec-10	304,670	198,470	824	636,549	501,895	1,530	0
Jan-11	292,587	200,156	844	628,567	540,568	1,571	0
Feb-11	274,361	181,232	846	591,011	443,259	1,539	0
Mar-11	300,630	197,239	846	597,660	430,235	1,383	0
Apr-11	293,035	195,714	791	426,162	311,426	1,020	0
May-11	262,947	184,302	673	290,121	287,216	1,119	0
Jun-11	270,843	183,280	694	255,833	204,989	954	0
Jul-11	262,947	184,302	673	290,121	287,216	1,119	0
Aug-11	229,713	152,820	560	390,526	297,707	1,209	0
Sep-11	222,840	148,442	594	497,445	397,956	1,244	0

**Table 2.2.3  
Full Service Customers**

Albion, City of	Fairchild AFB	Parkland L & W
Alder Mutual	Farmers Elec Coop	Peninsula Light Company
Ashland, City of	Ferry County PUD #1	Plummer, City of
Asotin County PUD #1	Forest Grove, City of	Port Angeles, City of
Bandon, City of	Harney Elec Coop	Port of Seattle
Benton REA	Hermiston, City of	Puget Sound Naval Shipyard (Bremerton)
Big Bend Elec Coop	Heyburn, City of	Richland, City of
Blaine, City of	Hood River Elec Coop	Riverside Elec Coop
Bonnars Ferry, City of	Idaho County L & P	Rupert, City of
Burley, City of	Inland P & L	Salem Elec Coop
Canby, City of	Kittitas County PUD #1	Skamania County PUD #1
Cascade Locks, City of	Kootenai Electric Coop	Soda Springs, City of
Central MT Elec Power Coop	Lakeview L & P (WA)	Southern MT G&T
Centralia, City of	Lewis County PUD #1	Southside Elec Lines
Cheney, City of	Lower Valley P & L	Steilacoom, Town of
Chewelah, City of	Mason County PUD #1	Sumas, Town of
Clallam County PUD #1	Mason County PUD #3	Surprise Valley Elec Coop
Columbia Basin Elec Coop	McCleary, City of	Tanner Elec Coop
Columbia Power Coop	Midstate Elec Coop	Tillamook PUD #1
Columbia REA	Milton Freewater, City of	U.S. Bureau of Mines
Columbia River PUD	Milton, Town of	U.S. Naval Station, Everett (Jim Creek)
Consol Irrig Dist #19	Minidoka, City of	U.S. Naval Submarine Base,(Bangor)
Coulee Dam, City of	Modern Elec Coop	Umpqua Indian Utility Cooperative
Declo, City of	Monmouth, City of	United Electric Coop
Drain, City of	Nespelem Valley Elec Coop	USBIA Wapato
East End Mutual Electric	Northern Wasco County PUD	USDOE-Richland
Eatonville, City of	Ohop Mutual Light Company	Vera Irrigation District
Ellensburg, City of	Orcas P & L	Wahkiakum County PUD #1
Elmhurst Mutual P & L	Oregon Trail Coop	Wasco Elec Coop
Emerald County PUD	Pacific County PUD #2	Whatcom County PUD #1
Energy Northwest		Yakama Power



**Table 2.2.4  
Partial Service Customers**

Central Lincoln	Flathead	Springfield
Clark	Klickitat	Wells
Cowlitz	McMinnville	

**Table 2.2.5  
Slice/Slice Block Service Customers**

Benton PUD	Fall River	Pend Oreille
Blachly-Lane	Franklin	Raft River
Central Electric	Grays Harbor	Salmon River
Clatskanie	Idaho Falls	Seattle
Clearwater	Lane Electric	Snohomish
Consumers Power	Lost River	Umatilla
Coos-Curry	Northern Lights	West Oregon
Douglas Electric	Okanogan Coop	
EWEB	Okanogan PUD	

**Table 2.2.6  
PF Block Service Customers**

Grant	Tacoma	
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**Table 2.2.7**  
**ASC Total Retail Load Forecasts (MWh)**  
**for FY 2010-2015**

MWh	Rate Period		7(b)(2) Rate Test Period			
	2010	2011	2012	2013	2014	2015
Avista	9,303,369	9,467,224	9,665,785	9,846,461	10,082,239	10,364,177
Franklin County PUD	1,002,000	1,018,000	1,034,000	1,049,000	1,064,218	1,079,656
NorthWestern	5,984,534	6,060,357	6,137,896	6,216,581	6,296,430	6,377,459
PacifiCorp	22,207,898	22,427,330	22,654,332	22,880,278	23,337,884	23,804,641
Portland General Electric	18,573,814	18,863,984	19,169,620	19,516,498	19,920,821	20,318,515
Puget Sound Energy	22,065,655	22,263,626	22,380,156	22,523,578	22,684,658	22,871,655
Idaho Power	15,214,573	15,543,784	15,794,344	15,929,677	16,106,684	16,269,278
Snohomish County PUD	7,001,128	7,097,109	7,193,772	7,259,084	7,320,442	7,383,922

**Table 2.2.8**  
**Residential and Small Farm Retail Load Forecasts (MWh)**  
**for FY 2010-2015**

MWh	Rate Period		7(b)(2) Rate Test Period			
	2010	2011	2012	2013	2014	2015
Avista	3,793,631	3,839,114	3,700,715	3,836,507	3,900,396	4,005,616
Franklin PUD	337,154	345,413	350,842	355,931	361,095	366,333
Idaho Power	6,091,913	6,244,404	5,943,592	5,990,357	6,064,650	6,134,773
NorthWestern	593,782	601,326	609,020	616,827	624,750	632,790
PacifiCorp	9,288,804	9,380,585	9,475,532	9,570,037	9,761,438	9,956,667
Portland General	8,301,944	8,384,570	8,520,417	8,674,596	8,854,307	9,031,073
Puget Sound Energy	11,353,850	11,478,752	11,667,955	11,948,236	12,335,634	12,857,454
Snohomish PUD	3,577,877	3,639,288	3,700,556	3,757,008	3,810,864	3,866,481

**ENERGY ANALYSIS**

**2.3 FEDERAL SYSTEM LOAD RESOURCE BALANCE-ENERGY ANALYSIS**  
**Monthly Energy in Average Megawatts**

Table 2.3.1      FY 2010 Loads and Resources-Federal System .....10  
Table 2.3.2      FY 2011 Loads and Resources-Federal System .....12

**Loads and Resources - Federal System**  
**PNW Loads and Resource Study**  
**2009 - 2010 Fiscal Year**  
**1937 Water Year**  
**[59] 2010 Final Rate Case - 30 Minute Wind (Final)**

7/21/2009

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<b>Non-Utility Obligations</b>															
<i>Fed. Agencies 2002 PSC</i>	106	126	139	145	137	124	114	114	108	105	117	118	120	109	121
<i>USBR 2002 PSC</i>	94	14	31	70	79	50	224	224	289	286	310	256	256	219	161
<i>DSI 2002 PSC</i>	402	402	402	402	402	402	402	402	402	402	402	402	402	402	402
<i>Fed. Agencies 2012 PSC</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>USBR 2012 PSC</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>DSI 2012 PSC</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Total Firm Non-Utility Obligations</i>	603	542	572	617	618	577	740	740	799	793	829	776	778	729	683
<b>Transfers Out</b>															
<i>NGP 2002 PSC</i>	2776	3207	3586	3647	3476	3011	2922	2922	2907	3033	3229	3106	3138	2849	3146
<i>GPU 2002 PSC</i>	2015	2505	2756	2719	2695	2481	2135	2135	1935	1831	1896	1964	1976	2093	2250
<i>NGP 2002 Slice PSC</i>	576	681	655	659	588	555	431	466	744	635	622	673	572	563	613
<i>GPU 2002 Slice PSC</i>	959	1134	1091	1098	979	924	718	776	1238	1057	1036	1120	952	938	1021
<i>IOU 2002 PSC</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>NGP 2012 PSC</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>GPU 2012 PSC</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>NGP 2012 Slice PSC</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>GPU 2012 Slice PSC</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>IOU 2012 PSC</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Exports</i>	694	693	701	693	691	694	725	728	756	759	749	697	695	686	712
<i>Regional Transfers (Out)</i>	328	639	670	693	657	523	488	459	451	266	266	451	437	253	471
<i>Federal Diversity</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Total Transfers Out</i>	7348	8860	9458	9509	9085	8189	7420	7486	8031	7582	7797	8010	7771	7383	8212
<i>Total Firm Obligations</i>	7950	9403	10030	10126	9703	8765	8159	8225	8830	8374	8627	8786	8548	8112	8896
<b>Hydro Resources</b>															
<i>Regulated Hydro</i>	6079	7302	7093	7197	6345	5812	4367	4756	7896	6522	6684	7252	6040	5928	6510
<i>Independent Hydro</i>	336	297	210	188	186	275	402	438	730	783	496	456	436	421	400
<i>Operational Peaking Adj.</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Non-Fed CER (Canada)</i>	137	137	137	137	137	137	141	141	141	141	141	141	141	141	139
<i>Total Hydro Resources</i>	6552	7736	7440	7522	6669	6224	4910	5335	8767	7446	7322	7850	6617	6490	7049
<b>Other Resources</b>															
<i>Small Thermal &amp; Misc.</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Combustion Turbines</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Renewables</i>	57	61	59	62	60	81	74	70	74	80	66	54	68	52	65
<i>Cogeneration</i>	22	25	26	27	27	26	25	25	22	12	20	20	20	21	23
<i>Imports</i>	217	297	367	367	344	332	330	270	136	134	165	171	155	155	248
<i>Regional Transfers (In)</i>	244	302	232	249	241	218	216	217	220	234	214	223	236	248	237
<i>Large Thermal</i>	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030
<i>Non-Utility Generation</i>	13	26	30	29	26	25	45	45	41	27	19	27	25	9.0	26
<i>Augmentation Purchases</i>	476	476	476	476	476	476	476	476	476	476	476	476	476	476	476
<i>Augmentation Resources</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Total Other Resources</i>	2059	2216	2220	2241	2203	2187	2195	2133	1999	1993	1990	2001	2009	1990	2105
<i>Total Resources</i>	8611	9952	9659	9763	8872	8411	7105	7468	10766	9439	9311	9851	8627	8480	9154
<b>Reserves &amp; Maintenance</b>															
<i>Contingency Reserves (Non-Spinning)</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Contingency Reserves (Spinning)</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Generation Imbalance Reserves</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Load Following Reserves</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Federal Hydro Maintenance</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Federal Transmission Losses</i>	-243	-281	-272	-275	-250	-237	-200	-211	-304	-266	-263	-278	-243	-239	-258

Loads and Resources - Federal System  
 PNW Loads and Resource Study  
 2009 - 2010 Fiscal Year  
 1937 Water Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

Continued

7/21/2009

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<i>Total Reserves, Maintenance &amp; Losses</i>	-243	-281	-272	-275	-250	-237	-200	-211	-304	-266	-263	-278	-243	-239	-258
<i>Total Net Resources</i>	8368	9672	9387	9488	8621	8174	6905	7257	10462	9173	9049	9573	8383	8241	8896
<i>Total Firm Surplus/Deficit</i>	418	269	-643	-638	-1082	-592	-1255	-968	1632	799	422	787	-165	129	0

**Loads and Resources - Federal System**  
**PNW Loads and Resource Study**  
**2010 - 2011 Fiscal Year**  
**1937 Water Year**  
**[59] 2010 Final Rate Case - 30 Minute Wind (Final)**

7/21/2009

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<b>Non-Utility Obligations</b>															
<i>Fed. Agencies 2002 PSC</i>	110	130	143	148	140	126	115	115	110	107	119	121	121	110	123
<i>USBR 2002 PSC</i>	94	14	31	70	79	50	224	224	289	286	310	256	256	219	161
<i>DSI 2002 PSC</i>	402	402	402	402	402	402	402	402	402	402	402	402	402	402	402
<i>Fed. Agencies 2012 PSC</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>USBR 2012 PSC</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>DSI 2012 PSC</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Total Firm Non-Utility Obligations</i>	606	547	577	620	621	579	742	742	801	794	831	779	779	731	686
<b>Transfers Out</b>															
<i>NGP 2002 PSC</i>	2834	3265	3636	3703	3524	3064	2974	2974	2956	3082	3293	3170	3172	2895	3199
<i>GPU 2002 PSC</i>	2014	2507	2756	2719	2696	2481	2136	2136	1935	1831	1898	1965	1966	2093	2250
<i>NGP 2002 Slice PSC</i>	580	686	660	663	592	559	395	385	663	554	615	674	573	565	596
<i>GPU 2002 Slice PSC</i>	967	1142	1098	1105	986	931	658	641	1103	922	1024	1122	955	940	993
<i>IOU 2002 PSC</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>NGP 2012 PSC</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>GPU 2012 PSC</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>NGP 2012 Slice PSC</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>GPU 2012 Slice PSC</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>IOU 2012 PSC</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Exports</i>	645	648	653	645	644	648	679	682	709	718	709	689	686	676	672
<i>Regional Transfers (Out)</i>	328	637	667	691	657	523	488	459	451	266	266	282	268	59	440
<i>Federal Diversity</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Total Transfers Out</i>	7368	8884	9470	9526	9100	8206	7330	7275	7816	7373	7806	7902	7621	7229	8150
<i>Total Firm Obligations</i>	7974	9430	10047	10146	9721	8785	8072	8017	8617	8168	8637	8680	8399	7960	8836
<b>Hydro Resources</b>															
<i>Regulated Hydro</i>	6085	7311	7100	7205	6352	5817	4370	4760	7903	6528	6692	7261	6047	5934	6517
<i>Independent Hydro</i>	336	297	210	188	186	275	402	438	730	783	496	456	436	421	400
<i>Operational Peaking Adj.</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Non-Fed CER (Canada)</i>	141	141	141	141	141	141	139	139	139	139	139	139	139	139	140
<i>Total Hydro Resources</i>	6562	7748	7451	7534	6679	6234	4911	5338	8772	7450	7327	7857	6623	6494	7057
<b>Other Resources</b>															
<i>Small Thermal &amp; Misc.</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Combustion Turbines</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Renewables</i>	57	61	59	62	60	81	74	70	74	80	66	54	68	52	65
<i>Cogeneration</i>	22	25	26	27	27	26	25	25	22	12	20	20	20	21	23
<i>Imports</i>	206	285	356	356	334	321	319	265	130	134	165	171	156	154	241
<i>Regional Transfers (In)</i>	235	293	223	240	231	216	214	215	217	230	211	221	233	51	216
<i>Large Thermal</i>	1030	1030	1030	1030	1030	1030	550	0	0	0	897	1030	1030	1030	785
<i>Non-Utility Generation</i>	13	26	30	29	26	25	45	45	41	27	19	27	25	9.0	26
<i>Augmentation Purchases</i>	680	680	680	680	680	680	680	680	680	680	680	680	680	680	680
<i>Augmentation Resources</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Total Other Resources</i>	2243	2400	2403	2426	2388	2379	1908	1300	1164	1163	2059	2202	2212	1998	2036
<i>Total Resources</i>	8805	10148	9855	9960	9067	8613	6819	6638	9936	8614	9386	10060	8835	8492	9093
<b>Reserves &amp; Maintenance</b>															
<i>Contingency Reserves (Non-Spinning)</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Contingency Reserves (Spinning)</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Generation Imbalance Reserves</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Load Following Reserves</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Federal Hydro Maintenance</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Federal Transmission Losses</i>	-248	-286	-278	-281	-256	-243	-192	-187	-280	-243	-265	-284	-249	-239	-256

Loads and Resources - Federal System  
 PNW Loads and Resource Study  
 2010 - 2011 Fiscal Year  
 1937 Water Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

Continued

7/21/2009

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<i>Total Reserves, Maintenance &amp; Losses</i>	-248	-286	-278	-281	-256	-243	-192	-187	-280	-243	-265	-284	-249	-239	-256
<i>Total Net Resources</i>	8557	9862	9577	9679	8811	8370	6626	6451	9655	8371	9121	9776	8586	8252	8836
<i>Total Firm Surplus/Deficit</i>	583	432	-470	-467	-909	-415	-1445	-1566	1039	203	484	1096	186	293	0

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**ENERGY ANALYSIS**

**2.4 FEDERAL LOADS AND RESOURCES STUDY-ENERGY ANALYSIS**  
**Monthly Energy in Average Megawatts**  
**For FY 2010 and 2011**

A-2 Federal Exports .....16  
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Table A-2: Federal Exports  
 PNW Loads and Resource Study  
 2009 - 2010 Fiscal Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<i>-Exports East of Continental Divide-</i>															
1 BPA to Other Entities	41	45	50	49	48	45	41	41	38	41	44	43	43	37	43
<b>2 Total Exports to ECD</b>	<b>41</b>	<b>45</b>	<b>50</b>	<b>49</b>	<b>48</b>	<b>45</b>	<b>41</b>	<b>41</b>	<b>38</b>	<b>41</b>	<b>44</b>	<b>43</b>	<b>43</b>	<b>37</b>	<b>43</b>
<i>-Exports to Pacific Southwest-</i>															
3 BPA to Other Entities	22	28	30	24	23	28	33	36	39	45	46	36	33	30	32
4 BPA to PASA C/N/X	0	0	0	0	0	0	0	0	0	0	4.5	4.5	4.5	4.5	1.1
5 BPA to PASA S/N/X	0	0	0	0	0	0	0	0	2.2	2.2	0	0	0	0	0.4
6 BPA to RVSD CapS	0	4.7	4.9	4.5	4.8	4.9	4.9	4.9	6.5	0	0	0	0	0	2.9
7 BPA to RVSD C/N/X	6.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0.6
8 BPA to RVSD C/N/X	11	2.6	2.8	2.5	2.7	2.8	2.8	2.8	0	0	11	10	11	11	5.0
9 BPA to RVSD S/Pwr/X	0	0	0	0	0	0	0	0	25	26	0	0	0	0	4.3
10 BPA NW-SW Intertie Losses	1.2	1.1	1.1	0.9	0.9	1.1	1.2	1.3	2.2	2.2	1.8	1.5	1.5	1.4	1.4
<b>11 Total Exports To PSW</b>	<b>40</b>	<b>36</b>	<b>39</b>	<b>32</b>	<b>31</b>	<b>37</b>	<b>42</b>	<b>45</b>	<b>75</b>	<b>76</b>	<b>63</b>	<b>52</b>	<b>50</b>	<b>47</b>	<b>48</b>
<i>-Exports to Inland Southwest-</i>															
12 BPA to SPP PwrS	45	45	45	45	45	45	75	75	75	75	75	75	75	75	60
<b>13 Total Exports To ISW</b>	<b>45</b>	<b>45</b>	<b>45</b>	<b>45</b>	<b>45</b>	<b>45</b>	<b>75</b>	<b>75</b>	<b>75</b>	<b>75</b>	<b>75</b>	<b>75</b>	<b>75</b>	<b>75</b>	<b>60</b>
<i>-Exports to Canada-</i>															
14 BPA to BCHP CanEnt	567	567	567	567	567	567	567	567	567	567	567	527	527	527	560
<b>15 Total Exports To Canada</b>	<b>567</b>	<b>567</b>	<b>567</b>	<b>567</b>	<b>567</b>	<b>567</b>	<b>567</b>	<b>567</b>	<b>567</b>	<b>567</b>	<b>567</b>	<b>527</b>	<b>527</b>	<b>527</b>	<b>560</b>
<i>-Exports to Other Entities-</i>															
<b>16 Total Exports To Other Entities</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>
<i>-Total Exports-</i>															
17 Federal Entities	694	693	701	693	691	694	725	728	756	759	749	697	695	686	712
18 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>21 Total Exports.</b>	<b>694</b>	<b>693</b>	<b>701</b>	<b>693</b>	<b>691</b>	<b>694</b>	<b>725</b>	<b>728</b>	<b>756</b>	<b>759</b>	<b>749</b>	<b>697</b>	<b>695</b>	<b>686</b>	<b>712</b>

Table A-2: Federal Exports  
PNW Loads and Resource Study  
2010 - 2011 Fiscal Year  
[59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<i>-Exports East of Continental Divide-</i>															
1 BPA to Other Entities	41	44	47	46	46	45	40	40	38	40	45	44	44	38	43
<b>2 Total Exports to ECD</b>	<b>41</b>	<b>44</b>	<b>47</b>	<b>46</b>	<b>46</b>	<b>45</b>	<b>40</b>	<b>40</b>	<b>38</b>	<b>40</b>	<b>45</b>	<b>44</b>	<b>44</b>	<b>38</b>	<b>43</b>
<i>-Exports to Pacific Southwest-</i>															
3 BPA to Other Entities	22	28	30	24	23	28	33	36	39	45	46	36	33	30	32
4 BPA to PASA C/N/X	0	0	0	0	0	0	0	0	0	0	4.5	4.5	4.5	4.5	1.1
5 BPA to PASA S/N/X	0	0	0	0	0	0	0	0	2.2	2.2	0	0	0	0	0.4
6 BPA to RVSD C/N/X	10	2.8	2.8	2.5	2.7	2.8	2.8	2.5	0	0	10	11	11	10	4.9
7 BPA to RVSD S/Pwr/X	0	0	0	0	0	0	0	0	25	26	0	0	0	0	4.3
8 BPA NW-SW Intertie Losses	1.0	0.9	1.0	0.8	0.8	0.9	1.1	1.1	2	2.2	1.8	1.5	1.5	1.4	1.3
<b>9 Total Exports To PSW</b>	<b>33</b>	<b>32</b>	<b>34</b>	<b>27</b>	<b>26</b>	<b>32</b>	<b>37</b>	<b>39</b>	<b>69</b>	<b>76</b>	<b>62</b>	<b>53</b>	<b>50</b>	<b>46</b>	<b>44</b>
<i>-Exports to Inland Southwest-</i>															
10 BPA to SPP PwrS	45	45	45	45	45	45	75	75	75	75	75	75	75	75	60
<b>11 Total Exports To ISW</b>	<b>45</b>	<b>45</b>	<b>45</b>	<b>45</b>	<b>45</b>	<b>45</b>	<b>75</b>	<b>75</b>	<b>75</b>	<b>75</b>	<b>75</b>	<b>75</b>	<b>75</b>	<b>75</b>	<b>60</b>
<i>-Exports to Canada-</i>															
12 BPA to BCHP CanEnt	527	527	527	527	527	527	527	527	527	527	527	517	517	517	525
<b>13 Total Exports To Canada</b>	<b>527</b>	<b>527</b>	<b>527</b>	<b>527</b>	<b>527</b>	<b>527</b>	<b>527</b>	<b>527</b>	<b>527</b>	<b>527</b>	<b>527</b>	<b>517</b>	<b>517</b>	<b>517</b>	<b>525</b>
<i>-Exports to Other Entities-</i>															
<b>14 Total Exports To Other Entities</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>
<i>-Total Exports-</i>															
15 Federal Entities	645	648	653	645	644	648	679	682	709	718	709	689	686	676	672
16 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>19 Total Exports.</b>	<b>645</b>	<b>648</b>	<b>653</b>	<b>645</b>	<b>644</b>	<b>648</b>	<b>679</b>	<b>682</b>	<b>709</b>	<b>718</b>	<b>709</b>	<b>689</b>	<b>686</b>	<b>676</b>	<b>672</b>

Table A-3: Federal Regulated Hydro Projects  
 PNW Loads and Resource Study  
 2009 - 2010 Fiscal Year  
 1937 Water Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<i>-Regulated Hydro Projects-</i>															
1 Albeni Falls	39	26	18	20	15	18	21	27	40	44	40	28	21	22	28
2 Bonneville	476	553	562	568	538	521	284	138	367	299	194	206	140	466	410
3 Chief Joseph	999	1299	1187	1304	1081	923	560	763	1186	953	1162	1455	1142	937	1084
4 Dworshak	52	51	51	51	51	51	51	53	71	285	451	444	415	180	149
5 Grand Coulee	1871	2422	2166	2315	1806	1421	802	1114	1828	1646	2169	2700	2077	1720	1895
6 Hungry Horse	87	92	93	94	93	90	68	28	29	50	169	123	108	103	89
7 Ice Harbor	136	97	145	110	140	179	209	205	339	259	153	102	148	117	167
8 John Day	763	924	914	934	864	821	646	596	880	787	697	763	625	732	802
9 Libby	113	213	190	86	85	84	84	83	320	266	400	243	188	162	186
10 Little Goose	139	101	148	116	130	177	259	322	552	303	169	130	154	132	200
11 Lower Granite	136	101	148	116	131	177	251	325	547	301	116	100	156	137	194
12 Lower Monumental	137	97	147	112	144	183	270	326	544	306	123	82	149	122	194
13 McNary	529	610	602	623	574	524	374	348	553	458	355	372	302	513	503
14 The Dalles	602	716	722	748	696	641	489	429	639	568	485	506	414	586	610
<b>Total Regulated Hydro w/Enc.</b>	<b>6079</b>	<b>7302</b>	<b>7093</b>	<b>7197</b>	<b>6345</b>	<b>5812</b>	<b>4367</b>	<b>4756</b>	<b>7896</b>	<b>6522</b>	<b>6684</b>	<b>7252</b>	<b>6040</b>	<b>5928</b>	<b>6510</b>
<i>-Total Regulated Hydro w/Enc.-</i>															
15 Federal System	6079	7302	7093	7197	6345	5812	4367	4756	7896	6522	6684	7252	6040	5928	6510
16 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>19 Total Regulated Hydro w/Enc.</b>	<b>6079</b>	<b>7302</b>	<b>7093</b>	<b>7197</b>	<b>6345</b>	<b>5812</b>	<b>4367</b>	<b>4756</b>	<b>7896</b>	<b>6522</b>	<b>6684</b>	<b>7252</b>	<b>6040</b>	<b>5928</b>	<b>6510</b>

Table A-3: Federal Regulated Hydro Projects  
 PNW Loads and Resource Study  
 2010 - 2011 Fiscal Year  
 1937 Water Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<i>-Regulated Hydro Projects-</i>															
1 Albeni Falls	39	26	18	20	15	18	21	27	40	44	40	28	21	22	28
2 Bonneville	476	553	562	568	538	521	284	138	367	299	194	206	140	466	410
3 Chief Joseph	1002	1303	1191	1308	1084	926	561	765	1189	956	1166	1459	1146	940	1087
4 Dworshak	52	51	51	51	51	51	51	53	71	285	451	444	415	180	149
5 Grand Coulee	1874	2427	2170	2319	1809	1424	803	1116	1832	1649	2172	2704	2081	1723	1898
6 Hungry Horse	87	92	93	94	93	90	68	28	29	50	169	123	108	103	89
7 Ice Harbor	136	97	145	110	140	179	209	205	339	259	153	102	148	117	167
8 John Day	763	924	914	934	864	821	646	596	880	787	697	763	625	732	802
9 Libby	113	213	190	86	85	84	84	83	320	266	400	243	188	162	186
10 Little Goose	139	101	148	116	130	177	259	322	552	303	169	130	154	132	200
11 Lower Granite	136	101	148	116	131	177	251	325	547	301	116	100	156	137	194
12 Lower Monumental	137	97	147	112	144	183	270	326	544	306	123	82	149	122	194
13 McNary	529	610	602	623	574	524	374	348	553	458	355	372	302	513	503
14 The Dalles	602	716	722	748	696	641	489	429	639	568	485	506	414	586	610
<b>Total Regulated Hydro w/Enc.</b>	<b>6085</b>	<b>7311</b>	<b>7100</b>	<b>7205</b>	<b>6352</b>	<b>5817</b>	<b>4370</b>	<b>4760</b>	<b>7903</b>	<b>6528</b>	<b>6692</b>	<b>7261</b>	<b>6047</b>	<b>5934</b>	<b>6517</b>
<i>-Total Regulated Hydro w/Enc.-</i>															
15 Federal System	6085	7311	7100	7205	6352	5817	4370	4760	7903	6528	6692	7261	6047	5934	6517
16 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>19 Total Regulated Hydro w/Enc.</b>	<b>6085</b>	<b>7311</b>	<b>7100</b>	<b>7205</b>	<b>6352</b>	<b>5817</b>	<b>4370</b>	<b>4760</b>	<b>7903</b>	<b>6528</b>	<b>6692</b>	<b>7261</b>	<b>6047</b>	<b>5934</b>	<b>6517</b>

Table A-4: Federal Independent Hydro Projects  
 PNW Loads and Resource Study  
 2009 - 2010 Fiscal Year  
 1937 Water Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<i>-Independent Hydro Projects-</i>															
1 Anderson Ranch	6.3	6.2	6.2	6.2	6.2	6.2	6.3	6.5	34	33	32	27	16	11	15
2 Big Cliff	11	13	6.6	7.1	5.9	7.4	8.8	8.8	21	21	7.2	5.9	5.9	8	10
3 Black Canyon	9	5.9	7.1	8.8	4.8	7.9	10	10	10	8.1	7.5	10	10	7.9	8.1
4 Boise River Diversion	0.4	0	0	0	0	0	0	2.3	3	2.6	3	3	3	2.5	1.3
5 Bonneville Fishway	24	12	12	12	24	24	24	24	24	24	24	24	24	24	21
6 Chandler	6.7	12	13	9.5	9.3	13	10	10	8.4	8.1	4.6	5.2	5.2	4.1	8.6
7 Cougar	26	25	6.4	4.7	6.5	7.3	8.3	29	29	29	12	9.2	9.2	26	17
8 Cowlitz Falls	6.2	3.1	23	10	14	33	46	50	64	66	29	12	8.5	7.9	26
9 Detroit	45	48	21	22	18	25	35	37	102	95	32	26	26	34	42
10 Dexter	9.8	16	3.9	3.8	4.6	4.6	10	16	17	17	5.8	10	11	4.6	9.2
11 Foster	10	7.5	10	4.6	10	20	19	18	20	23	6.6	6.6	6.6	12	13
12 Green Peter	19	17	19	8.2	0.9	34	90	45	59	50	12	16	16	30	28
13 Green Springs - USBR	2.6	3.3	5.2	6.2	5.8	4.9	4.6	4.6	5.0	7.5	9.1	9.9	8.8	6.5	5.8
14 Hills Creek	24	29	6	6.1	6.1	7.1	12	32	34	34	14	9.1	9.1	24	18
15 Idaho Falls - City Plant	2.1	3.1	4.0	3.1	3.4	4.2	5.3	5.3	6.8	7.1	6.7	4.6	4.6	3.1	4.5
16 Idaho Falls - Lower Plant	2.2	3.3	4.2	3.2	3.5	4.4	5.5	5.5	7.5	7.7	7	4.8	4.8	3.3	4.7
17 Idaho Falls - Upper Plant	2.4	3.4	4.3	3.4	3.7	4.6	5.6	5.6	7.3	7.4	7.0	5.0	5.0	3.4	4.8
18 Lookout Point	38	49	9.8	9.6	12	16	40	66	83	78	26	43	44	18	36
19 Lost Creek	18	19	19	19	13	14	15	16	55	55	46	40	38	30	29
20 Minidoka	12	3.1	9	2.8	2.4	2.2	14	14	30	30	30	30	30	28	16
21 Palisades	56	19	16	34	28	22	19	19	97	165	162	141	135	132	74
22 Roza	3.6	0	5	4	4.3	13	13	13	13	13	13	13	13	0	7.9
<b>Total Independent Hydro w/Enc.</b>	<b>336</b>	<b>297</b>	<b>210</b>	<b>188</b>	<b>186</b>	<b>275</b>	<b>402</b>	<b>438</b>	<b>730</b>	<b>783</b>	<b>496</b>	<b>456</b>	<b>436</b>	<b>421</b>	<b>400</b>
<i>-Total Independent Hydro W/Enc.-</i>															
23 Federal System	336	297	210	188	186	275	402	438	730	783	496	456	436	421	400
24 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>27 Total Independent Hydro w/Enc.</b>	<b>336</b>	<b>297</b>	<b>210</b>	<b>188</b>	<b>186</b>	<b>275</b>	<b>402</b>	<b>438</b>	<b>730</b>	<b>783</b>	<b>496</b>	<b>456</b>	<b>436</b>	<b>421</b>	<b>400</b>

Table A-4: Federal Independent Hydro Projects  
 PNW Loads and Resource Study  
 2010 - 2011 Fiscal Year  
 1937 Water Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<i>-Independent Hydro Projects-</i>															
1 Anderson Ranch	6.3	6.2	6.2	6.2	6.2	6.2	6.3	6.5	34	33	32	27	16	11	15
2 Big Cliff	11	13	6.6	7.1	5.9	7.4	8.8	8.8	21	21	7.2	5.9	5.9	8	10
3 Black Canyon	9	5.9	7.1	8.8	4.8	7.9	10	10	10	8.1	7.5	10	10	7.9	8.1
4 Boise River Diversion	0.4	0	0	0	0	0	0	2.3	3	2.6	3	3	3	2.5	1.3
5 Bonneville Fishway	24	12	12	12	24	24	24	24	24	24	24	24	24	24	21
6 Chandler	6.7	12	13	9.5	9.3	13	10	10	8.4	8.1	4.6	5.2	5.2	4.1	8.6
7 Cougar	26	25	6.4	4.7	6.5	7.3	8.3	29	29	29	12	9.2	9.2	26	17
8 Cowlitz Falls	6.2	3.1	23	10	14	33	46	50	64	66	29	12	8.5	7.9	26
9 Detroit	45	48	21	22	18	25	35	37	102	95	32	26	26	34	42
10 Dexter	9.8	16	3.9	3.8	4.6	4.6	10	16	17	17	5.8	10	11	4.6	9.2
11 Foster	10	7.5	10	4.6	10	20	19	18	20	23	6.6	6.6	6.6	12	13
12 Green Peter	19	17	19	8.2	0.9	34	90	45	59	50	12	16	16	30	28
13 Green Springs - USBR	2.6	3.3	5.2	6.2	5.8	4.9	4.6	4.6	5.0	7.5	9.1	9.9	8.8	6.5	5.8
14 Hills Creek	24	29	6	6.1	6.1	7.1	12	32	34	34	14	9.1	9.1	24	18
15 Idaho Falls - City Plant	2.1	3.1	4.0	3.1	3.4	4.2	5.3	5.3	6.8	7.1	6.7	4.6	4.6	3.1	4.5
16 Idaho Falls - Lower Plant	2.2	3.3	4.2	3.2	3.5	4.4	5.5	5.5	7.5	7.7	7	4.8	4.8	3.3	4.7
17 Idaho Falls - Upper Plant	2.4	3.4	4.3	3.4	3.7	4.6	5.6	5.6	7.3	7.4	7.0	5.0	5.0	3.4	4.8
18 Lookout Point	38	49	9.8	9.6	12	16	40	66	83	78	26	43	44	18	36
19 Lost Creek	18	19	19	19	13	14	15	16	55	55	46	40	38	30	29
20 Minidoka	12	3.1	9	2.8	2.4	2.2	14	14	30	30	30	30	30	28	16
21 Palisades	56	19	16	34	28	22	19	19	97	165	162	141	135	132	74
22 Roza	3.6	0	5	4	4.3	13	13	13	13	13	13	13	13	0	7.9
<b>Total Independent Hydro w/Enc.</b>	<b>336</b>	<b>297</b>	<b>210</b>	<b>188</b>	<b>186</b>	<b>275</b>	<b>402</b>	<b>438</b>	<b>730</b>	<b>783</b>	<b>496</b>	<b>456</b>	<b>436</b>	<b>421</b>	<b>400</b>
<i>-Total Independent Hydro W/Enc.-</i>															
23 Federal System	336	297	210	188	186	275	402	438	730	783	496	456	436	421	400
24 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>27 Total Independent Hydro w/Enc.</b>	<b>336</b>	<b>297</b>	<b>210</b>	<b>188</b>	<b>186</b>	<b>275</b>	<b>402</b>	<b>438</b>	<b>730</b>	<b>783</b>	<b>496</b>	<b>456</b>	<b>436</b>	<b>421</b>	<b>400</b>

Table A-5: Federal Imports  
 PNW Loads and Resource Study  
 2009 - 2010 Fiscal Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<i>-Imports From East of Continental Divide-</i>															
1 PPL to BPA PwrS	145	206	277	277	256	246	216	187	54	58	74	79	65	59	160
<b>2 Total Imports From ECD</b>	<b>145</b>	<b>206</b>	<b>277</b>	<b>277</b>	<b>256</b>	<b>246</b>	<b>216</b>	<b>187</b>	<b>54</b>	<b>58</b>	<b>74</b>	<b>79</b>	<b>65</b>	<b>59</b>	<b>160</b>
<i>-Imports From Pacific Southwest-</i>															
3 PASA to BPA XchgNrg	3.5	3.5	3.5	3.5	3.5	1.7	0	0	0	0	0	0	0	3.5	1.9
4 PASA to BPA S/N/X	0.7	0.7	0.7	0.7	0.7	0.3	0	0	0	0	0	0	0	0.7	0.4
5 PASA to BPA PkRepl	0	0	0	0	0	0	0	0	0	0	4.5	4.5	4.5	4.5	1.1
6 RVSD to BPA XchgNrg	4.2	6.4	6	6.3	6.1	6	6	0	0	0	0	0	0	0	3.2
7 RVSD to BPA PkRepl	0	4.7	4.9	4.5	4.8	4.9	4.9	4.9	6.5	0	0	0	0	0	2.9
8 RVSD to BPA PkRepl	6.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0.6
9 RVSD to BPA XchgNrg	0	17	16	17	16	15	15	0	0	0	0	0	0	0	7.3
10 RVSD to BPA S/Pwr/X	0	10.0	9.4	9.9	9.2	9.0	9.0	0	0	0	0	0	0	0	4.3
11 RVSD to BPA PkRepl	11	2.6	2.8	2.5	2.7	2.8	2.7	2.8	0	0	11	11	10	11	5.0
<b>12 Total Imports From PSW</b>	<b>26</b>	<b>45</b>	<b>43</b>	<b>44</b>	<b>43</b>	<b>40</b>	<b>38</b>	<b>7.7</b>	<b>6.5</b>	<b>0</b>	<b>15</b>	<b>16</b>	<b>15</b>	<b>20</b>	<b>27</b>
<i>-Imports From Inland Southwest-</i>															
13 SPP to BPA PwrS	45	45	45	45	45	45	75	75	75	75	75	75	75	75	60
<b>14 Total Imports From ISW</b>	<b>45</b>	<b>45</b>	<b>45</b>	<b>45</b>	<b>45</b>	<b>45</b>	<b>75</b>	<b>75</b>	<b>75</b>	<b>75</b>	<b>75</b>	<b>75</b>	<b>75</b>	<b>75</b>	<b>60</b>
<i>-Imports From Canada-</i>															
15 BCHP to BPA PwrS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
<b>16 Total Imports From Canada</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>
<i>-Imports From Other Entities-</i>															
<b>17 Total Imports From Other Entities</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>
<i>-Total Imports-</i>															
18 Federal System	217	297	367	367	344	332	330	270	136	134	165	171	155	155	248
19 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>22 Total Imports.</b>	<b>217</b>	<b>297</b>	<b>367</b>	<b>367</b>	<b>344</b>	<b>332</b>	<b>330</b>	<b>270</b>	<b>136</b>	<b>134</b>	<b>165</b>	<b>171</b>	<b>155</b>	<b>155</b>	<b>248</b>



Table A-5: Federal Imports  
 PNW Loads and Resource Study  
 2010 - 2011 Fiscal Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<i>-Imports From East of Continental Divide-</i>															
1 PPL to BPA PwrS	145	206	277	277	256	246	216	187	54	58	74	79	65	59	160
<b>2 Total Imports From ECD</b>	<b>145</b>	<b>206</b>	<b>277</b>	<b>277</b>	<b>256</b>	<b>246</b>	<b>216</b>	<b>187</b>	<b>54</b>	<b>58</b>	<b>74</b>	<b>79</b>	<b>65</b>	<b>59</b>	<b>160</b>
<i>-Imports From Pacific Southwest-</i>															
3 PASA to BPA XchgNrg	3.5	3.5	3.5	3.5	3.5	1.7	0	0	0	0	0	0	0	3.5	1.9
4 PASA to BPA S/IN/X	0.7	0.7	0.7	0.7	0.7	0.3	0	0	0	0	0	0	0	0.7	0.4
5 PASA to BPA PkRepl	0	0	0	0	0	0	0	0	0	0	4.5	4.5	4.5	4.5	1.1
6 RVSD to BPA XchgNrg	0	16	16	17	16	16	16	0	0	0	0	0	0	0	7.3
7 RVSD to BPA S/Pwr/X	0	10.0	9.4	9.9	9.2	9.0	9.0	0	0	0	0	0	0	0	4.3
8 RVSD to BPA PkRepl	10	2.7	2.8	2.5	2.7	2.8	2.6	2.6	0	0	10	11	11	10	4.9
<b>9 Total Imports From PSW</b>	<b>14</b>	<b>33</b>	<b>32</b>	<b>33</b>	<b>32</b>	<b>30</b>	<b>28</b>	<b>2.6</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>16</b>	<b>16</b>	<b>19</b>	<b>20</b>
<i>-Imports From Inland Southwest-</i>															
10 SPP to BPA PwrS	45	45	45	45	45	45	75	75	75	75	75	75	75	75	60
<b>11 Total Imports From ISW</b>	<b>45</b>	<b>45</b>	<b>45</b>	<b>45</b>	<b>45</b>	<b>45</b>	<b>75</b>	<b>75</b>	<b>75</b>	<b>75</b>	<b>75</b>	<b>75</b>	<b>75</b>	<b>75</b>	<b>60</b>
<i>-Imports From Canada-</i>															
12 BHP to BPA PwrS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
<b>13 Total Imports From Canada</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>
<i>-Imports From Other Entities-</i>															
<b>14 Total Imports From Other Entities</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>
<i>-Total Imports-</i>															
15 Federal System	206	285	356	356	334	321	319	265	130	134	165	171	156	154	241
16 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>19 Total Imports.</b>	<b>206</b>	<b>285</b>	<b>356</b>	<b>356</b>	<b>334</b>	<b>321</b>	<b>319</b>	<b>265</b>	<b>130</b>	<b>134</b>	<b>165</b>	<b>171</b>	<b>156</b>	<b>154</b>	<b>241</b>

Table A-8: Federal Renewable Resources  
 PNW Loads and Resource Study  
 2009 - 2010 Fiscal Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<i>-Federal System-</i>															
1 Condon Wind Project	10	13	13	14	12	14	10	9	9.3	9.6	7.0	6.5	8.3	8.0	11
2 Foote Creek 1	4.0	5.4	4.8	5.0	5.2	4.9	4	3.6	2.8	2.6	1.3	1.9	2.3	2.6	3.7
3 Foote Creek 2	0.5	0.6	0.6	0.6	0.6	0.6	0.5	0.4	0.3	0.3	0.2	0.2	0.3	0.3	0.4
4 Foote Creek 4	4.3	5.9	5.3	5.4	5.7	5.4	4.4	3.9	3.1	2.9	1.4	2.1	2.5	2.9	4.1
5 Klondike I	6.2	4.9	5.2	5.7	6.4	7.4	8.6	9.3	10	12	11	10	9.7	8.2	8
6 Klondike III	12	8.6	10	12	14	18	19	20	24	26	24	15	23	12	17
7 Stateline Wind Project	20	22	19	20	17	31	27	24	24	27	21	18	22	18	22
<b>8 Total Federal System</b>	<b>57</b>	<b>61</b>	<b>59</b>	<b>62</b>	<b>60</b>	<b>81</b>	<b>74</b>	<b>70</b>	<b>74</b>	<b>80</b>	<b>66</b>	<b>54</b>	<b>68</b>	<b>52</b>	<b>65</b>
<i>-Renewable Resources-</i>															
9 Federal System	57	61	59	62	60	81	74	70	74	80	66	54	68	52	65
10 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>13 Total Renewable Resources</b>	<b>57</b>	<b>61</b>	<b>59</b>	<b>62</b>	<b>60</b>	<b>81</b>	<b>74</b>	<b>70</b>	<b>74</b>	<b>80</b>	<b>66</b>	<b>54</b>	<b>68</b>	<b>52</b>	<b>65</b>

Table A-8: Federal Renewable Resources  
 PNW Loads and Resource Study  
 2010 - 2011 Fiscal Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<i>-Federal System-</i>															
1 Condon Wind Project	10	13	13	14	12	14	10	9	9.3	9.6	7.0	6.6	8.3	8.0	11
2 Foote Creek 1	4.0	5.4	4.8	5.0	5.2	4.9	4	3.6	2.8	2.6	1.3	1.9	2.3	2.6	3.7
3 Foote Creek 2	0.5	0.6	0.6	0.6	0.6	0.6	0.5	0.4	0.3	0.3	0.2	0.2	0.3	0.3	0.4
4 Foote Creek 4	4.3	5.9	5.3	5.4	5.7	5.4	4.4	3.9	3.1	2.9	1.4	2.1	2.5	2.9	4.1
5 Klondike I	6.2	4.9	5.2	5.7	6.4	7.4	8.6	9.3	10	12	11	10	9.7	8.2	8
6 Klondike III	12	8.7	10	12	14	18	19	20	24	26	24	15	23	12	17
7 Stateline Wind Project	20	22	19	20	17	31	27	24	24	27	21	18	22	18	22
<b>8 Total Federal System</b>	<b>57</b>	<b>61</b>	<b>59</b>	<b>62</b>	<b>60</b>	<b>81</b>	<b>74</b>	<b>70</b>	<b>74</b>	<b>80</b>	<b>66</b>	<b>54</b>	<b>68</b>	<b>52</b>	<b>65</b>
<i>-Renewable Resources-</i>															
9 Federal System	57	61	59	62	60	81	74	70	74	80	66	54	68	52	65
10 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>13 Total Renewable Resources</b>	<b>57</b>	<b>61</b>	<b>59</b>	<b>62</b>	<b>60</b>	<b>81</b>	<b>74</b>	<b>70</b>	<b>74</b>	<b>80</b>	<b>66</b>	<b>54</b>	<b>68</b>	<b>52</b>	<b>65</b>

Table A-10: Federal Large Thermal  
 PNW Loads and Resource Study  
 2009 - 2010 Fiscal Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<i>-Columbia Generating Station: Uranium-</i>															
1 BPA - Power Business	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030
2 Columbia Gen Station: Regional Total	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030
<i>-Total Large Thermal-</i>															
3 Federal System	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030
4 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 Non-NW Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 Total Large Thermal	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030

Table A-10: Federal Large Thermal  
 PNW Loads and Resource Study  
 2010 - 2011 Fiscal Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<i>-Columbia Generating Station: Uranium-</i>															
1 BPA - Power Business	1030	1030	1030	1030	1030	1030	550	0	0	0	897	1030	1030	1030	785
2 Columbia Gen Station: Regional Total	1030	1030	1030	1030	1030	1030	550	0	0	0	897	1030	1030	1030	785
<i>-Total Large Thermal-</i>															
3 Federal System	1030	1030	1030	1030	1030	1030	550	0	0	0	897	1030	1030	1030	785
4 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 Non-NW Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 Total Large Thermal	1030	1030	1030	1030	1030	1030	550	0	0	0	897	1030	1030	1030	785

Table A-15: Canadian Entitlement Return For Canada  
 PNW Loads and Resource Study  
 2009 - 2010 Fiscal Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<i>-BPA Canada-</i>															
1 BPA: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>-Priest Rapids CER for Canada-</i>															
2 AVWP to BPA	1.0	1.6	1.6	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
3 COPD to BPA	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
4 EWEB to BPA	0	0.2	0.2	0	0	0	0	0	0	0	0	0	0	0	0.1
5 FGRV to BPA	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
6 GCPD to BPA	18	14	14	18	18	18	19	19	19	19	19	19	19	19	18
7 KITT to BPA	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 MCMN to BPA	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
9 MTFR to BPA	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
10 PGE to BPA	1.9	3.4	3.4	2.5	2.5	2.5	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.7
11 PPL to BPA	0.3	1.4	1.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.5
12 PSE to BPA	0.2	0.8	0.8	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3
13 SCL to BPA	0.2	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
14 TPU to BPA	0.2	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
15 UnknMkt to BPA	6.7	6.2	6.2	6.0	6.0	6.0	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2
16 Priest Rapids: Regional Totals	29	29	29	29	29	29	30	30	30	30	30	30	30	30	30
<i>-Wanapum CER for Canada-</i>															
17 AVWP to BPA	2.3	1.5	1.5	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.3
18 COPD to BPA	0.8	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
19 EWEB to BPA	0.6	0.2	0.2	0	0	0	0	0	0	0	0	0	0	0	0.1
20 FGRV to BPA	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
21 GCPD to BPA	10	14	14	17	17	17	18	18	18	18	18	18	18	18	16
22 KITT to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 MCMN to BPA	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
24 MTFR to BPA	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
25 PGE to BPA	5.3	3.3	3.3	2.4	2.4	2.4	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.8
26 PPL to BPA	5.3	1.3	1.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.9
27 PSE to BPA	3	0.8	0.8	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.5
28 SCL to BPA	0	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
29 TPU to BPA	0	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
30 UnknMkt to BPA	0	5.9	5.9	5.7	5.7	5.7	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.4
31 Wanapum: Regional Totals	28	28	28	28	28	28	29	29	29	29	29	29	29	29	29
<i>-Rock Island P.H. #1 CER for Canada-</i>															
32 APGI to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33 CHPD to BPA	5.5	5.5	5.5	5.5	5.5	5.5	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.5
34 PSE to BPA	5.5	5.5	5.5	5.5	5.5	5.5	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.5
35 Rock Island P.H. #1: Regional Totals	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
<i>-Rock Island P.H. #2 CER for Canada-</i>															
36 APGI to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37 CHPD to BPA	3.5	3.5	3.5	3.5	3.5	3.5	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.5
38 PSE to BPA	3.5	3.5	3.5	3.5	3.5	3.5	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.5
39 Rock Island P.H. #2: Regional Totals	7.0	7.0	7.0	7.0	7.0	7.0	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.1
<i>-Rocky Reach CER for Canada-</i>															
40 APGI to BPA	8.5	8.5	8.5	8.5	8.5	8.5	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.7
41 AVWP to BPA	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
42 CHPD to BPA	5.6	5.6	5.6	5.6	5.6	5.6	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.7
43 DOPD to BPA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
44 PGE to BPA	4.5	4.5	4.5	4.5	4.5	4.5	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
45 PPL to BPA	2.0	2.0	2.0	2.0	2.0	2.0	2	2	2	2	2	2	2	2	2.0
46 PSE to BPA	14	14	14	14	14	14	15	15	15	15	15	15	15	15	15
47 Rocky Reach: Regional Totals	37	37	37	37	37	37	38	38	38	38	38	38	38	38	38
<i>-Wells CER for Canada-</i>															
48 AVWP to BPA	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8

Table A-15: Canadian Entitlement Return For Canada  
 PNW Loads and Resource Study  
 2009 - 2010 Fiscal Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

Continued

7/21/2009

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
49 COLV to BPA	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
50 DOPD to BPA	6.9	6.9	6.9	6.9	6.9	6.9	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.0
51 OKPD to BPA	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
52 PGE to BPA	4.7	4.7	4.7	4.7	4.7	4.7	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.7
53 PPL to BPA	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
54 PSE to BPA	7.2	7.2	7.2	7.2	7.2	7.2	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.3
<b>55 Wells: Regional Totals</b>	<b>24</b>	<b>24</b>	<b>24</b>	<b>24</b>	<b>24</b>	<b>24</b>	<b>25</b>	<b>25</b>	<b>25</b>	<b>25</b>	<b>25</b>	<b>25</b>	<b>25</b>	<b>25</b>	<b>24</b>
<i>-Total CER For Canada-</i>															
56 Federal System	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
57 Public Entities	57	57	57	63	63	63	65	65	65	65	65	65	65	65	63
58 Investor-Owned Entities	64	59	59	53	53	53	55	55	55	55	55	55	55	55	56
59 Other Entities	15	21	21	20	20	20	21	21	21	21	21	21	21	21	20
60 Non-NW Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>61 Total CER For Canada</b>	<b>137</b>	<b>137</b>	<b>137</b>	<b>137</b>	<b>137</b>	<b>137</b>	<b>141</b>	<b>141</b>	<b>141</b>	<b>141</b>	<b>141</b>	<b>141</b>	<b>141</b>	<b>141</b>	<b>139</b>

Table A-15: Canadian Entitlement Return For Canada  
 PNW Loads and Resource Study  
 2010 - 2011 Fiscal Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<i>-BPA Canada-</i>															
1 BPA: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>-Priest Rapids CER for Canada-</i>															
2 AVWP to BPA	1.2	1.2	1.2	1.2	1.2	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
3 COPD to BPA	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
4 EWEB to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 FGRV to BPA	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
6 GCPD to BPA	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
7 KITT to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 MCMN to BPA	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
9 MTFR to BPA	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
10 PGE to BPA	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
11 PPL to BPA	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
12 PSE to BPA	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
13 SCL to BPA	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
14 TPU to BPA	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
15 UnknMkt to BPA	6.2	6.2	6.2	6.2	6.2	6.2	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
16 Priest Rapids: Regional Totals	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
<i>-Wanapum CER for Canada-</i>															
17 AVWP to BPA	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
18 COPD to BPA	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
19 EWEB to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20 FGRV to BPA	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
21 GCPD to BPA	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
22 KITT to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 MCMN to BPA	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
24 MTFR to BPA	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
25 PGE to BPA	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
26 PPL to BPA	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
27 PSE to BPA	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
28 SCL to BPA	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
29 TPU to BPA	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
30 UnknMkt to BPA	5.9	5.9	5.9	5.9	5.9	5.9	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.9
31 Wanapum: Regional Totals	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29
<i>-Rock Island P.H. #1 CER for Canada-</i>															
32 APGI to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33 CHPD to BPA	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
34 PSE to BPA	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
35 Rock Island P.H. #1: Regional Totals	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
<i>-Rock Island P.H. #2 CER for Canada-</i>															
36 APGI to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37 CHPD to BPA	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
38 PSE to BPA	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
39 Rock Island P.H. #2: Regional Totals	7.2	7.2	7.2	7.2	7.2	7.2	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
<i>-Rocky Reach CER for Canada-</i>															
40 APGI to BPA	8.8	8.8	8.8	8.8	8.8	8.8	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.8
41 AVWP to BPA	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
42 CHPD to BPA	5.8	5.8	5.8	5.8	5.8	5.8	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
43 DOPD to BPA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
44 PGE to BPA	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
45 PPL to BPA	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
46 PSE to BPA	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
47 Rocky Reach: Regional Totals	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38
<i>-Wells CER for Canada-</i>															
48 AVWP to BPA	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8



Table A-15: Canadian Entitlement Return For Canada  
 PNW Loads and Resource Study  
 2010 - 2011 Fiscal Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

Continued

7/21/2009

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
49 COLV to BPA	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
50 DOPD to BPA	7.1	7.1	7.1	7.1	7.1	7.1	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7
51 OKPD to BPA	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
52 PGE to BPA	4.8	4.8	4.8	4.8	4.8	4.8	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.8
53 PPL to BPA	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
54 PSE to BPA	7.4	7.4	7.4	7.4	7.4	7.4	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
<b>55 Wells: Regional Totals</b>	<b>25</b>	<b>25</b>	<b>25</b>	<b>25</b>	<b>25</b>	<b>25</b>	<b>24</b>	<b>24</b>	<b>24</b>	<b>24</b>	<b>24</b>	<b>24</b>	<b>24</b>	<b>24</b>	<b>25</b>
<b>-Total CER For Canada-</b>															
56 Federal System	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
57 Public Entities	65	65	65	65	65	65	64	64	64	64	64	64	64	64	65
58 Investor-Owned Entities	55	55	55	55	55	55	54	54	54	54	54	54	54	54	55
59 Other Entities	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21
60 Non-NW Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>61 Total CER For Canada</b>	<b>141</b>	<b>141</b>	<b>141</b>	<b>141</b>	<b>141</b>	<b>141</b>	<b>139</b>	<b>139</b>	<b>139</b>	<b>139</b>	<b>139</b>	<b>139</b>	<b>139</b>	<b>139</b>	<b>140</b>

Table A-16: Federal Intra-Regional Transfers  
 PNW Loads and Resource Study  
 2009 - 2010 Fiscal Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<i>-Intra-Regional Transfers-</i>															
1 BPA To AVWP WP3Set	0	101	101	101	101	50	50	50	0	0	0	0	0	0	42
2 BPA To CCPD SFIBlk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 BPA To Other Entities	0	0	0	0	0	0	0	0	230	0	0	188	188	0	36
4 BPA To PPL PwrS	145	206	277	277	256	246	216	187	54	58	74	79	65	59	160
5 BPA To PPL CapS	183	229	187	211	199	177	173	173	167	174	159	184	184	194	186
6 BPA To PPL S/Pwr/X	0	0	0	0	0	0	0	0	0	35	34	0	0	0	5.7
7 BPA To PPL S/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 BPA To PSE WP3Set	0	101	101	101	101	50	50	50	0	0	0	0	0	0	42
9 BPA To PSE PwrS	0	2.4	2.4	2.4	0	0	0	0	0	0	0	0	0	0	0.6
10 Other Entities To BPA	38	51	45	38	41	40	43	44	53	60	55	40	51	31	45
11 PPL To BPA S/Pwr/X	23	23	0	0	0	0	0	0	0	0	0	0	0	23	5.7
12 PPL To BPA S/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 PPL To BPA PkRepl	183	229	187	211	199	177	173	173	167	174	159	184	184	194	186
<b>14 Total Contracts</b>	<b>572</b>	<b>942</b>	<b>902</b>	<b>942</b>	<b>898</b>	<b>740</b>	<b>703</b>	<b>676</b>	<b>671</b>	<b>501</b>	<b>480</b>	<b>674</b>	<b>673</b>	<b>501</b>	<b>708</b>
<i>-Total Contracts Out-</i>															
15 Federal System	328	639	670	693	657	523	488	459	451	266	266	451	437	253	471
16 Public Entities	9.4	10	11	10	9.9	8.8	7.5	7.5	11	13	11	12	12	9.4	10
17 Investor-Owned Entities	235	292	221	239	231	209	208	209	209	221	203	211	223	238	227
18 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>19 Total Contracts Out</b>	<b>572</b>	<b>942</b>	<b>902</b>	<b>942</b>	<b>898</b>	<b>740</b>	<b>703</b>	<b>676</b>	<b>671</b>	<b>501</b>	<b>480</b>	<b>674</b>	<b>673</b>	<b>501</b>	<b>708</b>
<i>-Total Contracts In-</i>															
20 Federal System	244	302	232	249	241	218	216	217	220	234	214	223	236	248	237
21 Public Entities	0	0	0	0	0	0	0	0	230	0	0	188	188	0	36
22 Investor-Owned Entities	328	639	670	693	657	523	488	459	221	266	266	263	249	253	436
23 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>24 Total Contracts In</b>	<b>572</b>	<b>942</b>	<b>902</b>	<b>942</b>	<b>898</b>	<b>740</b>	<b>703</b>	<b>676</b>	<b>671</b>	<b>501</b>	<b>480</b>	<b>674</b>	<b>673</b>	<b>501</b>	<b>708</b>

Table A-16: Federal Intra-Regional Transfers  
 PNW Loads and Resource Study  
 2010 - 2011 Fiscal Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<i>-Intra-Regional Transfers-</i>															
1 BPA To AVWP WP3Set	0	101	101	101	101	50	50	50	0	0	0	0	0	0	42
2 BPA To CCPD SFIBlk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 BPA To Other Entities	0	0	0	0	0	0	0	0	230	0	0	19	19	0	21
4 BPA To PPL CapS	183	229	187	211	199	177	173	173	167	174	159	184	184	0	170
5 BPA To PPL S/Pwr/X	0	0	0	0	0	0	0	0	0	35	34	0	0	0	5.7
6 BPA To PPL S/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 BPA To PPL PwrS	145	206	277	277	256	246	216	187	54	58	74	79	65	59	160
8 BPA To PSE WP3Set	0	101	101	101	101	50	50	50	0	0	0	0	0	0	42
9 Other Entities To BPA	29	42	35	28	32	38	41	42	50	56	53	37	48	29	40
10 PPL To BPA S/Pwr/X	23	23	0	0	0	0	0	0	0	0	0	0	0	23	5.7
11 PPL To BPA S/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12 PPL To BPA PkRepl	183	229	187	211	199	177	173	173	167	174	159	184	184	0	170
<b>13 Total Contracts</b>	<b>563</b>	<b>930</b>	<b>890</b>	<b>931</b>	<b>889</b>	<b>738</b>	<b>702</b>	<b>674</b>	<b>667</b>	<b>497</b>	<b>478</b>	<b>502</b>	<b>501</b>	<b>111</b>	<b>656</b>
<i>-Total Contracts Out-</i>															
14 Federal System	328	637	667	691	657	523	488	459	451	266	266	282	268	59	440
15 Public Entities	7.1	7.7	8.4	7.7	7.5	6.7	5.7	5.7	7.4	8.6	8.4	9.3	9.3	7.1	7.7
16 Investor-Owned Entities	227	286	214	232	224	209	208	209	209	221	203	211	223	44	208
17 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>18 Total Contracts Out</b>	<b>563</b>	<b>930</b>	<b>890</b>	<b>931</b>	<b>889</b>	<b>738</b>	<b>702</b>	<b>674</b>	<b>667</b>	<b>497</b>	<b>478</b>	<b>502</b>	<b>501</b>	<b>111</b>	<b>656</b>
<i>-Total Contracts In-</i>															
19 Federal System	235	293	223	240	231	216	214	215	217	230	211	221	233	51	216
20 Public Entities	0	0	0	0	0	0	0	0	230	0	0	19	19	0	21
21 Investor-Owned Entities	328	637	667	691	657	523	488	459	221	266	266	263	249	59	419
22 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>23 Total Contracts In</b>	<b>563</b>	<b>930</b>	<b>890</b>	<b>931</b>	<b>889</b>	<b>738</b>	<b>702</b>	<b>674</b>	<b>667</b>	<b>497</b>	<b>478</b>	<b>502</b>	<b>501</b>	<b>111</b>	<b>656</b>

Table A-22: BPA Power Sale Contracts  
 PNW Loads and Resource Study  
 2009 - 2010 Fiscal Year  
 1937 Water Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<i>-Federal Entities-</i>															
1 Federal Entities	106	126	139	145	137	124	114	114	108	105	117	118	120	109	121
<b>2 Total Federal Entities</b>	<b>106</b>	<b>126</b>	<b>139</b>	<b>145</b>	<b>137</b>	<b>124</b>	<b>114</b>	<b>114</b>	<b>108</b>	<b>105</b>	<b>117</b>	<b>118</b>	<b>120</b>	<b>109</b>	<b>121</b>
<i>-U.S. Bureau of Reclamation-</i>															
3 U.S. Bureau of Reclamation	94	14	31	70	79	50	224	224	289	286	310	256	256	219	161
<b>4 Total U.S. Bureau of Reclamation</b>	<b>94</b>	<b>14</b>	<b>31</b>	<b>70</b>	<b>79</b>	<b>50</b>	<b>224</b>	<b>224</b>	<b>289</b>	<b>286</b>	<b>310</b>	<b>256</b>	<b>256</b>	<b>219</b>	<b>161</b>
<i>-Direct Service Industry-</i>															
5 Direct Service Industry	402	402	402	402	402	402	402	402	402	402	402	402	402	402	402
<b>6 Total Direct Service Industry</b>	<b>402</b>	<b>402</b>	<b>402</b>	<b>402</b>	<b>402</b>	<b>402</b>	<b>402</b>	<b>402</b>	<b>402</b>	<b>402</b>	<b>402</b>	<b>402</b>	<b>402</b>	<b>402</b>	<b>402</b>
<i>-Generating Public Entities-</i>															
7 Generating Public Entities	2015	2505	2756	2719	2695	2481	2135	2135	1935	1831	1896	1964	1976	2093	2250
<b>8 Total Generating Public Entities</b>	<b>2015</b>	<b>2505</b>	<b>2756</b>	<b>2719</b>	<b>2695</b>	<b>2481</b>	<b>2135</b>	<b>2135</b>	<b>1935</b>	<b>1831</b>	<b>1896</b>	<b>1964</b>	<b>1976</b>	<b>2093</b>	<b>2250</b>
<i>-Generating Public Entities (Slice)-</i>															
9 Generating Public Entities (Slice)	959	1134	1091	1098	979	924	718	776	1238	1057	1036	1120	952	938	1021
<b>10 Total Generating Public Entities (Slice)</b>	<b>959</b>	<b>1134</b>	<b>1091</b>	<b>1098</b>	<b>979</b>	<b>924</b>	<b>718</b>	<b>776</b>	<b>1238</b>	<b>1057</b>	<b>1036</b>	<b>1120</b>	<b>952</b>	<b>938</b>	<b>1021</b>
<i>-Non-Generating Public Entities-</i>															
11 Non-Generating Public Entities	2776	3207	3586	3647	3476	3011	2922	2922	2907	3033	3229	3106	3138	2849	3146
<b>12 Total Non-Generating Public Entities</b>	<b>2776</b>	<b>3207</b>	<b>3586</b>	<b>3647</b>	<b>3476</b>	<b>3011</b>	<b>2922</b>	<b>2922</b>	<b>2907</b>	<b>3033</b>	<b>3229</b>	<b>3106</b>	<b>3138</b>	<b>2849</b>	<b>3146</b>
<i>-Non-Generating Public Entities (Slice)-</i>															
13 Non-Generating Public Entities (Slice)	576	681	655	659	588	555	431	466	744	635	622	673	572	563	613
<b>14 Total Non-GenPublic Entities (Slice)</b>	<b>576</b>	<b>681</b>	<b>655</b>	<b>659</b>	<b>588</b>	<b>555</b>	<b>431</b>	<b>466</b>	<b>744</b>	<b>635</b>	<b>622</b>	<b>673</b>	<b>572</b>	<b>563</b>	<b>613</b>
<i>-Investor-Owned Entities-</i>															
15 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>16 Total Investor-Owned Entities</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>
<i>-Other Entities-</i>															
17 Other PNW Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>18 Total Other Entities</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>
<i>-Power Sales Contracts-</i>															
19 Federal Entities	106	126	139	145	137	124	114	114	108	105	117	118	120	109	121
20 U.S. Bureau of Reclamation	94	14	31	70	79	50	224	224	289	286	310	256	256	219	161
21 Direct Service Industry	402	402	402	402	402	402	402	402	402	402	402	402	402	402	402
22 Generating Public Entities	2974	3640	3847	3817	3673	3405	2854	2911	3174	2888	2931	3084	2928	3031	3271
23 Non-Generating Public Entities	3352	3888	4241	4306	4064	3566	3353	3388	3651	3668	3851	3779	3710	3412	3759
24 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>26 Total Power Sales Contracts</b>	<b>6928</b>	<b>8070</b>	<b>8660</b>	<b>8741</b>	<b>8355</b>	<b>7548</b>	<b>6946</b>	<b>7039</b>	<b>7624</b>	<b>7349</b>	<b>7612</b>	<b>7639</b>	<b>7416</b>	<b>7172</b>	<b>7713</b>

Table A-22: BPA Power Sale Contracts  
 PNW Loads and Resource Study  
 2010 - 2011 Fiscal Year  
 1937 Water Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<i>-Federal Entities-</i>															
1 Federal Entities	110	130	143	148	140	126	115	115	110	107	119	121	121	110	123
<b>2 Total Federal Entities</b>	<b>110</b>	<b>130</b>	<b>143</b>	<b>148</b>	<b>140</b>	<b>126</b>	<b>115</b>	<b>115</b>	<b>110</b>	<b>107</b>	<b>119</b>	<b>121</b>	<b>121</b>	<b>110</b>	<b>123</b>
<i>-U.S. Bureau of Reclamation-</i>															
3 U.S. Bureau of Reclamation	94	14	31	70	79	50	224	224	289	286	310	256	256	219	161
<b>4 Total U.S. Bureau of Reclamation</b>	<b>94</b>	<b>14</b>	<b>31</b>	<b>70</b>	<b>79</b>	<b>50</b>	<b>224</b>	<b>224</b>	<b>289</b>	<b>286</b>	<b>310</b>	<b>256</b>	<b>256</b>	<b>219</b>	<b>161</b>
<i>-Direct Service Industry-</i>															
5 Direct Service Industry	402	402	402	402	402	402	402	402	402	402	402	402	402	402	402
<b>6 Total Direct Service Industry</b>	<b>402</b>	<b>402</b>	<b>402</b>	<b>402</b>	<b>402</b>	<b>402</b>	<b>402</b>	<b>402</b>	<b>402</b>	<b>402</b>	<b>402</b>	<b>402</b>	<b>402</b>	<b>402</b>	<b>402</b>
<i>-Generating Public Entities-</i>															
7 Generating Public Entities	2014	2507	2756	2719	2696	2481	2136	2136	1935	1831	1898	1965	1966	2093	2250
<b>8 Total Generating Public Entities</b>	<b>2014</b>	<b>2507</b>	<b>2756</b>	<b>2719</b>	<b>2696</b>	<b>2481</b>	<b>2136</b>	<b>2136</b>	<b>1935</b>	<b>1831</b>	<b>1898</b>	<b>1965</b>	<b>1966</b>	<b>2093</b>	<b>2250</b>
<i>-Generating Public Entities (Slice)-</i>															
9 Generating Public Entities (Slice)	967	1142	1098	1105	986	931	658	641	1103	922	1024	1122	955	940	993
<b>10 Total Generating Public Entities (Slice)</b>	<b>967</b>	<b>1142</b>	<b>1098</b>	<b>1105</b>	<b>986</b>	<b>931</b>	<b>658</b>	<b>641</b>	<b>1103</b>	<b>922</b>	<b>1024</b>	<b>1122</b>	<b>955</b>	<b>940</b>	<b>993</b>
<i>-Non-Generating Public Entities-</i>															
11 Non-Generating Public Entities	2834	3265	3636	3703	3524	3064	2974	2974	2956	3082	3293	3170	3172	2895	3199
<b>12 Total Non-Generating Public Entities</b>	<b>2834</b>	<b>3265</b>	<b>3636</b>	<b>3703</b>	<b>3524</b>	<b>3064</b>	<b>2974</b>	<b>2974</b>	<b>2956</b>	<b>3082</b>	<b>3293</b>	<b>3170</b>	<b>3172</b>	<b>2895</b>	<b>3199</b>
<i>-Non-Generating Public Entities (Slice)-</i>															
13 Non-Generating Public Entities (Slice)	580	686	660	663	592	559	395	385	663	554	615	674	573	565	596
<b>14 Total Non-Gen Public Entities (Slice)</b>	<b>580</b>	<b>686</b>	<b>660</b>	<b>663</b>	<b>592</b>	<b>559</b>	<b>395</b>	<b>385</b>	<b>663</b>	<b>554</b>	<b>615</b>	<b>674</b>	<b>573</b>	<b>565</b>	<b>596</b>
<i>-Investor-Owned Entities-</i>															
15 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>16 Total Investor-Owned Entities</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>
<i>-Other Entities-</i>															
17 Other PNW Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>18 Total Other Entities</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>
<i>-Power Sales Contracts-</i>															
19 Federal Entities	110	130	143	148	140	126	115	115	110	107	119	121	121	110	123
20 U.S. Bureau of Reclamation	94	14	31	70	79	50	224	224	289	286	310	256	256	219	161
21 Direct Service Industry	402	402	402	402	402	402	402	402	402	402	402	402	402	402	402
22 Generating Public Entities	2981	3648	3854	3824	3682	3412	2794	2776	3038	2753	2922	3088	2921	3033	3243
23 Non-Generating Public Entities	3414	3950	4296	4366	4116	3623	3369	3359	3618	3636	3908	3844	3746	3460	3795
24 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>26 Total Power Sales Contracts</b>	<b>7000</b>	<b>8145</b>	<b>8727</b>	<b>8810</b>	<b>8419</b>	<b>7614</b>	<b>6905</b>	<b>6876</b>	<b>7457</b>	<b>7184</b>	<b>7661</b>	<b>7710</b>	<b>7445</b>	<b>7224</b>	<b>7724</b>

Table A-24: Federal NUG Resources By Project And Project Type  
 PNW Loads and Resource Study  
 2009 - 2010 Fiscal Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<i>-NUG: Hydro-</i>															
1 Dworshak/Clearwater Small Hydropower	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
2 Elwha Hydro	3.6	9.5	11	12	9.1	8.8	17	17	9.0	8.5	5.4	8.2	7.7	2.3	8.6
3 Glines Canyon Hydro	6.7	14	16	15	14	14	25	25	30	16	11	16	15	4.1	15
<b>4 Total NUG: Hydro</b>	<b>13</b>	<b>26</b>	<b>30</b>	<b>29</b>	<b>26</b>	<b>25</b>	<b>45</b>	<b>45</b>	<b>41</b>	<b>27</b>	<b>19</b>	<b>27</b>	<b>25</b>	<b>9.0</b>	<b>26</b>
<i>-NUG: Renewables-</i>															
5 Ashland Solar Project	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 White Bluffs Solar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>7 Total NUG: Renewables</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>
<i>-Total Non-Utility Generating Resources-</i>															
8 Federal Entities	13	26	30	29	26	25	45	45	41	27	19	27	25	9.0	26
9 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>12 Total Non-Utility Generation</b>	<b>13</b>	<b>26</b>	<b>30</b>	<b>29</b>	<b>26</b>	<b>25</b>	<b>45</b>	<b>45</b>	<b>41</b>	<b>27</b>	<b>19</b>	<b>27</b>	<b>25</b>	<b>9.0</b>	<b>26</b>

Table A-24: Federal NUG Resources By Project And Project Type  
 PNW Loads and Resource Study  
 2010 - 2011 Fiscal Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<i>-NUG: Hydro-</i>															
1 Dworshak/Clearwater Small Hydropower	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
2 Elwha Hydro	3.6	9.5	11	12	9.1	8.8	17	17	9.0	8.5	5.4	8.2	7.7	2.3	8.6
3 Glines Canyon Hydro	6.7	14	16	15	14	14	25	25	30	16	11	16	15	4.1	15
<b>4 Total NUG: Hydro</b>	<b>13</b>	<b>26</b>	<b>30</b>	<b>29</b>	<b>26</b>	<b>25</b>	<b>45</b>	<b>45</b>	<b>41</b>	<b>27</b>	<b>19</b>	<b>27</b>	<b>25</b>	<b>9.0</b>	<b>26</b>
<i>-NUG: Renewables-</i>															
5 Ashland Solar Project	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 White Bluffs Solar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>7 Total NUG: Renewables</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>
<i>-Total Non-Utility Generating Resources-</i>															
8 Federal Entities	13	26	30	29	26	25	45	45	41	27	19	27	25	9.0	26
9 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>12 Total Non-Utility Generation</b>	<b>13</b>	<b>26</b>	<b>30</b>	<b>29</b>	<b>26</b>	<b>25</b>	<b>45</b>	<b>45</b>	<b>41</b>	<b>27</b>	<b>19</b>	<b>27</b>	<b>25</b>	<b>9.0</b>	<b>26</b>

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**HLH MWhs ANALYSIS**

**2.5 FEDERAL LOADS AND RESOURCES STUDY-HLH MWhs ANALYSIS**  
**Monthly HLH MWhs Energy**  
**For FY 2010 and 2011**

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Table A-2: Federal Exports  
 PNW Loads and Resource Study  
 2009 - 2010 Fiscal Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Heavy (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<i>-Exports East of Continental Divide-</i>															
1 BPA to Other Entities	18365	18874	21874	21179	18821	20116	8679	8679	16745	18239	19123	9241	10646	15714	226293
<b>2 Total Exports to ECD</b>	<b>18365</b>	<b>18874</b>	<b>21874</b>	<b>21179</b>	<b>18821</b>	<b>20116</b>	<b>8679</b>	<b>8679</b>	<b>16745</b>	<b>18239</b>	<b>19123</b>	<b>9241</b>	<b>10646</b>	<b>15714</b>	<b>226293</b>
<i>-Exports to Pacific Southwest-</i>															
3 BPA to Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 BPA to PASA C/N/X	0	0	0	0	0	0	0	0	0	0	3318	1606	1713	3211	9848
5 BPA to PASA S/N/X	0	0	0	0	0	0	0	0	1659	1606	0	0	0	0	3265
6 BPA to RVSD CapS	0	3360	3680	3360	3200	3680	1760	1760	4830	0	0	0	0	0	25630
7 BPA to RVSD C/N/X	5060	0	0	0	0	0	0	0	0	0	0	0	0	0	5060
8 BPA to RVSD C/N/X	7920	1890	2070	1890	1800	2070	990	990	0	0	7920	3600	4320	7920	43380
9 BPA to RVSD S/Pwr/X	0	0	0	0	0	0	0	0	11340	11880	0	0	0	0	23220
10 BPA NW-SW Intertie Losses	389	158	172	158	150	172	82	82	535	405	337	156	181	334	3312
<b>11 Total Exports To PSW</b>	<b>13369</b>	<b>5408</b>	<b>5922</b>	<b>5408</b>	<b>5150</b>	<b>5922</b>	<b>2832</b>	<b>2832</b>	<b>18364</b>	<b>13890</b>	<b>11575</b>	<b>5362</b>	<b>6214</b>	<b>11465</b>	<b>113714</b>
<i>-Exports to Inland Southwest-</i>															
12 BPA to SPP PwrS	19440	17280	18720	18000	17280	19440	15600	15600	30000	31200	31200	14400	16800	30000	294960
<b>13 Total Exports To ISW</b>	<b>19440</b>	<b>17280</b>	<b>18720</b>	<b>18000</b>	<b>17280</b>	<b>19440</b>	<b>15600</b>	<b>15600</b>	<b>30000</b>	<b>31200</b>	<b>31200</b>	<b>14400</b>	<b>16800</b>	<b>30000</b>	<b>294960</b>
<i>-Exports to Canada-</i>															
14 BPA to BCHP CanEnt	422490	408312	421922	421922	381091	421922	203589	204156	421922	408312	421922	189720	202368	379440	4909090
<b>15 Total Exports To Canada</b>	<b>422490</b>	<b>408312</b>	<b>421922</b>	<b>421922</b>	<b>381091</b>	<b>421922</b>	<b>203589</b>	<b>204156</b>	<b>421922</b>	<b>408312</b>	<b>421922</b>	<b>189720</b>	<b>202368</b>	<b>379440</b>	<b>4909090</b>
<i>-Exports to Other Entities-</i>															
<b>16 Total Exports To Other Entities</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>
<i>-Total Exports-</i>															
17 Federal Entities	473664	449874	468439	466509	422342	467400	230700	231267	487032	471641	483821	218723	236028	436619	5544057
18 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>21 Total Exports.</b>	<b>473664</b>	<b>449874</b>	<b>468439</b>	<b>466509</b>	<b>422342</b>	<b>467400</b>	<b>230700</b>	<b>231267</b>	<b>487032</b>	<b>471641</b>	<b>483821</b>	<b>218723</b>	<b>236028</b>	<b>436619</b>	<b>5544057</b>

Table A-2: Federal Exports  
 PNW Loads and Resource Study  
 2010 - 2011 Fiscal Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Heavy (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<i>-Exports East of Continental Divide-</i>															
1 BPA to Other Entities	18083	18576	20718	20050	18532	19782	8531	8531	16453	17918	20085	9929	10679	16054	223921
<b>2 Total Exports to ECD</b>	<b>18083</b>	<b>18576</b>	<b>20718</b>	<b>20050</b>	<b>18532</b>	<b>19782</b>	<b>8531</b>	<b>8531</b>	<b>16453</b>	<b>17918</b>	<b>20085</b>	<b>9929</b>	<b>10679</b>	<b>16054</b>	<b>223921</b>
<i>-Exports to Pacific Southwest-</i>															
3 BPA to Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 BPA to PASA C/N/X	0	0	0	0	0	0	0	0	0	0	3318	1606	1713	3211	9848
5 BPA to PASA S/N/X	0	0	0	0	0	0	0	0	1659	1606	0	0	0	0	3265
6 BPA to RVSD C/N/X	7560	1980	2070	1890	1800	2070	990	900	0	0	7560	3960	4320	7560	42660
7 BPA to RVSD S/Pwr/X	0	0	0	0	0	0	0	0	11880	11880	0	0	0	0	23760
8 BPA NW-SW Intertie Losses	227	59	62	57	54	62	30	27	406	405	326	167	181	323	2386
<b>9 Total Exports To PSW</b>	<b>7787</b>	<b>2039</b>	<b>2132</b>	<b>1947</b>	<b>1854</b>	<b>2132</b>	<b>1020</b>	<b>927</b>	<b>13945</b>	<b>13890</b>	<b>11205</b>	<b>5733</b>	<b>6214</b>	<b>11094</b>	<b>81918</b>
<i>-Exports to Inland Southwest-</i>															
10 BPA to SPP PwrS	18720	18000	18720	18000	17280	19440	15600	15600	30000	31200	30000	15600	16800	30000	294960
<b>11 Total Exports To ISW</b>	<b>18720</b>	<b>18000</b>	<b>18720</b>	<b>18000</b>	<b>17280</b>	<b>19440</b>	<b>15600</b>	<b>15600</b>	<b>30000</b>	<b>31200</b>	<b>30000</b>	<b>15600</b>	<b>16800</b>	<b>30000</b>	<b>294960</b>
<i>-Exports to Canada-</i>															
12 BPA to BHP CanEnt	392615	379440	392088	392088	354144	392088	189193	189720	392088	379440	392088	186120	198528	372240	4601880
<b>13 Total Exports To Canada</b>	<b>392615</b>	<b>379440</b>	<b>392088</b>	<b>392088</b>	<b>354144</b>	<b>392088</b>	<b>189193</b>	<b>189720</b>	<b>392088</b>	<b>379440</b>	<b>392088</b>	<b>186120</b>	<b>198528</b>	<b>372240</b>	<b>4601880</b>
<i>-Exports to Other Entities-</i>															
<b>14 Total Exports To Other Entities</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>
<i>-Total Exports-</i>															
15 Federal Entities	437205	418055	433658	432085	391810	433442	214344	214778	452487	442448	453378	217382	232221	429389	5202680
16 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>19 Total Exports.</b>	<b>437205</b>	<b>418055</b>	<b>433658</b>	<b>432085</b>	<b>391810</b>	<b>433442</b>	<b>214344</b>	<b>214778</b>	<b>452487</b>	<b>442448</b>	<b>453378</b>	<b>217382</b>	<b>232221</b>	<b>429389</b>	<b>5202680</b>

Table A-5: Federal Imports  
 PNW Loads and Resource Study  
 2009 - 2010 Fiscal Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Heavy (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<i>-Imports From East of Continental Divide-</i>															
1 PPL to BPA PwrS	77230	103094	142159	140748	115666	125777	52542	46450	32366	34496	46014	23370	20725	35022	995659
<b>2 Total Imports From ECD</b>	<b>77230</b>	<b>103094</b>	<b>142159</b>	<b>140748</b>	<b>115666</b>	<b>125777</b>	<b>52542</b>	<b>46450</b>	<b>32366</b>	<b>34496</b>	<b>46014</b>	<b>23370</b>	<b>20725</b>	<b>35022</b>	<b>995659</b>
<i>-Imports From Pacific Southwest-</i>															
3 PASA to BPA XchgNrg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 PASA to BPA S/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 PASA to BPA PkRepl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 RVSD to BPA XchgNrg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 RVSD to BPA PkRepl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 RVSD to BPA PkRepl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 RVSD to BPA XchgNrg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 RVSD to BPA S/Pwr/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 RVSD to BPA PkRepl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>12 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>
<i>-Imports From Inland Southwest-</i>															
13 SPP to BPA PwrS	19440	17280	18720	18000	17280	19440	15600	15600	30000	31200	31200	14400	16800	30000	294960
<b>14 Total Imports From ISW</b>	<b>19440</b>	<b>17280</b>	<b>18720</b>	<b>18000</b>	<b>17280</b>	<b>19440</b>	<b>15600</b>	<b>15600</b>	<b>30000</b>	<b>31200</b>	<b>31200</b>	<b>14400</b>	<b>16800</b>	<b>30000</b>	<b>294960</b>
<i>-Imports From Canada-</i>															
15 BCHP to BPA PwrS	432	400	432	416	384	432	208	208	416	416	432	192	224	416	5008
<b>16 Total Imports From Canada</b>	<b>432</b>	<b>400</b>	<b>432</b>	<b>416</b>	<b>384</b>	<b>432</b>	<b>208</b>	<b>208</b>	<b>416</b>	<b>416</b>	<b>432</b>	<b>192</b>	<b>224</b>	<b>416</b>	<b>5008</b>
<i>-Imports From Other Entities-</i>															
<b>17 Total Imports From Other Entities</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>
<i>-Total Imports-</i>															
18 Federal System	97102	120774	161311	159164	133330	145649	68350	62258	62782	66112	77646	37962	37749	65438	1295627
19 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>22 Total Imports.</b>	<b>97102</b>	<b>120774</b>	<b>161311</b>	<b>159164</b>	<b>133330</b>	<b>145649</b>	<b>68350</b>	<b>62258</b>	<b>62782</b>	<b>66112</b>	<b>77646</b>	<b>37962</b>	<b>37749</b>	<b>65438</b>	<b>1295627</b>

Table A-5: Federal Imports  
 PNW Loads and Resource Study  
 2010 - 2011 Fiscal Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Heavy (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<i>-Imports From East of Continental Divide-</i>															
1 PPL to BPA PwrS	77230	103094	142159	140748	115666	125777	52542	46450	32366	34496	46014	23370	20725	35022	995659
<b>2 Total Imports From ECD</b>	<b>77230</b>	<b>103094</b>	<b>142159</b>	<b>140748</b>	<b>115666</b>	<b>125777</b>	<b>52542</b>	<b>46450</b>	<b>32366</b>	<b>34496</b>	<b>46014</b>	<b>23370</b>	<b>20725</b>	<b>35022</b>	<b>995659</b>
<i>-Imports From Pacific Southwest-</i>															
3 PASA to BPA XchgNrg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 PASA to BPA S/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 PASA to BPA PkRepl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 RVSD to BPA XchgNrg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 RVSD to BPA S/Pwr/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 RVSD to BPA PkRepl	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>
<i>-Imports From Inland Southwest-</i>															
10 SPP to BPA PwrS	18720	18000	18720	18000	17280	19440	15600	15600	30000	31200	30000	15600	16800	30000	294960
<b>11 Total Imports From ISW</b>	<b>18720</b>	<b>18000</b>	<b>18720</b>	<b>18000</b>	<b>17280</b>	<b>19440</b>	<b>15600</b>	<b>15600</b>	<b>30000</b>	<b>31200</b>	<b>30000</b>	<b>15600</b>	<b>16800</b>	<b>30000</b>	<b>294960</b>
<i>-Imports From Canada-</i>															
12 BHP to BPA PwrS	416	416	432	416	384	432	208	208	416	416	416	208	224	416	5008
<b>13 Total Imports From Canada</b>	<b>416</b>	<b>416</b>	<b>432</b>	<b>416</b>	<b>384</b>	<b>432</b>	<b>208</b>	<b>208</b>	<b>416</b>	<b>416</b>	<b>416</b>	<b>208</b>	<b>224</b>	<b>416</b>	<b>5008</b>
<i>-Imports From Other Entities-</i>															
<b>14 Total Imports From Other Entities</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>
<i>-Total Imports-</i>															
15 Federal System	96366	121510	161311	159164	133330	145649	68350	62258	62782	66112	76430	39178	37749	65438	1295627
16 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>19 Total Imports.</b>	<b>96366</b>	<b>121510</b>	<b>161311</b>	<b>159164</b>	<b>133330</b>	<b>145649</b>	<b>68350</b>	<b>62258</b>	<b>62782</b>	<b>66112</b>	<b>76430</b>	<b>39178</b>	<b>37749</b>	<b>65438</b>	<b>1295627</b>

Table A-8: Federal Renewable Resources  
 PNW Loads and Resource Study  
 2009 - 2010 Fiscal Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Heavy (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<i>-Federal System-</i>															
1 Condon Wind Project	4282	4879	5449	5704	4581	5989	2360	1972	3777	4082	3059	1300	1925	3359	52718
2 Foote Creek 1	1757	2059	2003	1959	1959	2266	839	720	1053	1168	601	396	567	1051	18397
3 Foote Creek 2	206	242	235	230	230	266	99	85	124	137	71	47	67	123	2162
4 Foote Creek 4	1927	2258	2197	2148	2149	2485	920	789	1155	1281	660	434	622	1152	20176
5 Klondike I	2752	1969	2186	2300	2621	3280	1917	1845	3836	4597	4102	1908	2115	3315	38743
6 Klondike III	5724	3996	4043	4371	5271	7392	4178	4339	9008	10494	9288	2972	5173	4582	80832
7 Stateline Wind Project	7910	8265	7624	7930	5859	12854	5136	4197	7844	8965	6835	2534	4313	6477	96744
<b>8 Total Federal System</b>	<b>24557</b>	<b>23668</b>	<b>23739</b>	<b>24642</b>	<b>22671</b>	<b>34533</b>	<b>15447</b>	<b>13947</b>	<b>26796</b>	<b>30726</b>	<b>24615</b>	<b>9591</b>	<b>14782</b>	<b>20059</b>	<b>309772</b>
<i>-Renewable Resources-</i>															
9 Federal System	24557	23668	23739	24642	22671	34533	15447	13947	26796	30726	24615	9591	14782	20059	309772
10 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>13 Total Renewable Resources</b>	<b>24557</b>	<b>23668</b>	<b>23739</b>	<b>24642</b>	<b>22671</b>	<b>34533</b>	<b>15447</b>	<b>13947</b>	<b>26796</b>	<b>30726</b>	<b>24615</b>	<b>9591</b>	<b>14782</b>	<b>20059</b>	<b>309772</b>

Table A-8: Federal Renewable Resources  
 PNW Loads and Resource Study  
 2010 - 2011 Fiscal Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Heavy (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<i>-Federal System-</i>															
1 Condon Wind Project	4123	5082	5449	5704	4581	5989	2360	1972	3777	4082	2942	1408	1925	3359	52754
2 Foote Creek 1	1692	2144	2003	1959	1959	2266	839	720	1053	1168	578	429	567	1051	18427
3 Foote Creek 2	199	252	235	230	230	266	99	85	124	137	68	50	67	123	2165
4 Foote Creek 4	1855	2352	2197	2148	2149	2485	920	789	1155	1281	634	470	622	1152	20210
5 Klondike I	2650	2051	2186	2300	2621	3280	1917	1845	3836	4597	3944	2067	2115	3315	38724
6 Klondike III	5512	4163	4043	4371	5271	7392	4178	4339	9008	10494	8930	3220	5173	4582	80677
7 Stateline Wind Project	7617	8610	7624	7930	5859	12854	5136	4197	7844	8965	6572	2745	4313	6477	96744
<b>8 Total Federal System</b>	<b>23648</b>	<b>24654</b>	<b>23739</b>	<b>24642</b>	<b>22671</b>	<b>34533</b>	<b>15447</b>	<b>13947</b>	<b>26796</b>	<b>30726</b>	<b>23669</b>	<b>10390</b>	<b>14782</b>	<b>20059</b>	<b>309701</b>
<i>-Renewable Resources-</i>															
9 Federal System	23648	24654	23739	24642	22671	34533	15447	13947	26796	30726	23669	10390	14782	20059	309701
10 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>13 Total Renewable Resources</b>	<b>23648</b>	<b>24654</b>	<b>23739</b>	<b>24642</b>	<b>22671</b>	<b>34533</b>	<b>15447</b>	<b>13947</b>	<b>26796</b>	<b>30726</b>	<b>23669</b>	<b>10390</b>	<b>14782</b>	<b>20059</b>	<b>309701</b>

Table A-10: Federal Large Thermal  
 PNW Loads and Resource Study  
 2009 - 2010 Fiscal Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Heavy (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<i>-Columbia Generating Station: Uranium-</i>															
1 BPA - Power Business	444960	395520	428480	412000	395520	444960	214240	214240	412000	428480	428480	197760	230720	412000	5059360
2 Columbia Gen Station: Region Total	444960	395520	428480	412000	395520	444960	214240	214240	412000	428480	428480	197760	230720	412000	5059360
<i>-Total Large Thermal-</i>															
3 Federal System	444960	395520	428480	412000	395520	444960	214240	214240	412000	428480	428480	197760	230720	412000	5059360
4 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 Non-NW Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 Total Large Thermal	444960	395520	428480	412000	395520	444960	214240	214240	412000	428480	428480	197760	230720	412000	5059360



Table A-10: Federal Large Thermal  
 PNW Loads and Resource Study  
 2010 - 2011 Fiscal Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Heavy (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<i>-Columbia Generating Station: Uranium-</i>															
1 BPA - Power Business	428480	412000	428480	412000	395520	444960	114400	0	0	0	358800	214240	230720	412000	3851600
<b>2 Columbia Gen Station: Region Total</b>	<b>428480</b>	<b>412000</b>	<b>428480</b>	<b>412000</b>	<b>395520</b>	<b>444960</b>	<b>114400</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>358800</b>	<b>214240</b>	<b>230720</b>	<b>412000</b>	<b>3851600</b>
<i>-Total Large Thermal-</i>															
3 Federal System	428480	412000	428480	412000	395520	444960	114400	0	0	0	358800	214240	230720	412000	3851600
4 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 Non-NW Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>8 Total Large Thermal</b>	<b>428480</b>	<b>412000</b>	<b>428480</b>	<b>412000</b>	<b>395520</b>	<b>444960</b>	<b>114400</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>358800</b>	<b>214240</b>	<b>230720</b>	<b>412000</b>	<b>3851600</b>

Table A-15: Canadian Entitlement Return For Canada  
 PNW Loads and Resource Study  
 2009 - 2010 Fiscal Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Heavy (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<i>-BPA Canada-</i>															
1 BPA: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>-Priest Rapids CER for Canada-</i>															
2 AVWP to BPA	720	1149	1185	832	751	831	415	415	857	830	857	415	442	830	10528
3 COPD to BPA	334	381	393	393	355	392	196	196	405	392	405	196	209	392	4637
4 EWEB to BPA	26	125	129	31	28	31	15	15	32	31	32	15	16	31	557
5 FGRV to BPA	77	89	92	92	83	92	46	46	95	92	95	46	49	92	1087
6 GCPD to BPA	13608	10288	10616	13538	12227	13519	6750	6750	13951	13501	13951	6750	7200	13501	156150
7 KITT to BPA	61	30	31	31	28	31	15	15	32	31	32	15	16	31	398
8 MCMN to BPA	77	89	92	92	83	92	46	46	95	92	95	46	49	92	1087
9 MTFR to BPA	77	89	92	92	83	92	46	46	95	92	95	46	49	92	1087
10 PGE to BPA	1429	2455	2533	1892	1709	1889	943	943	1950	1887	1950	943	1006	1887	23415
11 PPL to BPA	206	1017	1049	244	220	243	121	121	251	243	251	121	130	243	4461
12 PSE to BPA	119	587	606	140	127	140	70	70	145	140	145	70	75	140	2573
13 SCL to BPA	119	249	257	59	54	59	30	30	61	59	61	30	32	59	1157
14 TPU to BPA	127	251	259	64	57	64	32	32	66	63	66	32	34	63	1209
15 UnknMkt to BPA	4969	4471	4613	4449	4018	4443	2218	2218	4585	4437	4585	2218	2366	4437	54027
16 Priest Rapids: Regional Totals	21948	21270	21948	21948	19824	21918	10944	10944	22618	21888	22618	10944	11674	21888	262373
<i>-Wanapum CER for Canada-</i>															
17 AVWP to BPA	1720	1098	1133	795	718	794	397	397	821	794	821	397	424	794	11103
18 COPD to BPA	566	364	376	376	339	375	188	188	388	375	388	188	200	375	4684
19 EWEB to BPA	483	120	124	29	27	29	15	15	30	29	30	15	16	29	990
20 FGRV to BPA	147	85	88	88	80	88	44	44	91	88	91	44	47	88	1113
21 GCPD to BPA	7658	9835	10148	12941	11689	12924	6462	6462	13354	12923	13354	6462	6892	12923	144026
22 KITT to BPA	0	28	29	29	27	29	15	15	30	29	30	15	16	29	322
23 MCMN to BPA	147	85	88	88	80	88	44	44	91	88	91	44	47	88	1113
24 MTFR to BPA	147	85	88	88	80	88	44	44	91	88	91	44	47	88	1113
25 PGE to BPA	3923	2346	2421	1809	1634	1806	903	903	1866	1806	1866	903	963	1806	24956
26 PPL to BPA	3923	972	1003	233	210	233	116	116	240	233	240	116	124	233	7993
27 PSE to BPA	2266	561	579	134	121	134	67	67	139	134	139	67	72	134	4614
28 SCL to BPA	0	238	245	57	51	57	28	28	58	57	58	28	30	57	993
29 TPU to BPA	0	240	248	61	55	61	30	30	63	61	63	30	32	61	1035
30 UnknMkt to BPA	0	4274	4410	4253	3841	4247	2123	2123	4389	4247	4389	2123	2265	4247	46932
31 Wanapum: Regional Totals	20981	20332	20981	20981	18950	20953	10476	10476	21650	20952	21650	10476	11174	20952	250985
<i>-Rock Island P.H. #1 CER for Canada-</i>															
32 APGI to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33 CHPD to BPA	4055	3929	4055	4055	3662	4049	2016	2016	4166	4032	4166	2016	2150	4032	48401
34 PSE to BPA	4055	3929	4055	4055	3662	4049	2016	2016	4166	4032	4166	2016	2150	4032	48401
35 Rock Island P.H. #1: Regional Totals	8110	7859	8110	8110	7325	8099	4032	4032	8333	8064	8333	4032	4301	8064	96802
<i>-Rock Island P.H. #2 CER for Canada-</i>															
36 APGI to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37 CHPD to BPA	2597	2516	2597	2597	2345	2593	1294	1294	2675	2588	2675	1294	1380	2588	31034
38 PSE to BPA	2597	2516	2597	2597	2345	2593	1294	1294	2675	2588	2675	1294	1380	2588	31034
39 Rock Island P.H. #2: Regional Totals	5193	5033	5193	5193	4691	5186	2588	2588	5349	5177	5349	2588	2761	5177	62067
<i>-Rocky Reach CER for Canada-</i>															
40 APGI to BPA	6349	6152	6349	6349	5734	6340	3171	3171	6554	6342	6554	3171	3383	6342	75961
41 AVWP to BPA	800	776	800	800	723	799	400	400	826	800	826	400	427	800	9578
42 CHPD to BPA	4168	4039	4168	4168	3765	4162	2082	2082	4303	4164	4303	2082	2221	4164	49870
43 DOPD to BPA	745	722	745	745	673	744	372	372	769	745	769	372	397	745	8917
44 PGE to BPA	3340	3237	3340	3340	3017	3335	1668	1668	3448	3337	3448	1668	1780	3337	39962
45 PPL to BPA	1463	1418	1463	1463	1321	1461	731	731	1510	1462	1510	731	779	1462	17504
46 PSE to BPA	10737	10405	10737	10737	9698	10723	5364	5364	11085	10727	11085	5364	5721	10727	128474
47 Rocky Reach: Regional Totals	27602	26749	27602	27602	24931	27565	13788	13788	28495	27576	28495	13788	14707	27576	330266
<i>-Wells CER for Canada-</i>															
48 AVWP to BPA	597	577	596	596	539	596	296	297	614	594	614	297	317	594	7125

Table A-15: Canadian Entitlement Return For Canada  
 PNW Loads and Resource Study  
 2009 - 2010 Fiscal Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

Continued

7/21/2009

Heavy (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
49 COLV to BPA	805	778	804	804	726	804	399	400	827	800	827	400	427	800	9599
50 DOPD to BPA	5123	4951	5116	5116	4621	5116	2540	2548	5265	5095	5265	2548	2717	5095	61114
51 OKPD to BPA	1366	1320	1364	1364	1232	1364	677	679	1404	1359	1404	679	725	1359	16297
52 PGE to BPA	3467	3351	3462	3462	3127	3462	1719	1724	3563	3448	3563	1724	1839	3448	41362
53 PPL to BPA	1178	1139	1177	1177	1063	1177	584	586	1211	1172	1211	586	625	1172	14057
54 PSE to BPA	5344	5165	5337	5337	4821	5337	2650	2658	5493	5316	5493	2658	2835	5316	63759
<b>55 Wells: Regional Totals</b>	<b>17880</b>	<b>17280</b>	<b>17856</b>	<b>17856</b>	<b>16128</b>	<b>17856</b>	<b>8867</b>	<b>8892</b>	<b>18377</b>	<b>17784</b>	<b>18377</b>	<b>8892</b>	<b>9485</b>	<b>17784</b>	<b>213314</b>
<i>-Total CER For Canada-</i>															
56 Federal System	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
57 Public Entities	42511	40929	42244	46996	42448	46943	23427	23437	48436	46873	48436	23437	24999	46873	547988
58 Investor-Owned Entities	47885	42697	44073	39643	35807	39604	19756	19771	40859	39541	40859	19771	21089	39541	490898
59 Other Entities	11318	14897	15372	15050	13594	15030	7513	7513	15527	15026	15527	7513	8014	15026	176920
60 Non-NW Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>61 Total CER For Canada</b>	<b>101714</b>	<b>98522</b>	<b>101690</b>	<b>101690</b>	<b>91849</b>	<b>101577</b>	<b>50696</b>	<b>50720</b>	<b>104822</b>	<b>101441</b>	<b>104822</b>	<b>50720</b>	<b>54102</b>	<b>101441</b>	<b>1215806</b>

Table A-15: Canadian Entitlement Return For Canada  
 PNW Loads and Resource Study  
 2010 - 2011 Fiscal Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Heavy (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<i>-BPA Canada-</i>															
1 BPA: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>-Priest Rapids CER for Canada-</i>															
2 AVWP to BPA	857	831	857	857	774	856	411	411	849	821	849	411	438	821	10043
3 COPD to BPA	405	392	405	405	366	404	194	194	401	388	401	194	207	388	4743
4 EWEB to BPA	32	31	32	32	29	32	15	15	31	30	31	15	16	30	371
5 FGRV to BPA	95	92	95	95	86	95	46	46	94	91	94	46	49	91	1113
6 GCPD to BPA	13951	13519	13951	13951	12600	13932	6684	6684	13813	13367	13813	6684	7129	13367	163444
7 KITT to BPA	32	31	32	32	29	32	15	15	31	30	31	15	16	30	371
8 MCMN to BPA	95	92	95	95	86	95	46	46	94	91	94	46	49	91	1113
9 MTFR to BPA	95	92	95	95	86	95	46	46	94	91	94	46	49	91	1113
10 PGE to BPA	1950	1889	1950	1950	1761	1947	934	934	1930	1868	1930	934	996	1868	22842
11 PPL to BPA	251	243	251	251	227	251	120	120	249	241	249	120	128	241	2941
12 PSE to BPA	145	140	145	145	131	145	69	69	143	139	143	69	74	139	1696
13 SCL to BPA	61	59	61	61	55	61	29	29	60	59	60	29	31	59	715
14 TPU to BPA	66	64	66	66	59	66	31	31	65	63	65	31	34	63	768
15 UnknMkt to BPA	4585	4443	4585	4585	4141	4578	2196	2196	4539	4393	4539	2196	2343	4393	53713
16 Priest Rapids: Regional Totals	22618	21918	22618	22618	20429	22587	10836	10836	22394	21672	22394	10836	11558	21672	264986
<i>-Wanapum CER for Canada-</i>															
17 AVWP to BPA	821	795	821	821	741	819	392	392	809	783	809	392	418	783	9595
18 COPD to BPA	388	376	388	388	350	387	185	185	382	370	382	185	197	370	4532
19 EWEB to BPA	30	29	30	30	27	30	14	14	30	29	30	14	15	29	354
20 FGRV to BPA	91	88	91	91	82	91	43	43	90	87	90	43	46	87	1063
21 GCPD to BPA	13354	12941	13354	13354	12062	13336	6373	6373	13170	12746	13170	6373	6798	12746	156149
22 KITT to BPA	30	29	30	30	27	30	14	14	30	29	30	14	15	29	354
23 MCMN to BPA	91	88	91	91	82	91	43	43	90	87	90	43	46	87	1063
24 MTFR to BPA	91	88	91	91	82	91	43	43	90	87	90	43	46	87	1063
25 PGE to BPA	1866	1809	1866	1866	1686	1864	891	891	1841	1781	1841	891	950	1781	21822
26 PPL to BPA	240	233	240	240	217	240	115	115	237	229	237	115	122	229	2810
27 PSE to BPA	139	134	139	139	125	138	66	66	137	132	137	66	71	132	1620
28 SCL to BPA	58	57	58	58	53	58	28	28	58	56	58	28	30	56	684
29 TPU to BPA	63	61	63	63	57	63	30	30	62	60	62	30	32	60	734
30 UnknMkt to BPA	4389	4253	4389	4389	3964	4383	2094	2094	4328	4189	4328	2094	2234	4189	51315
31 Wanapum: Regional Totals	21650	20981	21650	21650	19555	21621	10332	10332	21353	20664	21353	10332	11021	20664	253159
<i>-Rock Island P.H. #1 CER for Canada-</i>															
32 APGI to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33 CHPD to BPA	4166	4038	4166	4166	3763	4161	1998	1998	4129	3996	4129	1998	2131	3996	48836
34 PSE to BPA	4166	4038	4166	4166	3763	4161	1998	1998	4129	3996	4129	1998	2131	3996	48836
35 Rock Island P.H. #1: Regional Totals	8333	8075	8333	8333	7526	8322	3996	3996	8258	7992	8258	3996	4262	7992	97673
<i>-Rock Island P.H. #2 CER for Canada-</i>															
36 APGI to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37 CHPD to BPA	2675	2592	2675	2675	2416	2671	1278	1278	2641	2556	2641	1278	1363	2556	31295
38 PSE to BPA	2675	2592	2675	2675	2416	2671	1278	1278	2641	2556	2641	1278	1363	2556	31295
39 Rock Island P.H. #2: Regional Totals	5349	5184	5349	5349	4832	5342	2556	2556	5282	5112	5282	2556	2726	5112	62589
<i>-Rocky Reach CER for Canada-</i>															
40 APGI to BPA	6554	6351	6554	6554	5920	6545	3130	3130	6468	6260	6468	3130	3338	6260	76662
41 AVWP to BPA	826	801	826	826	746	825	395	395	816	789	816	395	421	789	9666
42 CHPD to BPA	4303	4170	4303	4303	3886	4297	2055	2055	4247	4110	4247	2055	2192	4110	50330
43 DOPD to BPA	769	746	769	769	695	768	367	367	759	735	759	367	392	735	8999
44 PGE to BPA	3448	3341	3448	3448	3114	3443	1647	1647	3403	3293	3403	1647	1756	3293	40331
45 PPL to BPA	1510	1464	1510	1510	1364	1508	721	721	1491	1442	1491	721	769	1442	17666
46 PSE to BPA	11085	10742	11085	11085	10012	11070	5294	5294	10940	10587	10940	5294	5646	10587	129658
47 Rocky Reach: Regional Totals	28495	27614	28495	28495	25738	28457	13608	13608	28123	27216	28123	13608	14515	27216	333312
<i>-Wells CER for Canada-</i>															
48 AVWP to BPA	615	594	614	614	554	614	293	293	606	587	606	293	313	587	7183

Table A-15: Canadian Entitlement Return For Canada  
 PNW Loads and Resource Study  
 2010 - 2011 Fiscal Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

Continued

7/21/2009

Heavy (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
49 COLV to BPA	828	800	827	827	747	827	394	395	817	791	817	395	422	791	9677
50 DOPD to BPA	5272	5095	5265	5265	4755	5265	2510	2517	5201	5033	5201	2517	2684	5033	61613
51 OKPD to BPA	1406	1359	1404	1404	1268	1404	669	671	1387	1342	1387	671	716	1342	16430
52 PGE to BPA	3568	3448	3563	3563	3218	3563	1698	1703	3520	3406	3520	1703	1817	3406	41699
53 PPL to BPA	1213	1172	1211	1211	1094	1211	577	579	1196	1158	1196	579	617	1158	14172
54 PSE to BPA	5500	5316	5493	5493	4961	5493	2618	2626	5426	5251	5426	2626	2801	5251	64280
<b>55 Wells: Regional Totals</b>	<b>18402</b>	<b>17784</b>	<b>18377</b>	<b>18377</b>	<b>16598</b>	<b>18377</b>	<b>8760</b>	<b>8784</b>	<b>18154</b>	<b>17568</b>	<b>18154</b>	<b>8784</b>	<b>9370</b>	<b>17568</b>	<b>215055</b>
<i>-Total CER For Canada-</i>															
56 Federal System	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
57 Public Entities	48446	46928	48436	48436	43748	48381	23151	23161	47866	46322	47866	23161	24705	46322	566929
58 Investor-Owned Entities	40874	39582	40859	40859	36905	40819	19516	19530	40363	39061	40363	19530	20832	39061	478155
59 Other Entities	15527	15047	15527	15527	14024	15506	7421	7421	15336	14841	15336	7421	7915	14841	181690
60 Non-NW Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>61 Total CER For Canada</b>	<b>104847</b>	<b>101557</b>	<b>104822</b>	<b>104822</b>	<b>94678</b>	<b>104706</b>	<b>50088</b>	<b>50112</b>	<b>103565</b>	<b>100224</b>	<b>103565</b>	<b>50112</b>	<b>53453</b>	<b>100224</b>	<b>1226774</b>

Table A-16: Federal Intra-Regional Transfers  
 PNW Loads and Resource Study  
 2009 - 2010 Fiscal Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Heavy (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<i>-Intra-Regional Transfers-</i>															
1 BPA To AVWP WP3Set	0	32800	35424	34112	31488	17712	8528	8528	0	0	0	0	0	0	168592
2 BPA To CCPD SFIBlk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 BPA To Other Entities	0	0	0	0	0	0	0	0	92000	0	0	36096	42112	0	170208
4 BPA To PPL PwrS	77230	103094	142159	140748	115666	125777	52542	46450	32366	34496	46014	23370	20725	35022	995659
5 BPA To PPL CapS	98213	107882	99806	107575	88709	92410	43689	43568	96866	94043	83544	49342	53137	96424	1155208
6 BPA To PPL S/Pwr/X	0	0	0	0	0	0	0	0	0	14444	13978	0	0	0	28422
7 BPA To PPL S/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 BPA To PSE WP3Set	0	32800	35424	34112	31488	17712	8528	8528	0	0	0	0	0	0	168592
9 BPA To PSE PwrS	0	1750	1750	1750	0	0	0	0	0	0	0	0	0	0	5250
10 Other Entities To BPA	17322	21158	20089	14839	15887	17216	9045	9239	20836	23994	21678	7726	11574	12035	222637
11 PPL To BPA S/Pwr/X	9886	8787	0	0	0	0	0	0	0	0	0	0	0	9153	27826
12 PPL To BPA S/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 PPL To BPA PkRepl	8111	27576	21018	13841	22112	25299	5659	5621	10345	12088	26146	14806	16136	15653	224411
<b>14 Total Contracts</b>	<b>210762</b>	<b>335846</b>	<b>355671</b>	<b>346977</b>	<b>305350</b>	<b>296126</b>	<b>127991</b>	<b>121933</b>	<b>252412</b>	<b>179065</b>	<b>191359</b>	<b>131340</b>	<b>143684</b>	<b>168288</b>	<b>3166804</b>
<i>-Total Contracts Out-</i>															
15 Federal System	175443	278326	314563	318297	267351	253611	113287	107074	221232	142983	143536	108808	115974	131446	2691931
16 Public Entities	4056	3888	4626	4034	3799	3801	1559	1559	4260	5375	4734	2351	2742	3768	50553
17 Investor-Owned Entities	31262	53632	36481	24646	34201	38714	13145	13301	26920	30707	43089	20182	24968	33073	424320
18 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>19 Total Contracts Out</b>	<b>210762</b>	<b>335846</b>	<b>355671</b>	<b>346977</b>	<b>305350</b>	<b>296126</b>	<b>127991</b>	<b>121933</b>	<b>252412</b>	<b>179065</b>	<b>191359</b>	<b>131340</b>	<b>143684</b>	<b>168288</b>	<b>3166804</b>
<i>-Total Contracts In-</i>															
20 Federal System	35318	57520	41108	28680	37999	42515	14704	14860	31180	36082	47824	22532	27710	36841	474873
21 Public Entities	0	0	0	0	0	0	0	0	92000	0	0	36096	42112	0	170208
22 Investor-Owned Entities	175443	278326	314563	318297	267351	253611	113287	107074	129232	142983	143536	72712	73862	131446	2521723
23 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>24 Total Contracts In</b>	<b>210762</b>	<b>335846</b>	<b>355671</b>	<b>346977</b>	<b>305350</b>	<b>296126</b>	<b>127991</b>	<b>121933</b>	<b>252412</b>	<b>179065</b>	<b>191359</b>	<b>131340</b>	<b>143684</b>	<b>168288</b>	<b>3166804</b>

Table A-16: Federal Intra-Regional Transfers  
 PNW Loads and Resource Study  
 2010 - 2011 Fiscal Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Heavy (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<i>-Intra-Regional Transfers-</i>															
1 BPA To AVWP WP3Set	0	34112	35424	34112	31488	17712	8528	8528	0	0	0	0	0	0	169904
2 BPA To CCPD SFIBlk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 BPA To Other Entities	0	0	0	0	0	0	0	0	92000	0	0	3952	4256	0	100208
4 BPA To PPL CapS	98213	107882	99806	107575	88709	92410	43689	43568	96866	94043	83544	49342	53137	0	1058783
5 BPA To PPL S/Pwr/X	0	0	0	0	0	0	0	0	0	14444	13441	0	0	0	27885
6 BPA To PPL S/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 BPA To PPL PwrS	77230	103094	142159	140748	115666	125777	52542	46450	32366	34496	46014	23370	20725	35022	995659
8 BPA To PSE WP3Set	0	34112	35424	34112	31488	17712	8528	8528	0	0	0	0	0	0	169904
9 Other Entities To BPA	12880	18235	16065	11070	12290	16306	8672	8866	19550	22216	19776	7680	10904	11116	195627
10 PPL To BPA S/Pwr/X	9519	9153	0	0	0	0	0	0	0	0	0	0	0	9153	27825
11 PPL To BPA S/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12 PPL To BPA PkRepl	8111	27576	21018	13841	22112	25299	5659	5621	10345	12088	26146	14806	16136	0	208758
<b>13 Total Contracts</b>	<b>205953</b>	<b>334164</b>	<b>349896</b>	<b>341459</b>	<b>301752</b>	<b>295216</b>	<b>127619</b>	<b>121561</b>	<b>251126</b>	<b>177286</b>	<b>188921</b>	<b>99151</b>	<b>105159</b>	<b>55291</b>	<b>2954553</b>
<i>-Total Contracts Out-</i>															
14 Federal System	175443	279200	312813	316547	267351	253611	113287	107074	221232	142983	142999	76664	78118	35022	2522343
15 Public Entities	2970	3078	3514	3066	2889	2891	1186	1186	2974	3597	3368	1925	2073	2850	37566
16 Investor-Owned Entities	27540	51886	33569	21846	31513	38714	13145	13301	26920	30707	42554	20562	24968	17420	394644
17 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>18 Total Contracts Out</b>	<b>205953</b>	<b>334164</b>	<b>349896</b>	<b>341459</b>	<b>301752</b>	<b>295216</b>	<b>127619</b>	<b>121561</b>	<b>251126</b>	<b>177286</b>	<b>188921</b>	<b>99151</b>	<b>105159</b>	<b>55291</b>	<b>2954553</b>
<i>-Total Contracts In-</i>															
19 Federal System	30510	54964	37083	24911	34402	41605	14331	14487	29894	34304	45922	22487	27041	20269	432210
20 Public Entities	0	0	0	0	0	0	0	0	92000	0	0	3952	4256	0	100208
21 Investor-Owned Entities	175443	279200	312813	316547	267351	253611	113287	107074	129232	142983	142999	72712	73862	35022	2422135
22 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>23 Total Contracts In</b>	<b>205953</b>	<b>334164</b>	<b>349896</b>	<b>341459</b>	<b>301752</b>	<b>295216</b>	<b>127619</b>	<b>121561</b>	<b>251126</b>	<b>177286</b>	<b>188921</b>	<b>99151</b>	<b>105159</b>	<b>55291</b>	<b>2954553</b>

Table A-22: BPA Power Sale Contracts  
 PNW Loads and Resource Study  
 2009 - 2010 Fiscal Year  
 1937 Water Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Heavy (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<i>-Federal Entities-</i>															
1 Federal Entities	48044	53055	59316	62916	55243	55860	24500	24500	47851	46898	50049	25465	29709	46121	629527
<b>2 Total Federal Entities</b>	<b>48044</b>	<b>53055</b>	<b>59316</b>	<b>62916</b>	<b>55243</b>	<b>55860</b>	<b>24500</b>	<b>24500</b>	<b>47851</b>	<b>46898</b>	<b>50049</b>	<b>25465</b>	<b>29709</b>	<b>46121</b>	<b>629527</b>
<i>-U.S. Bureau of Reclamation-</i>															
3 U.S. Bureau of Reclamation	40533	5504	13062	28144	30357	21768	46525	46525	116130	118983	127337	49457	57700	87278	789304
<b>4 Total U.S. Bureau of Reclamation</b>	<b>40533</b>	<b>5504</b>	<b>13062</b>	<b>28144</b>	<b>30357</b>	<b>21768</b>	<b>46525</b>	<b>46525</b>	<b>116130</b>	<b>118983</b>	<b>127337</b>	<b>49457</b>	<b>57700</b>	<b>87278</b>	<b>789304</b>
<i>-Direct Service Industry-</i>															
5 Direct Service Industry	173664	154368	167232	160800	154368	173664	83616	83616	160800	167232	167232	77184	90048	160800	1974624
<b>6 Total Direct Service Industry</b>	<b>173664</b>	<b>154368</b>	<b>167232</b>	<b>160800</b>	<b>154368</b>	<b>173664</b>	<b>83616</b>	<b>83616</b>	<b>160800</b>	<b>167232</b>	<b>167232</b>	<b>77184</b>	<b>90048</b>	<b>160800</b>	<b>1974624</b>
<i>-Generating Public Entities-</i>															
7 Generating Public Entities	901097	1015460	1183946	1141931	1068529	1099852	457192	457192	811560	787790	823959	404259	470755	877616	1501139
<b>8 Total Generating Public Entities</b>	<b>901097</b>	<b>1015460</b>	<b>1183946</b>	<b>1141931</b>	<b>1068529</b>	<b>1099852</b>	<b>457192</b>	<b>457192</b>	<b>811560</b>	<b>787790</b>	<b>823959</b>	<b>404259</b>	<b>470755</b>	<b>877616</b>	<b>1501139</b>
<i>-Generating Public Entities (Slice)-</i>															
9 Generating Public Entities (Slice)	472805	514494	503575	530236	418384	425156	158542	165461	586448	471574	497542	268982	231805	425624	5670629
<b>10 Total Gen Public Entities (Slice)</b>	<b>472805</b>	<b>514494</b>	<b>503575</b>	<b>530236</b>	<b>418384</b>	<b>425156</b>	<b>158542</b>	<b>165461</b>	<b>586448</b>	<b>471574</b>	<b>497542</b>	<b>268982</b>	<b>231805</b>	<b>425624</b>	<b>5670629</b>
<i>-Non-Generating Public Entities-</i>															
11 Non-Generating Public Entities	1264314	1349130	1564320	1586248	1404921	1361901	634472	634472	1265574	1335999	1386993	654265	763309	1215411	16421329
<b>12 Total Non-Gen Public Entities</b>	<b>1264314</b>	<b>1349130</b>	<b>1564320</b>	<b>1586248</b>	<b>1404921</b>	<b>1361901</b>	<b>634472</b>	<b>634472</b>	<b>1265574</b>	<b>1335999</b>	<b>1386993</b>	<b>654265</b>	<b>763309</b>	<b>1215411</b>	<b>16421329</b>
<i>-Non-Generating Public Entities (Slice)-</i>															
13 Non-Gen Public Entities (Slice)	283896	308928	302372	318380	251219	255285	95196	99351	352133	283157	298749	161510	139187	255566	3404928
<b>14 Total Non-Gen Pub Entities (Slice)</b>	<b>283896</b>	<b>308928</b>	<b>302372</b>	<b>318380</b>	<b>251219</b>	<b>255285</b>	<b>95196</b>	<b>99351</b>	<b>352133</b>	<b>283157</b>	<b>298749</b>	<b>161510</b>	<b>139187</b>	<b>255566</b>	<b>3404928</b>
<i>-Investor-Owned Entities-</i>															
15 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>16 Total Investor-Owned Entities</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>
<i>-Other Entities-</i>															
17 Other PNW Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>18 Total Other Entities</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>
<i>-Power Sales Contracts-</i>															
19 Federal Entities	48044	53055	59316	62916	55243	55860	24500	24500	47851	46898	50049	25465	29709	46121	629527
20 U.S. Bureau of Reclamation	40533	5504	13062	28144	30357	21768	46525	46525	116130	118983	127337	49457	57700	87278	789304
21 Direct Service Industry	173664	154368	167232	160800	154368	173664	83616	83616	160800	167232	167232	77184	90048	160800	1974624
22 Generating Public Entities	1373902	1529954	1687521	1672168	1486913	1525008	615734	622653	1398009	1259365	1321502	673241	702559	1303240	7171768
23 Non-Generating Public Entities	1548209	1658058	1866691	1904629	1656139	1617186	729668	733823	1617707	1619156	1685743	815775	902496	1470977	9826258
24 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>26 Total Power Sales Contracts</b>	<b>3184353</b>	<b>3400939</b>	<b>3793822</b>	<b>3828657</b>	<b>3383020</b>	<b>3393486</b>	<b>1500043</b>	<b>1511116</b>	<b>3340497</b>	<b>3211633</b>	<b>3351862</b>	<b>1641123</b>	<b>1782513</b>	<b>3068416</b>	<b>40391481</b>



Table A-22: BPA Power Sale Contracts  
 PNW Loads and Resource Study  
 2010 - 2011 Fiscal Year  
 1937 Water Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Heavy (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<i>-Federal Entities-</i>															
1 Federal Entities	49440	54743	61252	64082	56259	56818	24910	24910	48648	47685	52880	27007	29084	46865	644583
<b>2 Total Federal Entities</b>	<b>49440</b>	<b>54743</b>	<b>61252</b>	<b>64082</b>	<b>56259</b>	<b>56818</b>	<b>24910</b>	<b>24910</b>	<b>48648</b>	<b>47685</b>	<b>52880</b>	<b>27007</b>	<b>29084</b>	<b>46865</b>	<b>644583</b>
<i>-U.S. Bureau of Reclamation-</i>															
3 U.S. Bureau of Reclamation	39223	5734	13062	28144	30357	21768	46525	46525	116130	118983	124075	53242	57337	87278	788381
<b>4 Total U.S. Bureau of Reclamation</b>	<b>39223</b>	<b>5734</b>	<b>13062</b>	<b>28144</b>	<b>30357</b>	<b>21768</b>	<b>46525</b>	<b>46525</b>	<b>116130</b>	<b>118983</b>	<b>124075</b>	<b>53242</b>	<b>57337</b>	<b>87278</b>	<b>788381</b>
<i>-Direct Service Industry-</i>															
5 Direct Service Industry	167232	160800	167232	160800	154368	173664	83616	83616	160800	167232	160800	83616	90048	160800	1974624
<b>6 Total Direct Service Industry</b>	<b>167232</b>	<b>160800</b>	<b>167232</b>	<b>160800</b>	<b>154368</b>	<b>173664</b>	<b>83616</b>	<b>83616</b>	<b>160800</b>	<b>167232</b>	<b>160800</b>	<b>83616</b>	<b>90048</b>	<b>160800</b>	<b>1974624</b>
<i>-Generating Public Entities-</i>															
7 Generating Public Entities	879234	1043206	1184495	1142722	1069869	1100289	457501	457501	812217	788480	810486	430929	464021	878431	11519382
<b>8 Total Generating Public Entities</b>	<b>879234</b>	<b>1043206</b>	<b>1184495</b>	<b>1142722</b>	<b>1069869</b>	<b>1100289</b>	<b>457501</b>	<b>457501</b>	<b>812217</b>	<b>788480</b>	<b>810486</b>	<b>430929</b>	<b>464021</b>	<b>878431</b>	<b>11519382</b>
<i>-Generating Public Entities (Slice)-</i>															
9 Generating Public Entities (Slice)	465888	514971	502963	528006	418066	425408	143527	133208	527545	406849	483482	269888	230368	419230	5469399
<b>10 Total Gen Public Entities (Slice)</b>	<b>465888</b>	<b>514971</b>	<b>502963</b>	<b>528006</b>	<b>418066</b>	<b>425408</b>	<b>143527</b>	<b>133208</b>	<b>527545</b>	<b>406849</b>	<b>483482</b>	<b>269888</b>	<b>230368</b>	<b>419230</b>	<b>5469399</b>
<i>-Non-Generating Public Entities-</i>															
11 Non-Generating Public Entities	1277026	1387689	1586002	1610583	1424569	1385542	645727	645727	1286750	1357751	1431966	701256	755199	1235463	16731249
<b>12 Total Non-Gen Public Entities</b>	<b>1277026</b>	<b>1387689</b>	<b>1586002</b>	<b>1610583</b>	<b>1424569</b>	<b>1385542</b>	<b>645727</b>	<b>645727</b>	<b>1286750</b>	<b>1357751</b>	<b>1431966</b>	<b>701256</b>	<b>755199</b>	<b>1235463</b>	<b>16731249</b>
<i>-Non-Generating Public Entities (Slice)-</i>															
13 Non-Gen Public Entities (Slice)	279742	309214	302004	317041	251027	255436	86181	79985	316765	244292	290306	162054	138324	251727	3284100
<b>14 Total Non-Gen Pub Entities (Slice)</b>	<b>279742</b>	<b>309214</b>	<b>302004</b>	<b>317041</b>	<b>251027</b>	<b>255436</b>	<b>86181</b>	<b>79985</b>	<b>316765</b>	<b>244292</b>	<b>290306</b>	<b>162054</b>	<b>138324</b>	<b>251727</b>	<b>3284100</b>
<i>-Investor-Owned Entities-</i>															
15 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>16 Total Investor-Owned Entities</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>
<i>-Other Entities-</i>															
17 Other PNW Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>18 Total Other Entities</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>
<i>-Power Sales Contracts-</i>															
19 Federal Entities	49440	54743	61252	64082	56259	56818	24910	24910	48648	47685	52880	27007	29084	46865	644583
20 U.S. Bureau of Reclamation	39223	5734	13062	28144	30357	21768	46525	46525	116130	118983	124075	53242	57337	87278	788381
21 Direct Service Industry	167232	160800	167232	160800	154368	173664	83616	83616	160800	167232	160800	83616	90048	160800	1974624
22 Generating Public Entities	1345122	1558177	1687458	1670728	1487935	1525697	601028	590709	1339763	1195329	1293968	700817	694389	1297662	16988781
23 Non-Generating Public Entities	1556768	1696904	1888006	1927624	1675596	1640978	731907	725711	1603514	1602043	1722273	863311	893523	1487182	20015349
24 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>26 Total Power Sales Contracts</b>	<b>3157786</b>	<b>3476357</b>	<b>3817010</b>	<b>3851378</b>	<b>3404515</b>	<b>3418925</b>	<b>1487986</b>	<b>1471471</b>	<b>3268856</b>	<b>3131272</b>	<b>3353996</b>	<b>1727992</b>	<b>1764381</b>	<b>3079794</b>	<b>40411719</b>

Table A-24: Federal NUG Resources By Project And Project Type  
 PNW Loads and Resource Study  
 2009 - 2010 Fiscal Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Heavy (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<i>-NUG: Hydro-</i>															
1 Dworshak/Clearwater Small Hydropower	1136	1010	1094	1052	1010	1136	547	547	1052	1094	1094	505	589	1052	12919
2 Elwha Hydro	1586	4027	4584	5057	3507	3703	3531	3531	3848	3526	2202	1731	1731	895	43458
3 Glines Canyon Hydro	2864	6028	6726	6314	5379	5638	5285	5285	12801	6452	4317	3367	3367	1533	75355
<b>4 Total NUG: Hydro</b>	<b>5586</b>	<b>11065</b>	<b>12405</b>	<b>12423</b>	<b>9896</b>	<b>10477</b>	<b>9363</b>	<b>9363</b>	<b>17701</b>	<b>11072</b>	<b>7614</b>	<b>5602</b>	<b>5686</b>	<b>3480</b>	<b>131732</b>
<i>-NUG: Renewables-</i>															
5 Ashland Solar Project	1.2	0.6	0.4	0.5	0.8	1.2	0.7	0.7	1.7	1.8	2	0.9	1	1.6	15
6 White Bluffs Solar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>7 Total NUG: Renewables</b>	<b>1.2</b>	<b>0.6</b>	<b>0.4</b>	<b>0.5</b>	<b>0.8</b>	<b>1.2</b>	<b>0.7</b>	<b>0.7</b>	<b>1.7</b>	<b>1.8</b>	<b>2</b>	<b>0.9</b>	<b>1</b>	<b>1.6</b>	<b>15</b>
<i>-Total Non-Utility Generating Resources-</i>															
8 Federal Entities	5587	11066	12405	12424	9897	10479	9364	9364	17702	11074	7616	5603	5687	3482	131747
9 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>12 Total Non-Utility Generation</b>	<b>5587</b>	<b>11066</b>	<b>12405</b>	<b>12424</b>	<b>9897</b>	<b>10479</b>	<b>9364</b>	<b>9364</b>	<b>17702</b>	<b>11074</b>	<b>7616</b>	<b>5603</b>	<b>5687</b>	<b>3482</b>	<b>131747</b>

Table A-24: Federal NUG Resources By Project And Project Type  
 PNW Loads and Resource Study  
 2010 - 2011 Fiscal Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Heavy (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<i>-NUG: Hydro-</i>															
1 Dworshak/Clearwater Small Hydropower	1094	1052	1094	1052	1010	1136	547	547	1052	1094	1052	547	589	1052	12919
2 Elwha Hydro	1586	4027	4584	5057	3507	3703	3531	3531	3848	3526	2202	1731	1731	895	43458
3 Glines Canyon Hydro	2864	6028	6726	6314	5379	5638	5285	5285	12801	6452	4317	3367	3367	1533	75355
<b>4 Total NUG: Hydro</b>	<b>5544</b>	<b>11107</b>	<b>12405</b>	<b>12423</b>	<b>9896</b>	<b>10477</b>	<b>9363</b>	<b>9363</b>	<b>17701</b>	<b>11072</b>	<b>7572</b>	<b>5644</b>	<b>5686</b>	<b>3480</b>	<b>131732</b>
<i>-NUG: Renewables-</i>															
5 Ashland Solar Project	1.2	0.6	0.4	0.5	0.8	1.2	0.7	0.7	1.7	1.8	1.9	0.9	1	1.6	15
6 White Bluffs Solar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>7 Total NUG: Renewables</b>	<b>1.2</b>	<b>0.6</b>	<b>0.4</b>	<b>0.5</b>	<b>0.8</b>	<b>1.2</b>	<b>0.7</b>	<b>0.7</b>	<b>1.7</b>	<b>1.8</b>	<b>1.9</b>	<b>0.9</b>	<b>1</b>	<b>1.6</b>	<b>15</b>
<i>-Total Non-Utility Generating Resources-</i>															
8 Federal Entities	5545	11108	12405	12424	9897	10479	9364	9364	17702	11074	7573	5645	5687	3482	131747
9 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>12 Total Non-Utility Generation</b>	<b>5545</b>	<b>11108</b>	<b>12405</b>	<b>12424</b>	<b>9897</b>	<b>10479</b>	<b>9364</b>	<b>9364</b>	<b>17702</b>	<b>11074</b>	<b>7573</b>	<b>5645</b>	<b>5687</b>	<b>3482</b>	<b>131747</b>

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**LLH MWhs ANALYSIS**

**2.6 FEDERAL LOADS AND RESOURCES STUDY-LLH MWhs ANALYSIS**  
**Monthly LLH MWhs Energy**  
**For FY 2010 and 2011**

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Table A-2: Federal Exports  
 PNW Loads and Resource Study  
 2009 - 2010 Fiscal Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Light (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<i>-Exports East of Continental Divide-</i>															
1 BPA to Other Entities	12413	13632	15027	15210	13128	13638	6062	6062	11700	11060	13608	5941	5743	10992	154216
<b>2 Total Exports to ECD</b>	<b>12413</b>	<b>13632</b>	<b>15027</b>	<b>15210</b>	<b>13128</b>	<b>13638</b>	<b>6062</b>	<b>6062</b>	<b>11700</b>	<b>11060</b>	<b>13608</b>	<b>5941</b>	<b>5743</b>	<b>10992</b>	<b>154216</b>
<i>-Exports to Pacific Southwest-</i>															
3 BPA to Other Entities	16164	20074	22430	17610	15200	20822	12001	12858	29355	32401	33976	12843	12733	21732	280198
4 BPA to PASA C/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 BPA to PASA S/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 BPA to RVSD CapS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 BPA to RVSD C/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 BPA to RVSD C/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 BPA to RVSD S/Pwr/X	0	0	0	0	0	0	0	0	7344	7056	0	0	0	0	14400
10 BPA NW-SW Intertie Losses	485	602	673	528	456	625	360	386	1101	1184	1019	385	382	652	8838
<b>11 Total Exports To PSW</b>	<b>16649</b>	<b>20676</b>	<b>23102</b>	<b>18138</b>	<b>15656</b>	<b>21446</b>	<b>12361</b>	<b>13243</b>	<b>37800</b>	<b>40641</b>	<b>34996</b>	<b>13229</b>	<b>13115</b>	<b>22384</b>	<b>303436</b>
<i>-Exports to Inland Southwest-</i>															
12 BPA to SPP PwrS	14040	15165	14760	15480	12960	13995	11400	11400	25800	22800	24600	12600	12000	24000	231000
<b>13 Total Exports To ISW</b>	<b>14040</b>	<b>15165</b>	<b>14760</b>	<b>15480</b>	<b>12960</b>	<b>13995</b>	<b>11400</b>	<b>11400</b>	<b>25800</b>	<b>22800</b>	<b>24600</b>	<b>12600</b>	<b>12000</b>	<b>24000</b>	<b>231000</b>
<i>-Exports to Canada-</i>															
14 BPA to BCHP CanEnt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>15 Total Exports To Canada</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>
<i>-Exports to Other Entities-</i>															
<b>16 Total Exports To Other Entities</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>
<i>-Total Exports-</i>															
17 Federal Entities	43102	49473	52890	48828	41744	49080	29823	30705	75300	74501	73204	31769	30858	57375	688652
18 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>21 Total Exports.</b>	<b>43102</b>	<b>49473</b>	<b>52890</b>	<b>48828</b>	<b>41744</b>	<b>49080</b>	<b>29823</b>	<b>30705</b>	<b>75300</b>	<b>74501</b>	<b>73204</b>	<b>31769</b>	<b>30858</b>	<b>57375</b>	<b>688652</b>

Table A-2: Federal Exports  
PNW Loads and Resource Study  
2010 - 2011 Fiscal Year  
[59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Light (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<i>-Exports East of Continental Divide-</i>															
1 BPA to Other Entities	12205	13377	14122	14268	12240	12993	5953	5953	11480	10840	13308	5810	6127	11256	149931
<b>2 Total Exports to ECD</b>	<b>12205</b>	<b>13377</b>	<b>14122</b>	<b>14268</b>	<b>12240</b>	<b>12993</b>	<b>5953</b>	<b>5953</b>	<b>11480</b>	<b>10840</b>	<b>13308</b>	<b>5810</b>	<b>6127</b>	<b>11256</b>	<b>149931</b>
<i>-Exports to Pacific Southwest-</i>															
3 BPA to Other Entities	16128	20115	22508	17610	15200	20822	12001	12858	29355	32401	34043	12884	12742	21732	280398
4 BPA to PASA C/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 BPA to PASA S/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 BPA to RVSD C/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 BPA to RVSD S/Pwr/X	0	0	0	0	0	0	0	0	7056	7056	0	0	0	0	14112
8 BPA NW-SW Intertie Losses	484	603	675	528	456	625	360	386	1092	1184	1021	387	382	652	8835
<b>9 Total Exports To PSW</b>	<b>16612</b>	<b>20718</b>	<b>23184</b>	<b>18138</b>	<b>15656</b>	<b>21446</b>	<b>12361</b>	<b>13243</b>	<b>37504</b>	<b>40641</b>	<b>35065</b>	<b>13270</b>	<b>13124</b>	<b>22384</b>	<b>303345</b>
<i>-Exports to Inland Southwest-</i>															
10 BPA to SPP PwrS	14760	14445	14760	15480	12960	13995	11400	11400	25800	22800	25800	11400	12000	24000	231000
<b>11 Total Exports To ISW</b>	<b>14760</b>	<b>14445</b>	<b>14760</b>	<b>15480</b>	<b>12960</b>	<b>13995</b>	<b>11400</b>	<b>11400</b>	<b>25800</b>	<b>22800</b>	<b>25800</b>	<b>11400</b>	<b>12000</b>	<b>24000</b>	<b>231000</b>
<i>-Exports to Canada-</i>															
12 BPA to BCHP CanEnt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>13 Total Exports To Canada</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>
<i>-Exports to Other Entities-</i>															
<b>14 Total Exports To Other Entities</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>
<i>-Total Exports-</i>															
15 Federal Entities	43577	48540	52065	47886	40856	48434	29713	30596	74784	74281	74173	30481	31251	57639	684276
16 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>19 Total Exports.</b>	<b>43577</b>	<b>48540</b>	<b>52065</b>	<b>47886</b>	<b>40856</b>	<b>48434</b>	<b>29713</b>	<b>30596</b>	<b>74784</b>	<b>74281</b>	<b>74173</b>	<b>30481</b>	<b>31251</b>	<b>57639</b>	<b>684276</b>

Table A-5: Federal Imports  
 PNW Loads and Resource Study  
 2009 - 2010 Fiscal Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Light (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<i>-Imports From East of Continental Divide-</i>															
1 PPL to BPA PwrS	30834	45348	64251	65317	56168	56656	25119	20797	7633	7046	8990	5085	4083	7709	405036
<b>2 Total Imports From ECD</b>	<b>30834</b>	<b>45348</b>	<b>64251</b>	<b>65317</b>	<b>56168</b>	<b>56656</b>	<b>25119</b>	<b>20797</b>	<b>7633</b>	<b>7046</b>	<b>8990</b>	<b>5085</b>	<b>4083</b>	<b>7709</b>	<b>405036</b>
<i>-Imports From Pacific Southwest-</i>															
3 PASA to BPA XchgNrg	2593	2506	2589	2589	2339	1295	0	0	0	0	0	0	0	2506	16415
4 PASA to BPA S/N/X	514	497	513	513	464	238	0	0	0	0	0	0	0	497	3236
5 PASA to BPA PkRepl	0	0	0	0	0	0	0	0	0	0	3318	1606	1713	3211	9848
6 RVSD to BPA XchgNrg	3094	4583	4469	4698	4125	4469	2163	0	0	0	0	0	0	0	27601
7 RVSD to BPA PkRepl	0	3360	3680	3360	3200	3680	1754	1766	4830	0	0	0	0	0	25630
8 RVSD to BPA PkRepl	5060	0	0	0	0	0	0	0	0	0	0	0	0	0	5060
9 RVSD to BPA XchgNrg	0	12292	11999	12585	10536	11414	5524	0	0	0	0	0	0	0	64350
10 RVSD to BPA S/Pwr/X	0	7186	7015	7357	6159	6673	3229	0	0	0	0	0	0	0	37619
11 RVSD to BPA PkRepl	7920	1890	2070	1890	1800	2070	987	993	0	0	7920	4057	3863	7920	43380
<b>12 Total Imports From PSW</b>	<b>19181</b>	<b>32313</b>	<b>32335</b>	<b>32992</b>	<b>28622</b>	<b>29839</b>	<b>13657</b>	<b>2759</b>	<b>4830</b>	<b>0</b>	<b>11238</b>	<b>5663</b>	<b>5576</b>	<b>14134</b>	<b>233139</b>
<i>-Imports From Inland Southwest-</i>															
13 SPP to BPA PwrS	14040	15165	14760	15480	12960	13995	11400	11400	25800	22800	24600	12600	12000	24000	231000
<b>14 Total Imports From ISW</b>	<b>14040</b>	<b>15165</b>	<b>14760</b>	<b>15480</b>	<b>12960</b>	<b>13995</b>	<b>11400</b>	<b>11400</b>	<b>25800</b>	<b>22800</b>	<b>24600</b>	<b>12600</b>	<b>12000</b>	<b>24000</b>	<b>231000</b>
<i>-Imports From Canada-</i>															
15 BCHP to BPA PwrS	312	321	312	328	288	311	152	152	328	304	312	168	160	304	3752
<b>16 Total Imports From Canada</b>	<b>312</b>	<b>321</b>	<b>312</b>	<b>328</b>	<b>288</b>	<b>311</b>	<b>152</b>	<b>152</b>	<b>328</b>	<b>304</b>	<b>312</b>	<b>168</b>	<b>160</b>	<b>304</b>	<b>3752</b>
<i>-Imports From Other Entities-</i>															
<b>17 Total Imports From Other Entities</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>
<i>-Total Imports-</i>															
18 Federal System	64367	93147	111658	114117	98038	100801	50328	35108	38591	30150	45140	23516	21819	46147	872927
19 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>22 Total Imports.</b>	<b>64367</b>	<b>93147</b>	<b>111658</b>	<b>114117</b>	<b>98038</b>	<b>100801</b>	<b>50328</b>	<b>35108</b>	<b>38591</b>	<b>30150</b>	<b>45140</b>	<b>23516</b>	<b>21819</b>	<b>46147</b>	<b>872927</b>



Table A-5: Federal Imports  
PNW Loads and Resource Study  
2010 - 2011 Fiscal Year  
[59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Light (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<i>-Imports From East of Continental Divide-</i>															
1 PPL to BPA PwrS	30834	45348	64251	65317	56168	56656	25119	20797	7633	7046	8990	5085	4083	7709	405036
<b>2 Total Imports From ECD</b>	<b>30834</b>	<b>45348</b>	<b>64251</b>	<b>65317</b>	<b>56168</b>	<b>56656</b>	<b>25119</b>	<b>20797</b>	<b>7633</b>	<b>7046</b>	<b>8990</b>	<b>5085</b>	<b>4083</b>	<b>7709</b>	<b>405036</b>
<i>-Imports From Pacific Southwest-</i>															
3 PASA to BPA XchgNrg	2593	2506	2589	2589	2339	1295	0	0	0	0	0	0	0	2506	16415
4 PASA to BPA S/N/X	514	497	513	513	464	238	0	0	0	0	0	0	0	497	3236
5 PASA to BPA PkRepl	0	0	0	0	0	0	0	0	0	0	3318	1606	1713	3211	9848
6 RVSD to BPA XchgNrg	0	11541	11845	12452	10934	11845	5733	0	0	0	0	0	0	0	64350
7 RVSD to BPA S/Pwr/X	0	7186	7015	7357	6159	6673	3229	0	0	0	0	0	0	0	37619
8 RVSD to BPA PkRepl	7560	1980	2070	1890	1800	2070	942	948	0	0	7560	4034	4246	7560	42660
<b>9 Total Imports From PSW</b>	<b>10667</b>	<b>23709</b>	<b>24032</b>	<b>24801</b>	<b>21695</b>	<b>22121</b>	<b>9904</b>	<b>948</b>	<b>0</b>	<b>0</b>	<b>10878</b>	<b>5640</b>	<b>5959</b>	<b>13774</b>	<b>174128</b>
<i>-Imports From Inland Southwest-</i>															
10 SPP to BPA PwrS	14760	14445	14760	15480	12960	13995	11400	11400	25800	22800	25800	11400	12000	24000	231000
<b>11 Total Imports From ISW</b>	<b>14760</b>	<b>14445</b>	<b>14760</b>	<b>15480</b>	<b>12960</b>	<b>13995</b>	<b>11400</b>	<b>11400</b>	<b>25800</b>	<b>22800</b>	<b>25800</b>	<b>11400</b>	<b>12000</b>	<b>24000</b>	<b>231000</b>
<i>-Imports From Canada-</i>															
12 BHP to BPA PwrS	328	305	312	328	288	311	152	152	328	304	328	152	160	304	3752
<b>13 Total Imports From Canada</b>	<b>328</b>	<b>305</b>	<b>312</b>	<b>328</b>	<b>288</b>	<b>311</b>	<b>152</b>	<b>152</b>	<b>328</b>	<b>304</b>	<b>328</b>	<b>152</b>	<b>160</b>	<b>304</b>	<b>3752</b>
<i>-Imports From Other Entities-</i>															
<b>14 Total Imports From Other Entities</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>
<i>-Total Imports-</i>															
15 Federal System	56589	83807	103355	105926	91111	93083	46575	33297	33761	30150	45996	22277	22202	45787	813916
16 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>19 Total Imports.</b>	<b>56589</b>	<b>83807</b>	<b>103355</b>	<b>105926</b>	<b>91111</b>	<b>93083</b>	<b>46575</b>	<b>33297</b>	<b>33761</b>	<b>30150</b>	<b>45996</b>	<b>22277</b>	<b>22202</b>	<b>45787</b>	<b>813916</b>

Table A-8: Federal Renewable Resources  
 PNW Loads and Resource Study  
 2009 - 2010 Fiscal Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Light (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<i>-Federal System-</i>															
1 Condon Wind Project	3199	4601	4377	4663	3502	4401	1382	1268	3174	2841	2146	1057	1257	2372	40239
2 Foote Creek 1	1187	1840	1595	1735	1517	1359	612	569	1064	739	360	291	300	846	14016
3 Foote Creek 2	139	216	187	204	178	160	72	67	125	87	42	34	35	99	1647
4 Foote Creek 4	1302	2018	1750	1903	1664	1491	672	624	1167	811	394	319	329	928	15373
5 Klondike I	1884	1529	1698	1972	1670	2213	1178	1515	3823	4027	4012	1772	1599	2608	31501
6 Klondike III	3347	2195	3510	4195	3859	5619	2835	2916	8573	8446	8843	2507	3533	3997	64375
7 Stateline Wind Project	6858	7557	6832	7043	5317	10456	4587	4272	9973	10206	8696	3976	4087	6381	96241
<b>8 Total Federal System</b>	<b>17918</b>	<b>19957</b>	<b>19949</b>	<b>21716</b>	<b>17707</b>	<b>25699</b>	<b>11338</b>	<b>11231</b>	<b>27900</b>	<b>27157</b>	<b>24493</b>	<b>9956</b>	<b>11140</b>	<b>17233</b>	<b>263393</b>
<i>-Renewable Resources-</i>															
9 Federal System	17918	19957	19949	21716	17707	25699	11338	11231	27900	27157	24493	9956	11140	17233	263393
10 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>13 Total Renewable Resources</b>	<b>17918</b>	<b>19957</b>	<b>19949</b>	<b>21716</b>	<b>17707</b>	<b>25699</b>	<b>11338</b>	<b>11231</b>	<b>27900</b>	<b>27157</b>	<b>24493</b>	<b>9956</b>	<b>11140</b>	<b>17233</b>	<b>263393</b>

Table A-8: Federal Renewable Resources  
 PNW Loads and Resource Study  
 2010 - 2011 Fiscal Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Light (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<i>-Federal System-</i>															
1 Condon Wind Project	3363	4382	4377	4663	3502	4401	1382	1268	3174	2841	2250	956	1257	2372	40189
2 Foote Creek 1	1248	1753	1595	1735	1517	1359	612	569	1064	739	377	263	300	846	13980
3 Foote Creek 2	147	206	187	204	178	160	72	67	125	87	44	31	35	99	1643
4 Foote Creek 4	1369	1923	1750	1903	1664	1491	672	624	1167	811	414	289	329	928	15332
5 Klondike I	1981	1457	1698	1972	1670	2213	1178	1515	3823	4027	4208	1603	1599	2608	31552
6 Klondike III	3519	2091	3510	4195	3859	5619	2835	2916	8573	8446	9274	2268	3533	3997	64635
7 Stateline Wind Project	7210	7198	6832	7043	5317	10456	4587	4272	9973	10206	9120	3597	4087	6381	96280
<b>8 Total Federal System</b>	<b>18837</b>	<b>19009</b>	<b>19949</b>	<b>21716</b>	<b>17707</b>	<b>25699</b>	<b>11338</b>	<b>11231</b>	<b>27900</b>	<b>27157</b>	<b>25688</b>	<b>9008</b>	<b>11140</b>	<b>17233</b>	<b>263611</b>
<i>-Renewable Resources-</i>															
9 Federal System	18837	19009	19949	21716	17707	25699	11338	11231	27900	27157	25688	9008	11140	17233	263611
10 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>13 Total Renewable Resources</b>	<b>18837</b>	<b>19009</b>	<b>19949</b>	<b>21716</b>	<b>17707</b>	<b>25699</b>	<b>11338</b>	<b>11231</b>	<b>27900</b>	<b>27157</b>	<b>25688</b>	<b>9008</b>	<b>11140</b>	<b>17233</b>	<b>263611</b>

Table A-10: Federal Large Thermal  
 PNW Loads and Resource Study  
 2009 - 2010 Fiscal Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Light (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<i>-Columbia Generating Station: Uranium-</i>															
1 BPA - Power Business	321360	347110	337840	354320	296640	320330	156560	156560	354320	313120	337840	173040	164800	329600	3963440
<b>2 Columbia Gen Station: Region Total</b>	<b>321360</b>	<b>347110</b>	<b>337840</b>	<b>354320</b>	<b>296640</b>	<b>320330</b>	<b>156560</b>	<b>156560</b>	<b>354320</b>	<b>313120</b>	<b>337840</b>	<b>173040</b>	<b>164800</b>	<b>329600</b>	<b>3963440</b>
<i>-Total Large Thermal-</i>															
3 Federal System	321360	347110	337840	354320	296640	320330	156560	156560	354320	313120	337840	173040	164800	329600	3963440
4 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 Non-NW Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>8 Total Large Thermal</b>	<b>321360</b>	<b>347110</b>	<b>337840</b>	<b>354320</b>	<b>296640</b>	<b>320330</b>	<b>156560</b>	<b>156560</b>	<b>354320</b>	<b>313120</b>	<b>337840</b>	<b>173040</b>	<b>164800</b>	<b>329600</b>	<b>3963440</b>

Table A-10: Federal Large Thermal  
 PNW Loads and Resource Study  
 2010 - 2011 Fiscal Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Light (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<i>-Columbia Generating Station: Uranium-</i>															
1 BPA - Power Business	337840	330630	337840	354320	296640	320330	83600	0	0	0	308568	156560	164800	329600	3020728
<b>2 Columbia Gen Station: Region Total</b>	<b>337840</b>	<b>330630</b>	<b>337840</b>	<b>354320</b>	<b>296640</b>	<b>320330</b>	<b>83600</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>308568</b>	<b>156560</b>	<b>164800</b>	<b>329600</b>	<b>3020728</b>
<i>-Total Large Thermal-</i>															
3 Federal System	337840	330630	337840	354320	296640	320330	83600	0	0	0	308568	156560	164800	329600	3020728
4 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 Non-NW Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>8 Total Large Thermal</b>	<b>337840</b>	<b>330630</b>	<b>337840</b>	<b>354320</b>	<b>296640</b>	<b>320330</b>	<b>83600</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>308568</b>	<b>156560</b>	<b>164800</b>	<b>329600</b>	<b>3020728</b>

Table A-15: Canadian Entitlement Return For Canada  
 PNW Loads and Resource Study  
 2009 - 2010 Fiscal Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Light (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<i>-BPA Canada-</i>															
1 BPA: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>-Priest Rapids CER for Canada-</i>															
2 AVWP to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 COPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 EWEB to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 FGRV to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 GCPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 KITT to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 MCMN to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 MTFR to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 PGE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 PPL to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12 PSE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 SCL to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 TPU to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 UnknMkt to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 Priest Rapids: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>-Wanapum CER for Canada-</i>															
17 AVWP to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 COPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 EWEB to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20 FGRV to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 GCPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 KITT to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 MCMN to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 MTFR to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 PGE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26 PPL to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27 PSE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 SCL to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29 TPU to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30 UnknMkt to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31 Wanapum: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>-Rock Island P.H. #1 CER for Canada-</i>															
32 APGI to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33 CHPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34 PSE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35 Rock Island P.H. #1: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>-Rock Island P.H. #2 CER for Canada-</i>															
36 APGI to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37 CHPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38 PSE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39 Rock Island P.H. #2: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>-Rocky Reach CER for Canada-</i>															
40 APGI to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41 AVWP to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
42 CHPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
43 DOPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
44 PGE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45 PPL to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46 PSE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
47 Rocky Reach: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>-Wells CER for Canada-</i>															
48 AVWP to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A-15: Canadian Entitlement Return For Canada  
 PNW Loads and Resource Study  
 2009 - 2010 Fiscal Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

Continued

7/21/2009

Light (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
49 COLV to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50 DOPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51 OKPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
52 PGE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
53 PPL to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
54 PSE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>55 Wells: Regional Totals</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>
<i>-Total CER For Canada-</i>															
56 Federal System	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
57 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
58 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
59 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
60 Non-NW Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>61 Total CER For Canada</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 A-15: Canadian Entitlement Return For Canada  
 PNW Loads and Resource Study  
 2010 - 2011 Fiscal Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Light (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<i>-BPA Canada-</i>															
1 BPA: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>-Priest Rapids CER for Canada-</i>															
2 AVWP to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 COPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 EWEB to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 FGRV to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 GCPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 KITT to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 MCMN to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 MTFR to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 PGE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 PPL to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12 PSE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 SCL to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 TPU to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 UnknMkt to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 Priest Rapids: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>-Wanapum CER for Canada-</i>															
17 AVWP to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 COPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 EWEB to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20 FGRV to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 GCPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 KITT to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 MCMN to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 MTFR to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 PGE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26 PPL to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27 PSE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 SCL to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29 TPU to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30 UnknMkt to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31 Wanapum: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>-Rock Island P.H. #1 CER for Canada-</i>															
32 APGI to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33 CHPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34 PSE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35 Rock Island P.H. #1: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>-Rock Island P.H. #2 CER for Canada-</i>															
36 APGI to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37 CHPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38 PSE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39 Rock Island P.H. #2: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>-Rocky Reach CER for Canada-</i>															
40 APGI to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41 AVWP to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
42 CHPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
43 DOPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
44 PGE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45 PPL to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46 PSE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
47 Rocky Reach: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>-Wells CER for Canada-</i>															
48 AVWP to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Table A-15: Canadian Entitlement Return For Canada  
 PNW Loads and Resource Study  
 2010 - 2011 Fiscal Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

Continued

7/21/2009

Light (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
49 COLV to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50 DOPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51 OKPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
52 PGE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
53 PPL to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
54 PSE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>55 Wells: Regional Totals</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>
<i>-Total CER For Canada-</i>															
56 Federal System	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
57 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
58 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
59 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
60 Non-NW Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>61 Total CER For Canada</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 A-16: Federal Intra-Regional Transfers  
 PNW Loads and Resource Study  
 2009 - 2010 Fiscal Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Light (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<i>-Intra-Regional Transfers-</i>															
1 BPA To AVWP WP3Set	0	40093	39794	41106	36451	19364	9328	9364	0	0	0	0	0	0	195500
2 BPA To CCPD SFIBlk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 BPA To Other Entities	0	0	0	0	0	0	0	0	79120	0	0	31584	30080	0	140784
4 BPA To PPL CapS	37708	57055	39677	49775	45234	39369	18572	18643	27231	31283	34621	16819	17704	43279	476971
5 BPA To PPL S/Pwr/X	0	0	0	0	0	0	0	0	0	10556	11022	0	0	0	21578
6 BPA To PPL S/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 BPA To PPL PwrS	30834	45348	64251	65317	56168	56656	25119	20797	7633	7046	8990	5085	4083	7709	405036
8 BPA To PSE PwrS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 BPA To PSE WP3Set	0	40093	39794	41106	36451	19364	9328	9364	0	0	0	0	0	0	195500
10 Other Entities To BPA	11221	15493	13173	13312	11919	12772	6292	6535	18775	19447	19467	6557	8061	10211	173235
11 PPL To BPA S/Pwr/X	7162	7689	0	0	0	0	0	0	0	0	0	0	0	7323	22174
12 PPL To BPA S/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 PPL To BPA PkRepl	127810	137361	118465	143510	111830	106481	56602	56590	113752	113237	92019	51355	54705	124050	1407768
<b>14 Total Contracts</b>	<b>214736</b>	<b>343132</b>	<b>315154</b>	<b>354126</b>	<b>298053</b>	<b>254007</b>	<b>125242</b>	<b>121294</b>	<b>246510</b>	<b>181569</b>	<b>166119</b>	<b>111399</b>	<b>114633</b>	<b>192572</b>	<b>3038545</b>
<i>-Total Contracts Out-</i>															
15 Federal System	68542	182589	183516	197304	174304	134753	62347	58168	113984	48885	54633	53488	51867	50988	1435369
16 Public Entities	2929	3412	3648	3469	2849	2737	1139	1139	3664	3928	3733	2057	1959	3015	39677
17 Investor-Owned Entities	143264	157131	127990	153352	120900	116517	61755	61986	128863	128756	107753	55854	60807	138570	1563499
18 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>19 Total Contracts Out</b>	<b>214736</b>	<b>343132</b>	<b>315154</b>	<b>354126</b>	<b>298053</b>	<b>254007</b>	<b>125242</b>	<b>121294</b>	<b>246510</b>	<b>181569</b>	<b>166119</b>	<b>111399</b>	<b>114633</b>	<b>192572</b>	<b>3038545</b>
<i>-Total Contracts In-</i>															
20 Federal System	146194	160543	131638	156822	123749	119253	62894	63125	132527	132684	111486	57911	62766	141584	1603177
21 Public Entities	0	0	0	0	0	0	0	0	79120	0	0	31584	30080	0	140784
22 Investor-Owned Entities	68542	182589	183516	197304	174304	134753	62347	58168	34864	48885	54633	21904	21787	50988	1294585
23 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>24 Total Contracts In</b>	<b>214736</b>	<b>343132</b>	<b>315154</b>	<b>354126</b>	<b>298053</b>	<b>254007</b>	<b>125242</b>	<b>121294</b>	<b>246510</b>	<b>181569</b>	<b>166119</b>	<b>111399</b>	<b>114633</b>	<b>192572</b>	<b>3038545</b>

Table A-16: Federal Intra-Regional Transfers  
 PNW Loads and Resource Study  
 2010 - 2011 Fiscal Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Light (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<i>-Intra-Regional Transfers-</i>															
1 BPA To AVWP WP3Set	0	38781	39794	41106	36451	19364	9328	9364	0	0	0	0	0	0	194188
2 BPA To CCPD SFIBlk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 BPA To Other Entities	0	0	0	0	0	0	0	0	79120	0	0	2888	3040	0	85048
4 BPA To PPL CapS	37708	57055	39677	49775	45234	39369	18572	18643	27231	31283	34621	16819	17704	0	433692
5 BPA To PPL S/Pwr/X	0	0	0	0	0	0	0	0	0	10556	11559	0	0	0	22115
6 BPA To PPL S/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 BPA To PPL PwrS	30834	45348	64251	65317	56168	56656	25119	20797	7633	7046	8990	5085	4083	7709	405036
8 BPA To PSE WP3Set	0	38781	39794	41106	36451	19364	9328	9364	0	0	0	0	0	0	194188
9 Other Entities To BPA	8708	11769	10000	10071	9221	12117	6020	6263	17670	18147	19299	5542	7582	9476	151885
10 PPL To BPA S/Pwr/X	7529	7323	0	0	0	0	0	0	0	0	0	0	0	7323	22175
11 PPL To BPA S/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12 PPL To BPA PkRepl	127810	137361	118465	143510	111830	106481	56602	56590	113752	113237	92019	51355	54705	0	1283717
<b>13 Total Contracts</b>	<b>212589</b>	<b>336419</b>	<b>311981</b>	<b>350885</b>	<b>295354</b>	<b>253352</b>	<b>124969</b>	<b>121021</b>	<b>245405</b>	<b>180269</b>	<b>166489</b>	<b>81689</b>	<b>87115</b>	<b>24508</b>	<b>2792044</b>
<i>-Total Contracts Out-</i>															
14 Federal System	68542	179965	183516	197304	174304	134753	62347	58168	113984	48885	55170	24792	24827	7709	1334267
15 Public Entities	2341	2470	2770	2637	2167	2081	867	867	2558	2629	2896	1407	1481	2280	29450
16 Investor-Owned Entities	141706	153983	125694	150944	118884	116517	61755	61986	128863	128756	108422	55490	60807	14520	1428327
17 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>18 Total Contracts Out</b>	<b>212589</b>	<b>336419</b>	<b>311981</b>	<b>350885</b>	<b>295354</b>	<b>253352</b>	<b>124969</b>	<b>121021</b>	<b>245405</b>	<b>180269</b>	<b>166489</b>	<b>81689</b>	<b>87115</b>	<b>24508</b>	<b>2792044</b>
<i>-Total Contracts In-</i>															
19 Federal System	144047	156454	128465	153581	121051	118598	62622	62853	131421	131384	111318	56897	62288	16799	1457777
20 Public Entities	0	0	0	0	0	0	0	0	79120	0	0	2888	3040	0	85048
21 Investor-Owned Entities	68542	179965	183516	197304	174304	134753	62347	58168	34864	48885	55170	21904	21787	7709	1249219
22 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>23 Total Contracts In</b>	<b>212589</b>	<b>336419</b>	<b>311981</b>	<b>350885</b>	<b>295354</b>	<b>253352</b>	<b>124969</b>	<b>121021</b>	<b>245405</b>	<b>180269</b>	<b>166489</b>	<b>81689</b>	<b>87115</b>	<b>24508</b>	<b>2792044</b>

Table A-22: BPA Power Sale Contracts  
 PNW Loads and Resource Study  
 2009 - 2010 Fiscal Year  
 1937 Water Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Light (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<i>-Federal Entities-</i>															
1 Federal Entities	31101	37871	43932	44814	37002	36529	16386	16386	32385	28584	37180	17009	16199	32120	427498
<b>2 Total Federal Entities</b>	<b>31101</b>	<b>37871</b>	<b>43932</b>	<b>44814</b>	<b>37002</b>	<b>36529</b>	<b>16386</b>	<b>16386</b>	<b>32385</b>	<b>28584</b>	<b>37180</b>	<b>17009</b>	<b>16199</b>	<b>32120</b>	<b>427498</b>
<i>-U.S. Bureau of Reclamation-</i>															
3 U.S. Bureau of Reclamation	29625	4836	10296	24203	22766	15654	34161	34161	98976	86821	103426	42614	40585	70042	618166
<b>4 Total U.S. Bureau of Reclamation</b>	<b>29625</b>	<b>4836</b>	<b>10296</b>	<b>24203</b>	<b>22766</b>	<b>15654</b>	<b>34161</b>	<b>34161</b>	<b>98976</b>	<b>86821</b>	<b>103426</b>	<b>42614</b>	<b>40585</b>	<b>70042</b>	<b>618166</b>
<i>-Direct Service Industry-</i>															
5 Direct Service Industry	125424	135474	131856	138288	115776	125022	61104	61104	138288	122208	131856	67536	64320	128640	1546896
<b>6 Total Direct Service Industry</b>	<b>125424</b>	<b>135474</b>	<b>131856</b>	<b>138288</b>	<b>115776</b>	<b>125022</b>	<b>61104</b>	<b>61104</b>	<b>138288</b>	<b>122208</b>	<b>131856</b>	<b>67536</b>	<b>64320</b>	<b>128640</b>	<b>1546896</b>
<i>-Generating Public Entities-</i>															
7 Generating Public Entities	597703	790993	866558	881361	742184	743491	311526	311526	628417	530726	586342	302890	287958	629287	8210963
<b>8 Total Generating Public Entities</b>	<b>597703</b>	<b>790993</b>	<b>866558</b>	<b>881361</b>	<b>742184</b>	<b>743491</b>	<b>311526</b>	<b>311526</b>	<b>628417</b>	<b>530726</b>	<b>586342</b>	<b>302890</b>	<b>287958</b>	<b>629287</b>	<b>8210963</b>
<i>-Generating Public Entities (Slice)-</i>															
9 Generating Public Entities (Slice)	241018	303295	308220	286350	239279	261702	100044	113945	334977	289550	273009	134199	133917	249827	3269333
<b>10 Total Gen Public Entities (Slice)</b>	<b>241018</b>	<b>303295</b>	<b>308220</b>	<b>286350</b>	<b>239279</b>	<b>261702</b>	<b>100044</b>	<b>113945</b>	<b>334977</b>	<b>289550</b>	<b>273009</b>	<b>134199</b>	<b>133917</b>	<b>249827</b>	<b>3269333</b>
<i>-Non-Generating Public Entities-</i>															
11 Non-Generating Public Entities	800821	962999	1103388	1127323	931010	875440	417294	417294	897435	848007	1015491	463905	441814	835806	11138028
<b>12 Total Non-Gen Public Entities</b>	<b>800821</b>	<b>962999</b>	<b>1103388</b>	<b>1127323</b>	<b>931010</b>	<b>875440</b>	<b>417294</b>	<b>417294</b>	<b>897435</b>	<b>848007</b>	<b>1015491</b>	<b>463905</b>	<b>441814</b>	<b>835806</b>	<b>11138028</b>
<i>-Non-Generating Public Entities (Slice)-</i>															
13 Non-Generating Public Entities (Slice)	144728	182124	185082	171949	143684	157148	60075	68422	201149	173871	163938	80585	80415	150017	1963186
<b>14 Total Non-Gen Pub Entities (Slice)</b>	<b>144728</b>	<b>182124</b>	<b>185082</b>	<b>171949</b>	<b>143684</b>	<b>157148</b>	<b>60075</b>	<b>68422</b>	<b>201149</b>	<b>173871</b>	<b>163938</b>	<b>80585</b>	<b>80415</b>	<b>150017</b>	<b>1963186</b>
<i>-Investor-Owned Entities-</i>															
15 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>16 Total Investor-Owned Entities</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>
<i>-Other Entities-</i>															
17 Other PNW Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>18 Total Other Entities</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>
<i>-Power Sales Contracts-</i>															
19 Federal Entities	31101	37871	43932	44814	37002	36529	16386	16386	32385	28584	37180	17009	16199	32120	427498
20 U.S. Bureau of Reclamation	29625	4836	10296	24203	22766	15654	34161	34161	98976	86821	103426	42614	40585	70042	618166
21 Direct Service Industry	125424	135474	131856	138288	115776	125022	61104	61104	138288	122208	131856	67536	64320	128640	1546896
22 Generating Public Entities	838721	1094289	1174778	1167710	981463	1005192	411571	425471	963395	820277	859351	437089	421875	879114	11480296
23 Non-Generating Public Entities	945549	1145123	1288470	1299272	1074694	1032588	477370	485716	1098584	1021877	1179429	544490	522230	985824	13101214
24 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>26 Total Power Sales Contracts</b>	<b>1970420</b>	<b>2417592</b>	<b>2649332</b>	<b>2674287</b>	<b>2231700</b>	<b>2214987</b>	<b>1000591</b>	<b>1022838</b>	<b>2331627</b>	<b>2079767</b>	<b>2311242</b>	<b>1108738</b>	<b>1065209</b>	<b>2095740</b>	<b>27174070</b>

Table A-22: BPA Power Sale Contracts  
 PNW Loads and Resource Study  
 2010 - 2011 Fiscal Year  
 1937 Water Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Light (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<i>-Federal Entities-</i>															
1 Federal Entities	32055	39183	45511	45667	37702	37168	16667	16667	32925	29056	35950	16445	17310	32639	434946
<b>2 Total Federal Entities</b>	<b>32055</b>	<b>39183</b>	<b>45511</b>	<b>45667</b>	<b>37702</b>	<b>37168</b>	<b>16667</b>	<b>16667</b>	<b>32925</b>	<b>29056</b>	<b>35950</b>	<b>16445</b>	<b>17310</b>	<b>32639</b>	<b>434946</b>
<i>-U.S. Bureau of Reclamation-</i>															
3 U.S. Bureau of Reclamation	30935	4606	10296	24203	22766	15654	34161	34161	98976	86821	106540	38867	40912	70042	618941
<b>4 Total U.S. Bureau of Reclamation</b>	<b>30935</b>	<b>4606</b>	<b>10296</b>	<b>24203</b>	<b>22766</b>	<b>15654</b>	<b>34161</b>	<b>34161</b>	<b>98976</b>	<b>86821</b>	<b>106540</b>	<b>38867</b>	<b>40912</b>	<b>70042</b>	<b>618941</b>
<i>-Direct Service Industry-</i>															
5 Direct Service Industry	131856	129042	131856	138288	115776	125022	61104	61104	138288	122208	138288	61104	64320	128640	1546896
<b>6 Total Direct Service Industry</b>	<b>131856</b>	<b>129042</b>	<b>131856</b>	<b>138288</b>	<b>115776</b>	<b>125022</b>	<b>61104</b>	<b>61104</b>	<b>138288</b>	<b>122208</b>	<b>138288</b>	<b>61104</b>	<b>64320</b>	<b>128640</b>	<b>1546896</b>
<i>-Generating Public Entities-</i>															
7 Generating Public Entities	619209	764195	865893	880426	742033	742766	311285	311285	627367	530076	601717	276557	291078	628507	8192395
<b>8 Total Generating Public Entities</b>	<b>619209</b>	<b>764195</b>	<b>865893</b>	<b>880426</b>	<b>742033</b>	<b>742766</b>	<b>311285</b>	<b>311285</b>	<b>627367</b>	<b>530076</b>	<b>601717</b>	<b>276557</b>	<b>291078</b>	<b>628507</b>	<b>8192395</b>
<i>-Generating Public Entities (Slice)-</i>															
9 Generating Public Entities (Slice)	253231	308141	314239	294049	244392	266632	93428	97419	293332	256869	278325	134146	136188	257652	3228041
<b>10 Total Gen Public Entities (Slice)</b>	<b>253231</b>	<b>308141</b>	<b>314239</b>	<b>294049</b>	<b>244392</b>	<b>266632</b>	<b>93428</b>	<b>97419</b>	<b>293332</b>	<b>256869</b>	<b>278325</b>	<b>134146</b>	<b>136188</b>	<b>257652</b>	<b>3228041</b>
<i>-Non-Generating Public Entities-</i>															
11 Non-Generating Public Entities	831126	966327	1119290	1144273	943753	890848	424907	424907	912354	861603	1018179	439832	462981	849250	11289632
<b>12 Total Non-Gen Public Entities</b>	<b>831126</b>	<b>966327</b>	<b>1119290</b>	<b>1144273</b>	<b>943753</b>	<b>890848</b>	<b>424907</b>	<b>424907</b>	<b>912354</b>	<b>861603</b>	<b>1018179</b>	<b>439832</b>	<b>462981</b>	<b>849250</b>	<b>11289632</b>
<i>-Non-Generating Public Entities (Slice)-</i>															
13 Non-Generating Public Entities (Slice)	152061	185034	188696	176572	146754	160109	56102	58499	176141	154246	167130	80553	81779	154716	1938391
<b>14 Total Non-Gen Pub Entities (Slice)</b>	<b>152061</b>	<b>185034</b>	<b>188696</b>	<b>176572</b>	<b>146754</b>	<b>160109</b>	<b>56102</b>	<b>58499</b>	<b>176141</b>	<b>154246</b>	<b>167130</b>	<b>80553</b>	<b>81779</b>	<b>154716</b>	<b>1938391</b>
<i>-Investor-Owned Entities-</i>															
15 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>16 Total Investor-Owned Entities</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>
<i>-Other Entities-</i>															
17 Other PNW Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>18 Total Other Entities</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>
<i>-Power Sales Contracts-</i>															
19 Federal Entities	32055	39183	45511	45667	37702	37168	16667	16667	32925	29056	35950	16445	17310	32639	434946
20 U.S. Bureau of Reclamation	30935	4606	10296	24203	22766	15654	34161	34161	98976	86821	106540	38867	40912	70042	618941
21 Direct Service Industry	131856	129042	131856	138288	115776	125022	61104	61104	138288	122208	138288	61104	64320	128640	1546896
22 Generating Public Entities	872440	1072336	1180131	1174474	986425	1009398	404713	408704	920699	786945	880042	410703	427266	886160	11420436
23 Non-Generating Public Entities	983188	1151361	1307986	1320845	1090507	1050957	481009	483406	1088495	1015849	1185309	520385	544761	1003966	13228023
24 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>26 Total Power Sales Contracts</b>	<b>2050474</b>	<b>2396529</b>	<b>2675780</b>	<b>2703478</b>	<b>2253175</b>	<b>2238200</b>	<b>997654</b>	<b>1004042</b>	<b>2279382</b>	<b>2040878</b>	<b>2346129</b>	<b>1047504</b>	<b>1094569</b>	<b>2121447</b>	<b>27249242</b>

Table A-24: Federal NUG Resources By Project And Project Type  
 PNW Loads and Resource Study  
 2009 - 2010 Fiscal Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Light (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<i>-NUG: Hydro-</i>															
1 Dworshak/Clearwater Small Hydropower	821	886	863	905	757	818	400	400	905	800	863	442	421	842	10120
2 Elwha Hydro	1125	2826	3697	3709	2593	2808	2508	2508	2815	2566	1790	1222	1222	744	32131
3 Glines Canyon Hydro	2109	4246	5288	4767	3982	4415	3766	3766	9288	4755	3529	2404	2404	1411	56132
<b>4 Total NUG: Hydro</b>	<b>4055</b>	<b>7958</b>	<b>9848</b>	<b>9380</b>	<b>7332</b>	<b>8041</b>	<b>6674</b>	<b>6674</b>	<b>13007</b>	<b>8120</b>	<b>6182</b>	<b>4068</b>	<b>4047</b>	<b>2997</b>	<b>98384</b>
<i>-NUG: Renewables-</i>															
5 Ashland Solar Project	0.9	0.5	0.3	0.5	0.6	0.9	0.5	0.5	1.4	1.3	1.6	0.8	0.7	1.3	12
6 White Bluffs Solar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>7 Total NUG: Renewables</b>	<b>0.9</b>	<b>0.5</b>	<b>0.3</b>	<b>0.5</b>	<b>0.6</b>	<b>0.9</b>	<b>0.5</b>	<b>0.5</b>	<b>1.4</b>	<b>1.3</b>	<b>1.6</b>	<b>0.8</b>	<b>0.7</b>	<b>1.3</b>	<b>12</b>
<i>-Total Non-Utility Generating Resources-</i>															
8 Federal Entities	4056	7959	9848	9381	7333	8042	6674	6674	13009	8122	6184	4068	4047	2998	98396
9 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>12 Total Non-Utility Generation</b>	<b>4056</b>	<b>7959</b>	<b>9848</b>	<b>9381</b>	<b>7333</b>	<b>8042</b>	<b>6674</b>	<b>6674</b>	<b>13009</b>	<b>8122</b>	<b>6184</b>	<b>4068</b>	<b>4047</b>	<b>2998</b>	<b>98396</b>

Table A-24: Federal NUG Resources By Project And Project Type  
 PNW Loads and Resource Study  
 2010 - 2011 Fiscal Year  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)

7/21/2009

Light (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<i>-NUG: Hydro-</i>															
1 Dworshak/Clearwater Small Hydropower	863	844	863	905	757	818	400	400	905	800	905	400	421	842	10120
2 Elwha Hydro	1125	2826	3697	3709	2593	2808	2508	2508	2815	2566	1790	1222	1222	744	32131
3 Glines Canyon Hydro	2109	4246	5288	4767	3982	4415	3766	3766	9288	4755	3529	2404	2404	1411	56132
<b>4 Total NUG: Hydro</b>	<b>4097</b>	<b>7916</b>	<b>9848</b>	<b>9380</b>	<b>7332</b>	<b>8041</b>	<b>6674</b>	<b>6674</b>	<b>13007</b>	<b>8120</b>	<b>6224</b>	<b>4026</b>	<b>4047</b>	<b>2997</b>	<b>98384</b>
<i>-NUG: Renewables-</i>															
5 Ashland Solar Project	0.9	0.5	0.3	0.5	0.6	0.9	0.5	0.5	1.4	1.3	1.7	0.7	0.7	1.3	12
6 White Bluffs Solar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>7 Total NUG: Renewables</b>	<b>0.9</b>	<b>0.5</b>	<b>0.3</b>	<b>0.5</b>	<b>0.6</b>	<b>0.9</b>	<b>0.5</b>	<b>0.5</b>	<b>1.4</b>	<b>1.3</b>	<b>1.7</b>	<b>0.7</b>	<b>0.7</b>	<b>1.3</b>	<b>12</b>
<i>-Total Non-Utility Generating Resources-</i>															
8 Federal Entities	4098	7917	9848	9381	7333	8042	6674	6674	13009	8122	6226	4026	4047	2998	98396
9 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>12 Total Non-Utility Generation</b>	<b>4098</b>	<b>7917</b>	<b>9848</b>	<b>9381</b>	<b>7333</b>	<b>8042</b>	<b>6674</b>	<b>6674</b>	<b>13009</b>	<b>8122</b>	<b>6226</b>	<b>4026</b>	<b>4047</b>	<b>2998</b>	<b>98396</b>

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**TOTAL PNW REGIONAL HYDRO ANALYSIS**

**2.7 TOTAL PNW REGIONAL HYDRO RESOURCES  
(Includes PNW Regulated, Independent, and NUG Hydro)  
Monthly Energy in Average Megawatts using 70-Water Conditions  
For FY 2010 and 2011**

Table 2.7.1	FY 2010 Total PNW Regional Hydro .....	80
Table 2.7.2	FY 2011 Total PNW Regional Hydro .....	82

Table 2.7.1  
 2009-2010 Fiscal Year  
 Pacific Northwest Regional Hydro Resources  
 Includes Regulated, Independent, and NUG Hydro  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)  
 Energy in Average Megawatts

Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr 1	Apr 16	May	Jun	Jul	Aug 1	Aug 16	Sep	Avg
1929	11,579	13,038	13,568	12,394	12,116	12,016	10,770	13,223	13,503	16,013	13,812	12,172	10,004	10,270	12,615
1930	11,175	12,347	13,351	12,731	12,036	11,405	11,007	15,269	12,754	12,992	13,392	10,724	9,969	9,930	12,133
1931	10,828	12,795	13,498	12,842	11,904	11,139	11,769	9,680	13,439	12,552	13,433	12,572	10,669	10,751	12,131
1932	10,069	11,798	13,163	12,125	11,119	13,156	15,312	20,288	22,305	20,621	15,570	12,285	11,371	10,918	14,218
1933	11,344	12,805	15,213	20,301	16,159	12,086	15,350	16,443	20,192	20,780	19,813	16,680	14,015	12,175	16,011
1934	13,396	17,235	21,586	21,658	20,863	18,966	19,570	19,631	20,708	18,728	14,938	11,310	10,067	10,509	17,386
1935	11,192	12,662	14,280	19,095	19,226	11,494	12,704	15,679	19,465	17,625	17,351	14,716	11,346	10,184	14,958
1936	11,033	12,358	13,154	11,349	12,420	11,674	12,460	19,310	20,904	20,464	14,087	12,997	10,766	9,644	13,736
1937	11,006	12,737	13,428	12,922	11,266	10,638	9,627	9,953	14,900	14,141	12,782	13,443	11,217	10,435	12,207
1938	11,163	13,020	15,025	19,598	14,630	15,548	16,986	20,772	22,964	19,602	16,439	12,152	10,312	11,069	15,772
1939	11,448	12,538	13,381	13,309	12,164	13,168	14,020	18,581	21,116	16,257	13,547	11,037	9,650	9,640	13,610
1940	11,419	12,881	14,975	12,923	13,336	16,376	16,840	18,303	17,633	17,046	12,107	10,479	9,702	10,312	13,886
1941	10,956	12,807	13,601	12,065	12,544	13,797	11,336	12,926	14,007	13,150	13,187	11,945	10,716	11,451	12,586
1942	10,353	12,793	15,593	14,893	14,921	11,225	11,898	16,720	17,702	20,530	18,058	14,581	11,982	11,143	14,559
1943	11,351	12,611	14,663	17,966	17,686	16,710	20,703	20,772	22,761	20,920	19,132	14,036	11,149	9,526	16,378
1944	11,350	12,912	13,704	12,703	12,275	12,109	10,881	13,267	12,483	12,058	11,818	11,824	10,408	11,013	12,133
1945	10,073	11,524	12,921	12,565	11,143	11,043	9,590	8,630	18,813	18,450	13,237	12,400	10,386	10,020	12,536
1946	10,886	13,717	15,340	17,490	13,862	17,916	18,767	20,654	22,938	20,255	18,288	13,796	11,787	11,203	16,215
1947	11,282	13,774	19,633	19,932	19,724	18,958	17,771	18,923	21,279	20,510	18,077	13,190	11,359	10,918	17,047
1948	15,924	17,392	16,629	21,648	15,858	15,157	15,552	20,200	22,986	21,152	19,825	16,292	14,283	12,059	17,668
1949	12,299	13,405	14,795	13,145	15,573	18,383	18,418	20,561	23,033	20,536	13,312	12,165	9,801	9,567	15,367
1950	11,280	13,322	14,817	18,717	19,223	20,385	20,327	20,382	21,787	20,467	20,088	15,136	13,373	11,513	17,172
1951	13,977	16,912	21,248	22,109	21,830	20,269	20,347	20,683	22,706	20,241	19,763	15,940	12,225	11,224	18,725
1952	14,918	15,328	16,956	21,561	17,073	13,497	19,857	20,805	23,113	21,040	17,094	13,620	11,555	10,270	16,980
1953	11,184	12,293	13,506	15,078	19,043	13,987	11,355	16,195	21,801	21,060	20,021	14,290	12,015	11,049	15,474
1954	12,267	13,965	16,431	18,723	20,733	15,284	17,567	18,315	22,470	20,358	19,955	18,897	17,657	15,231	17,617
1955	12,438	15,449	15,811	14,278	12,887	12,426	12,601	14,508	17,415	20,682	19,854	16,676	13,505	10,998	15,086
1956	13,269	16,938	20,390	22,405	21,296	20,230	20,473	20,613	22,814	20,993	20,012	14,655	13,040	11,340	18,663
1957	12,832	13,223	16,095	16,185	15,017	17,476	18,038	18,518	23,142	20,855	15,294	12,880	10,362	10,615	15,891
1958	11,351	13,068	14,238	15,894	18,913	15,267	16,276	19,752	23,097	20,785	15,096	12,771	11,054	10,372	15,639
1959	11,920	14,997	18,528	21,624	20,986	15,824	19,811	18,490	21,945	20,289	17,378	14,901	12,677	15,595	17,640
1960	16,999	19,244	19,071	19,497	16,907	16,226	20,250	20,061	20,051	20,344	17,070	13,849	10,766	11,048	17,407
1961	11,573	13,485	13,853	18,929	17,139	17,238	19,054	15,776	21,945	20,119	16,013	13,188	12,009	10,128	15,863
1962	10,776	13,239	15,351	16,732	16,121	12,585	16,973	20,701	21,190	20,375	14,454	13,223	11,103	10,042	15,140
1963	12,856	15,363	18,111	18,344	18,523	11,990	13,991	15,507	19,162	20,881	17,313	14,280	11,801	10,981	15,923
1964	11,093	13,481	14,771	15,634	15,792	12,092	14,626	13,571	20,351	21,271	19,874	16,583	12,289	12,728	15,461
1965	13,270	14,665	20,238	22,267	21,735	19,634	17,597	20,794	22,876	20,708	17,022	15,410	13,552	11,762	18,139
1966	12,477	13,279	14,385	17,829	14,194	11,536	19,992	17,331	19,536	18,656	17,496	14,153	11,624	10,505	15,123
1967	11,165	12,808	15,347	21,685	21,246	15,900	15,294	12,885	20,144	21,048	19,834	15,358	12,128	11,175	16,491
1968	12,302	13,443	15,051	19,731	18,837	16,349	11,408	13,908	17,446	20,473	19,155	15,182	13,251	14,064	16,130
1969	13,859	16,901	17,100	21,936	21,319	16,342	20,437	20,566	23,157	20,710	18,736	12,867	10,784	10,770	17,737

Table 2.7.1 - Continued  
2009-2010 Fiscal Year  
Pacific Northwest Regional Hydro Resources  
Includes Regulated, Independent, and NUG Hydro  
[59] 2010 Final Rate Case - 30 Minute Wind (Final)  
Energy in Average Megawatts

Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr 1	Apr 16	May	Jun	Jul	Aug 1	Aug 16	Sep	Avg
1970	12,214	13,495	13,547	14,983	17,871	14,868	14,220	14,750	19,581	21,104	16,019	12,760	10,253	10,036	14,951
1971	11,263	13,179	15,065	22,476	21,598	20,433	20,480	20,590	22,897	21,141	20,559	17,235	13,878	11,872	18,028
1972	12,728	13,950	15,359	22,559	21,956	20,762	20,582	20,301	22,769	21,173	20,065	18,581	16,025	12,486	18,446
1973	12,306	13,456	16,526	16,071	13,129	12,259	9,643	13,467	16,542	14,565	13,763	10,902	9,400	9,949	13,367
1974	11,075	12,320	18,317	22,587	21,918	20,643	20,388	20,586	22,598	21,036	20,206	16,553	14,239	11,587	18,166
1975	10,965	13,099	14,091	17,906	16,236	16,810	12,576	15,831	22,456	21,141	20,452	13,587	13,226	12,150	16,084
1976	14,060	17,247	22,209	22,214	21,474	18,316	20,501	20,529	22,913	20,985	19,891	19,362	19,141	16,865	19,655
1977	12,158	13,139	13,642	12,604	12,542	11,775	10,019	11,210	11,575	10,797	11,881	12,329	11,043	10,673	11,924
1978	9,117	11,752	16,282	16,208	15,045	14,745	19,534	17,592	21,391	18,716	17,556	13,015	12,041	13,932	15,485
1979	12,251	13,287	13,801	13,348	15,344	16,727	13,874	14,466	20,449	15,163	13,123	10,467	9,592	9,776	13,952
1980	10,920	12,715	15,045	12,293	14,812	12,338	13,651	19,292	22,952	20,864	14,918	12,275	10,279	10,934	14,617
1981	11,256	13,777	19,964	21,455	18,598	15,697	11,783	15,254	18,532	20,555	19,645	16,710	14,648	11,222	16,660
1982	11,927	14,069	15,302	19,899	21,861	20,397	19,944	18,766	22,853	20,770	19,451	16,752	13,191	13,559	17,840
1983	13,771	14,632	16,537	21,875	17,759	20,565	18,568	19,443	21,581	20,676	20,262	16,867	13,443	12,310	17,852
1984	12,168	18,138	15,597	22,552	17,485	20,571	20,468	20,593	19,144	21,125	19,872	14,736	11,588	11,711	17,666
1985	12,109	14,966	14,631	16,031	12,600	15,291	18,531	19,577	21,723	17,328	12,676	10,030	9,398	10,565	14,732
1986	12,049	15,708	12,896	19,172	19,191	20,560	20,405	19,700	18,393	19,462	15,808	13,063	10,730	10,202	16,254
1987	11,060	14,506	14,486	13,062	13,857	13,875	14,735	15,153	17,511	16,885	13,336	10,970	9,462	9,670	13,609
1988	10,413	12,225	12,793	11,871	11,701	11,456	11,164	14,499	16,098	11,986	14,065	12,712	10,752	10,114	12,281
1989	10,118	12,478	14,289	12,485	13,335	14,666	18,566	20,590	20,539	17,381	13,865	10,418	10,034	10,160	14,090
1990	10,927	13,597	17,093	20,554	17,255	14,874	18,729	19,735	19,697	20,207	16,442	13,911	12,534	9,942	16,079
1991	10,714	17,247	17,194	21,224	21,029	14,523	17,479	17,006	21,677	19,903	19,625	16,495	13,059	10,644	17,123
1992	10,701	12,792	13,075	13,425	12,246	15,643	12,547	13,901	15,040	13,072	12,765	10,013	9,525	9,191	12,586
1993	10,493	12,278	13,490	12,530	12,396	12,559	13,282	13,680	19,618	15,060	14,909	12,672	11,575	9,469	13,213
1994	10,578	13,176	13,912	12,691	13,665	12,076	11,070	17,666	16,063	14,121	13,562	10,659	9,600	9,461	12,809
1995	10,322	12,180	14,428	14,742	18,188	18,255	16,950	14,648	19,491	19,419	16,991	13,279	11,115	10,656	15,202
1996	12,692	19,431	22,024	22,294	21,921	20,384	20,391	20,912	22,984	20,758	19,948	16,203	11,995	11,387	19,029
1997	12,118	13,710	16,978	22,560	21,978	20,679	20,283	20,613	22,945	21,082	20,304	16,447	13,373	14,128	18,465
1998	17,044	15,888	14,996	19,417	17,850	16,104	15,378	15,941	20,002	20,979	17,267	13,674	10,870	10,771	16,514

Table 2.7.2  
 2010-2011 Fiscal Year  
 Pacific Northwest Regional Hydro Resources  
 Includes Regulated, Independent, and NUG Hydro  
 [59] 2010 Final Rate Case - 30 Minute Wind (Final)  
 Energy in Average Megawatts

Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr 1	Apr 16	May	Jun	Jul	Aug 1	Aug 16	Sep	Avg
1929	11,602	13,062	13,577	12,399	12,122	12,021	10,775	13,231	13,517	16,032	13,833	12,190	10,016	10,280	12,628
1930	11,194	12,365	13,360	12,737	12,041	11,410	11,015	15,278	12,772	13,011	13,412	10,741	9,981	9,940	12,146
1931	10,850	12,819	13,508	12,848	11,910	11,143	11,774	9,688	13,451	12,568	13,454	12,593	10,687	10,760	12,144
1932	10,092	11,821	13,171	12,129	11,124	13,158	15,315	21,036	23,043	21,642	15,592	12,303	11,389	10,933	14,405
1933	11,367	12,827	15,223	20,290	16,171	12,090	15,356	16,456	20,218	21,800	20,073	16,703	14,031	12,187	16,127
1934	13,420	17,240	22,242	22,810	21,800	18,941	20,885	21,232	20,732	18,704	14,959	11,327	10,079	10,520	17,735
1935	11,216	12,684	14,289	19,094	19,192	11,499	12,708	15,688	19,485	17,648	17,377	14,732	11,358	10,197	14,969
1936	11,055	12,381	13,163	11,352	12,426	11,678	12,472	19,330	20,929	21,055	14,109	13,018	10,784	9,654	13,798
1937	11,024	12,757	13,437	12,928	11,272	10,642	9,630	9,958	14,919	14,158	12,801	13,463	11,230	10,445	12,220
1938	11,186	13,043	15,034	19,596	14,637	15,554	17,005	22,175	23,638	19,627	16,462	12,166	10,322	11,080	15,899
1939	11,469	12,561	13,389	13,315	12,170	13,176	14,032	18,604	21,147	16,279	13,568	11,055	9,664	9,651	13,626
1940	11,442	12,904	14,986	12,928	13,341	16,381	16,848	18,316	17,660	17,071	12,127	10,496	9,714	10,321	13,901
1941	10,979	12,831	13,610	12,149	12,456	13,804	11,341	12,938	14,023	13,170	13,208	11,964	10,729	11,461	12,599
1942	10,374	12,816	15,602	14,899	14,928	11,231	11,904	16,733	17,726	20,557	18,084	14,602	11,996	11,152	14,575
1943	11,370	12,633	14,671	17,972	17,669	16,715	22,012	22,379	22,781	21,947	19,157	14,055	11,161	9,535	16,591
1944	11,372	12,935	13,712	12,709	12,283	12,115	10,886	13,279	12,499	12,076	11,838	11,844	10,423	11,026	12,147
1945	10,090	11,547	12,930	12,569	11,147	11,047	9,595	8,635	18,833	18,473	13,257	12,419	10,398	10,030	12,549
1946	10,905	13,741	15,349	17,496	13,875	17,915	18,772	22,256	23,709	20,281	18,313	13,816	11,800	11,213	16,359
1947	11,303	13,797	19,633	19,930	19,710	18,945	17,779	18,939	21,300	21,316	18,104	13,210	11,371	10,928	17,122
1948	15,922	17,418	16,640	22,294	14,754	15,163	15,562	20,443	23,746	22,163	20,087	16,314	14,299	12,069	17,824
1949	12,322	13,428	14,804	13,150	15,580	18,358	18,434	22,138	23,549	21,041	13,332	12,183	9,812	9,576	15,525
1950	11,302	13,344	14,826	18,715	19,198	20,944	20,122	20,378	21,798	21,490	20,261	15,156	13,387	11,523	17,316
1951	14,000	16,936	21,238	23,278	22,764	20,705	21,674	22,292	23,313	20,268	20,024	15,964	12,241	11,236	19,136
1952	14,930	15,352	16,967	21,558	17,077	13,507	19,816	22,175	23,875	21,701	17,117	13,641	11,570	10,282	17,163
1953	11,203	12,315	13,514	15,082	19,029	13,992	11,361	16,210	21,826	22,079	20,281	14,311	12,030	11,059	15,589
1954	12,290	13,988	16,441	18,720	20,711	15,290	17,575	18,331	22,560	21,382	20,214	18,923	17,676	15,223	17,737
1955	12,461	15,474	15,821	14,283	12,893	12,433	12,606	14,516	17,432	21,704	20,114	16,699	13,520	11,006	15,203
1956	13,292	16,963	20,379	23,574	20,569	20,215	20,508	22,230	23,574	22,026	20,272	14,676	13,054	11,349	18,949
1957	12,855	13,246	16,104	16,192	15,032	17,483	18,048	18,535	23,902	21,893	15,316	12,900	10,375	10,624	16,053
1958	11,373	13,091	14,246	15,901	18,900	15,273	16,286	19,771	23,859	21,797	15,117	12,790	11,067	10,380	15,797
1959	11,943	15,020	18,527	22,778	20,923	14,489	19,731	18,403	21,819	21,325	17,403	14,931	12,690	15,585	17,695
1960	16,991	19,237	19,072	19,496	16,915	16,233	21,569	20,081	20,079	21,289	17,095	13,868	10,777	11,057	17,546
1961	11,596	13,508	13,862	18,928	17,112	17,245	19,064	15,787	21,958	21,134	16,036	13,208	12,023	10,137	15,956
1962	10,798	13,263	15,361	16,739	16,128	12,590	16,980	22,300	21,219	21,361	14,475	13,238	11,114	10,051	15,299
1963	12,879	15,387	18,111	18,345	18,498	11,996	13,997	15,516	19,186	20,946	17,338	14,301	11,815	10,992	15,939
1964	11,116	13,505	14,781	15,640	15,808	12,097	14,629	13,577	20,380	22,285	20,132	16,606	12,303	12,738	15,578
1965	13,292	14,690	20,238	23,444	22,670	19,617	17,574	22,396	23,321	21,608	17,048	15,432	13,567	11,772	18,495
1966	12,498	13,302	14,394	17,837	14,205	11,540	20,783	17,345	19,566	18,681	17,521	14,176	11,638	10,519	15,172
1967	11,188	12,831	15,356	22,713	21,081	14,420	15,088	12,803	20,154	22,054	20,096	15,380	12,143	11,185	16,541
1968	12,324	13,466	15,060	19,729	18,813	16,358	11,416	13,923	17,468	21,162	19,183	15,204	13,267	14,066	16,196
1969	13,883	16,926	17,111	23,093	20,385	15,833	21,761	22,175	23,916	21,224	18,763	12,887	10,795	10,780	17,957

Table 2.7.2 - Continued  
2010-2011 Fiscal Year  
Pacific Northwest Regional Hydro Resources  
Includes Regulated, Independent, and NUG Hydro  
[59] 2010 Final Rate Case - 30 Minute Wind (Final)  
Energy in Average Megawatts

Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr 1	Apr 16	May	Jun	Jul	Aug 1	Aug 16	Sep	Avg
1970	12,237	13,519	13,556	14,987	17,855	14,874	14,229	14,767	19,607	22,113	16,042	12,778	10,265	10,046	15,045
1971	11,286	13,202	15,074	23,209	22,526	19,919	19,890	20,951	23,655	22,161	20,817	17,258	13,895	11,884	18,286
1972	12,751	13,973	15,369	23,067	22,075	22,331	21,896	20,323	23,528	22,193	20,325	18,607	16,045	12,499	18,864
1973	12,329	13,479	16,536	16,077	13,145	12,264	9,647	13,476	16,562	14,585	13,784	10,920	9,414	9,960	13,381
1974	11,097	12,341	18,317	23,737	22,835	22,227	21,705	22,199	23,361	22,069	20,465	16,574	14,255	11,597	18,767
1975	10,984	13,122	14,100	17,902	16,252	16,816	12,584	15,849	22,474	22,162	20,709	13,607	13,242	12,162	16,201
1976	14,083	17,272	22,858	23,379	21,951	16,996	21,188	21,192	23,674	21,897	20,148	19,428	19,164	16,860	19,958
1977	12,180	13,162	13,650	12,609	12,549	11,782	10,024	11,220	11,585	10,810	11,902	12,347	11,054	10,684	11,936
1978	9,138	11,774	16,278	16,212	15,049	14,749	19,500	17,602	21,398	18,741	17,580	13,033	12,054	13,922	15,494
1979	12,275	13,311	13,810	13,353	15,352	16,734	13,884	14,479	20,469	15,181	13,143	10,485	9,606	9,788	13,967
1980	10,943	12,739	15,055	12,336	14,774	12,343	13,664	19,314	23,484	20,890	14,940	12,294	10,291	10,943	14,676
1981	11,274	13,801	19,966	22,614	16,676	15,705	11,625	15,233	18,524	21,580	19,908	16,735	14,667	11,233	16,717
1982	11,950	14,093	15,311	19,898	22,782	21,985	19,380	18,679	23,265	21,772	19,477	16,775	13,205	13,556	18,144
1983	13,794	14,656	16,547	21,869	17,744	22,153	18,544	19,466	21,599	20,699	20,521	16,891	13,460	12,323	18,018
1984	12,190	18,142	15,606	23,712	16,022	20,762	19,991	20,613	19,169	22,133	19,898	14,758	11,602	11,724	17,742
1985	12,131	14,989	14,640	16,042	12,610	15,298	18,499	19,597	21,752	17,349	12,696	10,048	9,410	10,576	14,747
1986	12,071	15,733	12,904	19,170	19,149	22,135	21,206	19,723	18,418	19,486	15,831	13,083	10,742	10,211	16,431
1987	11,082	14,530	14,495	13,067	13,863	13,882	14,748	15,167	17,528	16,909	13,355	10,987	9,473	9,680	13,623
1988	10,429	12,249	12,801	11,875	11,706	11,461	11,168	14,507	16,111	12,002	14,085	12,727	10,763	10,124	12,293
1989	10,141	12,501	14,298	12,489	13,341	14,673	18,556	20,798	20,564	17,404	13,885	10,434	10,045	10,169	14,112
1990	10,950	13,620	17,104	20,554	17,263	14,880	18,741	21,351	19,722	21,219	16,465	13,930	12,550	9,953	16,241
1991	10,736	17,273	17,205	21,727	20,961	13,597	17,444	17,008	21,693	19,926	19,879	16,514	13,072	10,653	17,113
1992	10,719	12,809	13,082	13,430	12,251	15,650	12,552	13,909	15,051	13,091	12,784	10,026	9,535	9,199	12,597
1993	10,515	12,301	13,499	12,536	12,402	12,563	13,288	13,689	19,640	15,078	14,930	12,692	11,590	9,479	13,227
1994	10,594	13,200	13,922	12,696	13,672	12,081	11,074	17,678	16,083	14,141	13,583	10,676	9,612	9,470	12,822
1995	10,341	12,202	14,437	14,748	18,165	18,230	16,958	14,656	19,517	19,442	17,014	13,297	11,127	10,666	15,212
1996	12,715	19,435	22,663	23,468	22,852	21,959	20,787	22,526	23,564	21,769	20,208	16,227	12,010	11,398	19,630
1997	12,141	13,733	16,988	23,726	22,916	22,260	20,376	22,225	23,706	22,105	20,562	16,470	13,388	14,127	19,017
1998	17,031	15,913	15,005	19,419	17,855	16,110	15,391	15,960	20,017	21,997	17,293	13,694	10,883	10,782	16,607

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**ESTIMATED PURCHASE MW ELIGIBLE FOR  
4(h)(10)C CREDIT**

**2.8 ESTIMATED PURCHASE MW ELIGIBLE FOR 4(h)(10)C CREDIT  
Monthly Energy in Average Megawatts using 70-Water Conditions**

Table 2.8.1 4(h)(10)C Power Purchase Amounts .....86

**Table 2.8.1**  
**4(h)(10)(C) Power Purchase Amounts**  
**Energy in Average Megawatts**

<b>Water Year</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr 1</b>	<b>Apr 16</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug 1</b>	<b>Aug 16</b>	<b>Sep</b>
1929	1,046	910	1,649	2,042	1,800	804	1,116	-30	1,497	0	0	196	434	786
1930	674	682	1,583	1,870	1,532	1,057	372	0	1,889	1,311	0	1,426	532	183
1931	294	226	1,599	2,384	1,052	1,161	238	1,994	629	1,196	0	-262	0	141
1932	683	863	1,625	2,681	2,231	1,356	915	652	305	-97	-1,347	1,522	324	131
1933	760	1,421	399	0	0	1,183	0	0	0	0	0	544	0	9
1934	220	0	0	0	0	0	0	0	0	-427	0	925	258	-51
1935	350	1,990	1,547	0	0	1,618	0	235	0	-46	-165	225	58	879
1936	846	887	1,653	3,193	1,056	1,238	75	0	0	0	0	607	278	942
1937	786	331	1,533	1,759	2,108	1,751	1,691	2,115	319	804	-13	-356	-456	-119
1938	267	875	763	0	0	0	0	0	0	0	-13	-18	328	-34
1939	356	998	1,987	1,871	1,924	410	0	0	0	-369	0	1,064	797	1,116
1940	519	308	71	2,043	1,490	0	0	0	0	0	555	1,727	659	-34
1941	218	343	1,248	2,794	924	0	430	0	199	1,160	0	-53	0	0
1942	556	141	131	381	309	2,292	29	-860	-1,475	1,308	-1,236	0	0	-170
1943	171	1,526	1,198	0	0	0	0	0	0	0	0	2,351	955	1,592
1944	1,011	945	1,811	1,973	1,623	1,093	923	0	1,725	2,116	397	-176	0	93
1945	664	834	1,681	2,431	2,994	694	458	2,910	-1,019	1,313	-617	-244	-49	-115
1946	660	344	646	278	210	0	0	0	0	0	0	1,230	518	458
1947	1,089	772	0	0	0	0	0	0	0	0	0	1,256	557	517
1948	0	0	0	0	0	0	0	0	0	0	0	288	0	104
1949	546	908	790	1,857	0	0	0	0	0	0	-444	213	278	601
1950	464	1,088	1,075	0	0	0	0	0	0	0	0	1,876	0	414
1951	17	0	0	0	0	0	0	0	0	0	0	1,014	418	721
1952	0	0	0	0	0	426	0	0	0	0	0	1,644	315	952
1953	882	1,031	1,651	1,558	0	0	871	0	0	0	0	1,225	451	658
1954	537	640	22	0	0	0	0	0	0	0	0	0	0	0
1955	530	0	0	1,523	1,409	576	-251	0	0	0	0	535	0	880
1956	415	0	0	0	0	0	0	0	0	0	0	1,633	0	496
1957	371	1,172	240	170	532	0	0	0	0	0	0	15	441	705
1958	860	670	1,269	624	0	0	0	0	0	0	-102	-59	-67	759
1959	584	135	0	0	0	0	0	0	0	0	0	1,579	0	0
1960	0	0	0	0	0	0	0	0	0	0	-283	2,878	454	512
1961	705	1,078	1,092	0	0	0	0	0	0	0	-366	-706	-224	846
1962	1,240	697	338	0	0	274	0	0	0	0	-87	800	634	903
1963	65	0	0	0	0	1,274	0	-103	0	0	0	1,070	366	566
1964	1,055	869	588	909	0	929	0	374	0	0	0	488	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	1,395	0	421
1966	318	886	635	0	468	1,702	0	0	0	0	0	1,499	272	975
1967	931	1,119	542	0	0	0	0	691	0	0	0	1,164	131	363
1968	612	994	501	0	0	0	743	-529	0	0	0	527	0	0
1969	0	0	0	0	0	0	0	0	0	0	-166	838	419	745



**Table 2.8.1  
4(h)(10)(C) Power Purchase Amounts  
Energy in Average Megawatts**

<b>Water Year</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr 1</b>	<b>Apr 16</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug 1</b>	<b>Aug 16</b>	<b>Sep</b>
1970	508	618	1,456	1,482	0	0	0	-616	0	0	0	345	456	1,101
1971	836	865	884	0	0	0	0	0	0	0	0	118	0	143
1972	423	848	349	0	0	0	0	0	0	0	0	0	0	93
1973	564	754	0	617	1,545	685	1,562	-199	0	384	-24	1,441	1,088	470
1974	325	1,347	0	0	0	0	0	0	0	0	0	674	0	353
1975	1,312	969	1,472	0	0	0	189	0	0	0	0	1,195	0	67
1976	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1977	503	723	1,541	1,928	1,271	785	1,447	955	2,444	2,741	159	-321	-167	120
1978	1,300	1,051	-178	0	283	191	0	991	208	1,859	-1,245	0	0	0
1979	0	535	1,609	2,406	0	0	0	1,225	0	589	42	1,099	409	533
1980	445	915	220	3,695	0	1,033	0	0	0	0	-314	59	102	0
1981	325	560	0	0	0	0	0	566	0	0	0	16	0	560
1982	671	271	541	0	0	0	0	0	0	0	0	309	0	0
1983	0	69	0	0	0	0	0	0	0	0	0	477	0	75
1984	540	0	413	0	0	0	0	0	0	0	0	892	716	236
1985	711	212	547	0	1,870	0	0	0	0	-566	130	1,743	651	148
1986	103	0	1,557	0	0	0	0	0	0	0	-252	-671	226	1,133
1987	1,100	325	1,220	2,100	1,103	-95	0	0	0	-231	-41	784	322	566
1988	606	1,040	2,199	3,078	1,411	1,644	-287	1,023	-88	2,505	-127	-162	0	120
1989	644	958	1,288	3,369	397	0	0	0	0	-1,038	-1,004	1,419	410	359
1990	587	872	0	0	0	0	0	0	0	0	-317	2,032	0	1,060
1991	1,335	0	0	0	0	0	0	0	0	0	0	392	0	886
1992	1,089	1,221	2,007	1,756	2,034	-110	-387	-306	0	999	0	1,141	255	711
1993	324	568	1,595	1,972	1,779	954	-35	282	0	235	0	-333	-147	488
1994	761	541	949	2,735	651	1,287	155	0	0	816	-13	1,014	272	587
1995	538	1,236	1,018	2,060	0	0	0	1,394	0	0	0	645	631	419
1996	211	0	0	0	0	0	0	0	0	0	0	596	0	571
1997	732	988	0	0	0	0	0	0	0	0	0	0	0	0
1998	0	0	953	0	0	0	0	0	0	0	0	1,187	73	792

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**HYDSIM HYDRO REGUALTION STUDY  
ASSUMPTIONS**

**2.9 HYDSIM HYDRO REGULATION STUDY ASSUMPTIONS**

Section 2.9.1 HYDSIM Assumptions for 2010 and 2011 .....90

**Date Requested:** April 7, 2009      **STUDY NUMBER:** 08\_RateCase10\_final  
& 08\_RateCase11\_final

**Requested By:** BPA

**Due Date:** May 1, 2009 (ASAP)

**Purpose of Study:** This is a 70-year continuous study of the system operation for the final proposal 2010 rate case study.

**Directory of Study:** **AER Step:**  
Q:\RATES\08\_RATECASE09\_final\AER  
**OPER Step:**  
Q:\RATES\08\_RATECASE10\_final\OPER  
Q:\RATES\08\_RATECASE11\_final\OPER

**Name of Regulator:** Jennie Tran

### AER STEP

- This AER Step is used to determine the project minimum elevations (or maximum draft) using load equal to OY08 Firm Energy Load Carrying Capability (FELCC) and unlimited secondary market. Minimum elevations from the AER Step will be input into the Operational Step.
- This is a **continuous** study mostly based on the OY08 PNCA data submittal. The study will begin on October 1, 1928 and end on September 30, 1998, a 70-year study (FISCAL YEAR OCT 2007 – SEP 2008); The Coordinated System generation does not include the Tacoma projects, as well as Brownlee, Oxbow, and Hells Canyon.
- **Stream Flow:** The 70 years of stream flows used are from “Modified Streamflows 2000 Level of Irrigation”. They contain 2000 level irrigation depletions. (See “Seasonal Volumes and Statistics, 1928-1999, 2000 Level Modified Streamflows Computed Seasonal Volumes 71-year Statistics, Columbia River Basin, Prepared for BPA, May 2004.” Data on pg. 203, for instance, is used at Grand Coulee.) Adjustments to these 2000 level modified stream flows are made due to the Bureau of Reclamation’s updated **Grand Coulee pumping schedule** for the Columbia Basin Project. This pumping schedule is included in the BOR’s February 1, 2007 preliminary PNCA data submittal. No adjustments are made for **NTSA** storage and release. The inflows to Brownlee are adjusted by the regulation of the Upper Snake reservoirs to release up to 487 kaf provided by the Bureau of Reclamation on June 1, 2007, and reflects the Upper Snake BiOp operation. (Brownlee inflows in low water years reflect an operation of Upper Snake reservoirs that shifts some flow augmentation for salmon from summer to spring, often referred to as shifted Brownlee inflows.)
- **Plant Data:** The OY08 PNCA plant data is used for all projects except Hungry Horse plant data is from OY09 reflecting 0% bank storage.
- **Loads:** All FELCC is taken from the OY08 Critical Period study run by the Northwest Power Pool (NWPP). The NWPP study has a one-year critical period (August 16, 1936 through March 31, 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 projects is no longer included in the PNCA’s Coordinated System FELCC computation. The PNCA hydro FELCC includes Hydro-Independent generation from 1936-37 so BPA revises it to reflect the Hydro-Independent generation for each of the 70 years to develop the hydro-residual load required for this study. There is no limit assumed in the secondary market.
- **Unit Outages:** The unit outages for all projects are from the PNCA OY08.

- **Initial Contents** All projects are initialized to September 30, 1929 storage ending content from the 50-yr continuous final Rates study for 2007 (Q:\RATES\06\04RATE\_07) except Mica, Arrow, Duncan projects are initialized to the same content from the Treaty Detailed Operating Plan DOP09 study (Q:\TREATY\DOP09\FY09\_RATE).
- **Critical Rule Curves:** Critical Rule Curves (CRC) are in accordance with PNCA 2008 adopted system critical rule curves. (However, CRC for Horse is adjusted down by 45.1 ksf from full for 0% bank storage table.) They are as follows: 1st year = OY08 CRC1; 2nd year = empty; 3rd year = empty; and 4th year = empty.
- **Flood Control Rule Curves:** These 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; no shift to Coulee; 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 in April 2008. Variable flow flood control in December at Libby is computed by BPA based on Jan1 April-August forecasts at Libby. The flood control target draft at Libby from full in December is 1.4 Maf if the forecast is less than 5500 Kaf and 2.0 Maf if the forecast is greater than or equal to 5900 Kaf. There is a straight-line interpolation between 1.4 and 2.0 Maf flood control draft from full when the forecast is between 5500 and 5900 Kaf. The Mica, Arrow, Duncan projects' flood control requirements will be the same as used in the DOP09 study which has 3/4 Arrow/Mica split and non-shifted VARQ flood control at Horse (Q:\hysim\dat\pnca\vurc\_bpa\VQHGH11Apr08\_SYN34\_NS\_70.HYMOD). 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.
- **ECC Curves:** Variable Energy Content Curves (VECCs) are calculated using OY08 Power Discharge Requirements (PDR's), distribution factors, and forecast errors, which are used in PNCA planning. The Grand Coulee ECC lower limits are 1225 feet (420.5 ksf) in January-April 30 and 1240 feet (843.9 ksf) in May. The Canadian DOP09 VECCs are based on forecasts, 3/4 Arrow/Mica split, non-shifted, and VarQ flood control at Horse only. The VECCs for the Federal projects are based on the 70-year volume forecasts.

#### Project Specific Data:

- **Mica, Duncan, and Arrow:** The Canadian Treaty projects are fixed to the 70-year DOP09 Treaty Storage Regulation run by BPA on August 13, 2008. Mica data logic in the HYDSIM program is turned off. Mica's minimum storage content is reset to 0.0 ksf so that drafting below 2295.9 ksf (normal minimum content) can occur.
- **Libby** has a maximum outflow of 26,500 cfs in all periods. It can be drafted to meet FELCC September through November as long as it does not draft below the December Variable URC. If the December forecast at Libby for Apr-Aug periods is less than 5500 kaf, then the flood control at Libby in December is 2426.6 ft (1804.7 ksf), If the forecast is greater than 5900 kaf, then the flood control in December is 2411.0 ft (1502.2 ksf). The flood control data is interpolated between 1804.7 ksf and 1502.2 ksf if the forecast is between 5500 and 5900 kaf. In January through mid-April, Libby is operated on minimum flow (4,000 cfs) or VARQ flood control objectives as defined in the BiOp. It should be noted that Libby does violate the URC at times for Corra Linn's IJC operation, in order to avoid flooding. Otherwise the drafting for flood control space at Libby would actually cause downstream flooding near Corra Linn. Sturgeon and Bull Trout flow requirements May through July are based on May 1 April-August Kuehl-Moffit forecast at Libby and are summarized as follows from the PNCA OY08 Corps of Engineers Data Submittal based on the USFWS February 18, 2006, BiOp.

<u>Libby May1 Apr-Aug</u> <u>Forecast Interval (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 (KCFS)</u>
<4800	6.0
4800-6000	7.0
6000-6700	8.0
>6700	9.0

Libby is operated during May and June for Sturgeon and May 15 through September 30 for Bull Trout in all years. The project draft limit for McNary flow augmentation is 2439 ft (2061.3 ksf) June through August. It can draft below 2439 ft to meet the Bull Trout flow objective. Libby's maximum outflow from mid-April through August is powerhouse hydraulic capacity without spill unless a higher outflow is required to maintain the required VARQ flood control space. Libby should not draft below the variable computed straight line content between June 30 and August draft limit of 2061.3 ksf (2439 ft) during July and August in order to minimize occurrences of a second peak flow in the summer. The reservoir may draft below 2439 ft to meet the bull trout minimum flows through September.

- **Hungry Horse:** Hungry Horse's storage table is changed from 3% to 0% bank storage based on Reclamations OY09 PNCA data. Hungry Horse can not draft below Integrated Rule Curve (IRC) curves 3545 ft (1330.2 ksf), 3545 ft (1330.2 ksf), 3542 ft (1297.1 ksf), and 3533 ft (1199.4 ksf) during September through December, respectively. From January through March, Hungry Horse operates to the higher of variable IRC or Biological Rule Curve (Fish VECC) objectives and must also stay below a maximum content calculated to reduce the possibility of forced spill. The Biological rule curves are calculated using assumed inflows that are exceeded 75 percent of the time, perfect foreknowledge of the minimum outflow, and the requirement to be at flood control elevation on April 10. April through June, Hungry Horse operates on or near flood control. On July 31, August 15 and August 31, Hungry Horse's draft limits are 3560, 3550 and 3540.0 feet (1503.4, 1386.7, and 1275.0 ksf) for BiOp flow augmentation. Hungry Horse will be operated to meet the Columbia Falls minimum flow between 3200 cfs and 3500 cfs based on the April to August volume runoff between 1190 kaf and 1790 kaf at Hungry Horse. The outflow at Hungry Horse is limited to maximum turbine capacity of 12,048 cfs, and no spill is allowed unless required to maintain the required flood control space. Hungry Horse will violate upper rule curve to keep its maximum outflow to 20 kcfs or below.
- **Albeni Falls** is operated at 2062.5 ft (582.4 ksf) June through August, 2061.5 ft (535.7 ksf) in September, 2056 ft (279.0 ksf) in October, 2055 ft (234.7 ksf) November through March, 2055.5 ft (256.9 ksf) in April 15, 2056.0 ft (279.0 ksf) in April 30, and 2058.8 ft (409.7 ksf) in May.
- **Grand Coulee** is operated to meet FELCC September through December subject to the draft limits of 1283 feet (2329.7 ksf) in September, 1283 feet (2329.7 ksf) in October, 1275 feet (2027.7 ksf) in November, and 1270 feet (1839.2 ksf) in December. January through March, Coulee is operated to the higher of winter draft limits [1260 feet (1491.5 ksf), 1250 feet (1159.1 ksf), 1240 feet (843.9 ksf), respectively] or the Biological Rule Curve (fish VECC). The Biological Rule Curve 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 Biological rule curves are calculated using assumed inflows which are exceeded 85 percent of the time, perfect

foreknowledge of the minimum outflow, and the requirement to be at VARQ flood control elevation on April 10. On April 15, Coulee is operated on flood control. From April 30 through May, Grand Coulee may be drafted to the lower of flood control or 1280 ft (2216.3 ksf) to support Priest Rapids and McNary flow augmentation targets. In Jun - Jul, Grand Coulee draft limits are 1288 ft (2531.9 ksf), 1285 feet (2408.2 ksf), respectively to support Priest Rapids and McNary flow augmentation targets. In Au1, the draft limit for BIOP flow augmentation is 1280 ft (2216.4 ksf) if July 1 April-August runoff at The Dalles is less than 92 Maf; otherwise the draft limit is 1282 ft (2291.9 ksf). In Au2, the draft limit is 1278 ft (2140.9 ksf) if the July 1 April-August volume runoff at The Dalles is less than 92 Maf, otherwise the draft limit is 1280 ft (2216.4 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 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% 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.
- **Priest Rapids:** From April 10 to June 30 Priest Rapids has a flow augmentation target of 135,000 cfs for Steelhead. From April 1 to April 9 the minimum flow for Priest Rapids is the same as the Vernita Bar minimum for each year.
- **Brownlee** operates to the 70-yr rule curves provided to BPA from the Northwest Power Pool on March 15, 2007. They are 432.1 ksf in Au1, 380.7 ksf in Au2, 293.8 ksf in Sep, 491.7 ksf in Nov, 436.3 ksf in Dec, 385.4 ksf in Jan, 484.7 ksf in Jun and Jul. The rule curves are vary between 226.0 ksf, 113.2 ksf, 62.9 ksf, 0.0 ksf and 74.7 ksf to full content of 491.7 ksf in Oct, Feb, Mar, Ap1, Ap2 and May, respectively.
- **Dworshak** is on minimum flow of 1300 cfs all periods or flood control objectives as defined in the BiOP, with the exception of April through August when it operates to meet Lower Granite flow augmentation targets. The NMFS BIOP place a higher priority on refilling Dworshak on June 30, so Dworshak will be operated on minimum flow or flood control during April-June. Dworshak's outflow is limited to 14,000 cfs in the flow augmentation periods and is limited to 25,000 cfs in all other periods for downstream flood control. During the flow augmentation period, Dworshak will release no more water than necessary to meet the minimum flow requirements. For July – August, Dworshak operates to a target of 1534 ft (490.0 ksf) by the end of August. In September, draft Dworshak to 1520 ft (395.8 ksf) on September 15 and run to the minimum flow of 1300 cfs for the remainder of the month.
- **Lower Snake** projects will be **operated at MOP** in accordance with the COE data submittal and the BiOp. As identified in the BiOp, the Corps will operate 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 will operate within one foot of MOP from approximately April 3 through November 15 (Ap1-Oct in HYDSIM modeling). MOP for Lower Granite, Little Goose, Lower Monumental and Ice Harbor is elevation 733 (225.0 ksf), 633 (260.5 ksf), 537 (180.5 ksf) and 437 feet (193.4 ksf), respectively. During the rest of the year Lower Granite, Little Goose, Lower Monumental and Ice Harbor will operate at elevation 738 (245.8 ksf), 638 (285.1 ksf), 540 (190.1 ksf) and 440 feet (204.8 ksf), respectively.
- 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) each are required to operate their turbines within **1% of peak efficiency** during the period of March through November. This requirement is reflected in a hydro availability file, which limits the maximum generation capability of each project in each of the fourteen periods. No other hydro outages assumed.
- Generation at these eight projects (Lower Granite, Little Goose, Lower Monumental, Ice Harbor, McNary, John Day, The Dalles and Bonneville) is reduced further with the inclusion of **Juvenile Passage 2007-08 expected Fish Spill Plan**. Juvenile Passage Fish Spill at Federal projects

(values less than one are percent of outflow and values greater than one are cfs), limited by Spill Caps, is as shown below. The spill caps represent completed modifications at spillways currently planned and which are used as hydroregulation modeling caps, not instantaneous. Lower Granite, Little Goose, Lower Monumental, Ice Harbor, McNary, John Day, The Dalles and Bonneville have a minimum turbine flow of 11500, 11500, 11500, 9500, 50000, 50000, 50000, and 30000-cfs respectively.

- **Juvenile Passage Spill and Dissolved Gas Caps from OY08 PNCA Planning:**

<b>HRLY/DLY SPILL CRITERIA FOR PNCA OY08 AER study</b>					
	<b>Spill</b>	<b>Min Turb</b>	<b>Days</b>	<b>Hour Ending</b>	<b>Spill Cap</b>
<b>LWG</b>	20 kcfs 18 kcfs	11.5 kcfs	Apr 3 - Jun 20; Jun 21 - Aug 31	All hours	20 kcfs in Spring 18 kcfs in Summer
<b>LGS</b>	30% flow	11.5 kcfs	Apr 3 - Aug 31	All hours	44 kcfs
<b>LMN</b>	31 kcfs 17 kcfs	11.5 kcfs	Apr 3 - Jun 20 Jun 21 - Aug 31	All hours	31 kcfs in Spring 17 kcfs in Summer
<b>IHR</b>	45 kcfs day/76 kcfs night	9.5 kcfs	Apr 3 - Jun 20	All hours (13 hrs day, 11hrs night)	76 kcfs in Spring 78 kcfs in Summer
	45 kcfs day/78 kcfs night		Jun 21 - Aug 31		
<b>MCN</b>	40% flow	50 kcfs	Apr 20 - Jun 30	All hours	148 kcfs Apr 10-Jun 30                   133 kcfs Jul 1 - Aug 31
	40% of flow alternate w/ 60% of flow		Jul 1 - Aug 31		
<b>JDA</b>	60% flow	50 kcfs	Apr 10 - Apr 30	12 hrs night	126 kcfs Apr-Jun 120 kcfs Jul -Aug Min Spill Req: 25% flow
	60% flow		May 1 - May 15	12 hrs night	
	60% flow		May 16 - Jun 30	13 hrs night	
	30% flow		Jul 1 - Aug 31	All hours	
<b>TDA</b>	40% flow	50 kcfs	Apr 10 - Aug 31	All hours	125 kcfs
<b>BON</b>	100 kcfs	30 kcfs	Apr 10 - Jun 30	All hours	124 kcfs
	75 kcfs day/123 kcfs night		Jul 1 - Jul 31	All hours (18 hrs day, 6 hrs night)	123 kcfs Min Spill Req: 50 kcfs
			Aug 1 - Aug 15	All hours (17 hrs day, 7 hrs night)	
			Aug 16 - Aug 31	All hours (16 hrs day, 8 hrs night)	



- **Lower Columbia fall Chum spawning** flow objectives (at Bonneville) are as follows: From November 1 through April 10 provide 125 kcfs (allow to exceed Chum flow if the projects operate to fish veccs). The priority for releasing water from upstream reservoirs for this flow augmentation is Grand Coulee, Libby, and Hungry Horse. The draft limits for Chum flow in November-December are 1275 ft (2027.6 ksf) and 1270 ft (1839.2 ksf) at Coulee. The variable draft limit for Chum flow at Libby in December is in the range of 2411 ft (1502.2 ksf) to 2426.6 ft (1804.7 ksf) based on the Jan1 Apr-Aug forecast at Libby.
- Use a **sliding scale flow augmentation target** of from 220,000 to 260,000-cfs **at McNary** based on The Dalles April 1, April - August volume runoff. A straight-line interpolation will be used for flow targets for volume forecasts between 80 and 92 Maf in the April 10 through June 30 period. The AP1 period value is prorated at 9 days at 155,000 cfs and 6 days at from 220,000 to 260,000 cfs. Maximum and minimum targets are 260,000 cfs and 220,000 cfs, respectively. July and both halves of August flow targets are 200,000 cfs. The priority for releasing water from upstream reservoirs for flow augmentation is Grand Coulee, Libby and Hungry Horse.
- **Lower Granite** also has **sliding scale flow augmentation targets**. 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, then 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.
- **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).
- Juvenile Passage **spills at non-Federal** projects will be as described below and as was submitted for OY08 PNCA planning. Wells spills the percentage described below if Chief Joe’s outflow is less than 140,000 cfs; otherwise Wells spills 10, 200 cfs during April 12 – August 26.

**PROJECT SPILL FOR FISH IN  
PERCENT OF REGULATED FLOW (%)**

PROJECTS:	Apr1	Apr2	May	Jun	Jul	Aug1	Aug2
<b>Wells</b>	1.7	6.5	6.5	6.5	6.5	6.5	4.5
<b>Rocky Reach</b>	0.0	0.0	20.1	12.5	9.0	9.0	0.0
<b>Rock Island</b>	10	10.0	10.0	17.0	20.0	20.0	0.0
<b>Wanapum</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Priest Rapids</b>	0.0	61.0	61.0	50.0	39.0	39.0	19.5

- **Kootenay Lake** is operated as necessary, up to free flow, to maintain the lake level below the IJC rule curve and the calculated “allowable elevation at Queens Bay”. This is implemented using the 5-step method developed by BPA and the Corps. After August 31, the lake level may be raised 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 unless specifically amended below.
- **Plant Data:** Update storage/elevation table for Coulee based on PNCA OY09.

- **Loads:** The system is run to 2010 and 2011 Coordinated System firm loads from BPA's 2009 LARIS Study 57 updated 1/1/2009. A secondary market limit of 10,000 aMW is used in every period of every year. The Coordinated System hydro-Independent generation (study 57) for each of the 70 years to develop the hydro-residual load required for this study is updated.
- **Unit Outages:** The unit outages for non-federal projects are from the PNCA OY08 and for federal project are from actual average 2001-07 computed for FY2010.
- **Kootenay Lake:** Grohman Narrows capacity table was updated to align with BCHydro's revised information.
- **Initial Contents:** Major federal projects are initialized to the 50-yr average of September 30 storage ending content from the 08RateCase10\_rev study.
- **Flood Control Rule Curves:** no change in flood control at Mica and Duncan from the AER step. Arrow flood control is updated to 3.6/4.08 Arrow/Mica split set in order to have more space available for 1 MAF flow augmentation.
- **Non-federal** projects are run to the contents that resulted in the AER step. This allows the federal projects to fill without requiring the non-federal projects to draft to meet load.
- **Lower Columbia fall spawning** flow objectives (at Bonneville) are as follows: computed variable flow from November through March for Chum flow requirement based on 11.5 or 11.3 ft tailwater elevation Bonneville most fall/winters then 16.5 ft tailwater APR1 - APR2. Grand Coulee will release water to meet the Lower Columbia fall spawning salmon flow objectives at Bonneville in November - March.
- **Lower Columbia Spring/Summer Flow Augmentation:** The January-April 15 operation of the federal reservoirs is to achieve the BiOp April 10 URC objective. Hungry Horse and Dworshak are on minimum flow or will release above minimum outflow as needed to meet flood control requirements from April through June 30 in all water years. (No spring or summer flow target is are used at Lower Granite). Grand Coulee, Hungry Horse and Libby will draft (in that order) to meet the McNary summer flow requirement of 200 kcfs. Grand Coulee will release the water to meet the Vernita Bar, Steelhead, and McNary flow requirement in spring. Hungry Horse and Libby (except release for sturgeon/bull trout flow) will be on minimum flow from April through June 30 in all water years to maximize storage by June 30 to maximize the water available for summer flow augmentation. Libby and Hungry Horse will release water in July to reduce occurrences of a second peak in flows without regard to the level of flow achieved at McNary.
- **Powerhouse Availabilities:** Reflects expected outages based on average actual 2001-2008 outages, plus the large unit outages starting in December 2009 at Chief Joseph and in August 2012 at Grand Coulee. Also reflects current contingency reserve requirements (5% hydro generation, 7% thermal generation, and 5% generation for wind using a 30% capacity factor) October 2009 through March 2010. Then starting April 2010, modified contingency reserve requirements to 3% area load plus 3% for all generation resources assuming BAL-002-WECC-1 would be adopted 6 months into the rate period. Within-hour balancing reserve requirements consistent with the 45-minute persistence wind scheduling assumptions were applied throughout the study.

### Project Specific Data:

- **Mica, Duncan and Arrow:** are fixed to the 70-year DOP09 Treaty Storage Regulation run by BPA on August 13, 2008, and then the following are added to the operations. 1) Add the trout spawning operation at Arrow where Apr2 flows are at least 15kcfs and May-June flows are equal to or greater than the preceding month whenever possible. No more than a 10kcfs decrease is allowed. 2) 3) Balance Arrow and Duncan operations to ensure that both projects are on TSR by 31 July.
- **Mica:** minimum storage content is reset to 0.0 ksfd so that drafting below 2295.9 ksfd (normal minimum content) can occur. Mica data logic in the HYDSIM program is turned off.

- **Arrow:** stores up to 1 Maf for flow augmentation in January in all years, and releases the 1 Maf (15% in May, 15% in June, and 70% in July) in years with a Feb-1 January-July forecast at The Dalles greater than 110.4 maf. The flow augmentation will all be released by July 31 allowing Arrow to be on TSR by 31 July. For trout spawning operation, Arrow operates to a 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. Arrow also has a minimum flow of 15,000 cfs in June
- **Priest Rapids:** From April 10-30 Priest Rapids has a flow augmentation target of 120,000 cfs, and in June Priest Rapids has a flow augmentation target of 135,000 cfs for Steelhead. The April 1 to April 9 the minimum flow for Priest Rapids is the same as the Vernita Bar minimum for each year.
- **Brownlee:** drafts to 2059.0 ft (373.5 ksf) in July-August, 2051.5 ft (328.4 ksf) in September. In October, Brownlee operates to a variable target content without violating a minimum flow of 9700 cfs for IPC Fall Chinook operation. Brownlee will fill to full content of 491.7 ksf in Nov without violating minimum flow of 8500 cfs. In Dec-Apr, Brownlee operates to 8,700 cfs outflow unless a higher discharge is required to maintain flood control space. In Apr-Jun, Brownlee is to maintain full content of 491.7 ksf without violating a minimum flow of 8500 cfs.
- **Libby:** In years when the May-1 April-August volume forecast for The Dalles is less than 71.8 MAF (lowest 20<sup>th</sup> percentile), the project should attempt to operate along a computed straight line between June 30 content and a September 30 draft limit of 2439.0 ft. (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 ft (2280.3 ksf). However, due to the minimum flow for sturgeon and bull trout, which is summarized in the AER step documentation, the project often operates below this straight line. In years when the May 1 Libby forecast for the Apr-Aug period results in a bull trout minimum for July and August of 9,000 cfs, the minimum July 31 content will be 2360 ksf to assure the 9,000 cfs can be provided without drafting below elevation 2449 ft by the end of September. The Libby operation provides the sturgeon and bull trout flows, which may sometimes exceed the flood stage at Bonners Ferry. In the fall, Libby is operated with 4,800 cfs maximum outflow in October and 2000 ksf maximum content in November in order to leave more water for drafting for power purposes in December. Minimum flow requirements are in place for Bull Trout May 15 through September 30 and for Sturgeon May 1 through June 30.
- **Hungry Horse** is operated to the VARQ flood control in September through December at 3560.0 feet (1503.4 ksf), 3555.7 feet (1453.0 ksf), 3555.7 feet (1453.0 ksf), and 3549.2 ft (1377.4 ksf) respectively, unless the project is trying to meet the minimum flow requirement at Columbia Falls. 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 should not operate below the computed straight line between June 30 content and a September 30 draft limit of 3540.0 ft. (1275.0 ksf) during July and August to minimize occurrences of a second peak flow in the summer. In years when the July 1 January-July volume forecast for The Dalles is greater than or equal to 71.8 MAF (20<sup>th</sup> percentile), the project should not operate below the computed straight line between June 30 content and a September 30 draft limit of 3550.0 ft. (1386.7 ksf) during July and August to minimize occurrences of a second peak flow in the summer. The outflow at Hungry Horse is limited to maximum turbine capacity of 11,667 cfs and no spill is allowed unless required to maintain the required flood control space during the September-March period. Hungry Horse will also violate upper rule curve to keep its maximum outflow to 20 kcf or below. During the flow augmentation period (April-August), the outflow is limited to a maximum of 14,000 cfs so that the Montana dissolved gas standard of 110% will not be exceeded.
- **Albeni Falls** drafts to 2053 feet (146.1 ksf) by November 30 and maintains this elevation through April 30.
- **Grand Coulee** operates at elevation 1285 ft (2411.5 ksf) in September and between 1283 ft (2332.2 ksf) and 1288 ft (2531.9 ksf) in October. During the November through December periods, Coulee can not draft below limits of 1278 and 1270 feet (2139.8 ksf, and 1843.4 ksf) for Chum flow requirement and cannot fill above 1287 ft (2491.4 ksf). In January through March, Coulee can draft below the computed variable energy content curve (fish VECC) to meet chum flow targets. Coulee has a maximum elevation of 1287 ft (2491.4 ksf) in January and February. The draft limits

at Coulee for Priest Rapids and McNary flow targets are: 1220 ft (289.2 ksf) on April 15, 1225 ft (418.7 ksf) on April 30, 1240 ft (843.7 ksf) in May, and 1285 ft (2411.4 ksf) in June and July. In July and August 15, Coulee can not fill above 1288 ft (2532.4 ksf). When the July 1 April-August volume runoff at The Dalles is greater than 92 MAF, Grand Coulee is operated as low as 1280 feet (2215.5 ksf) in August and 1278 ft (2139.8 ksf) when the July 1 April-August volume runoff at The Dalles is 92 MAF or less to meet the McNary flow augmentation targets. The Bureau will perform maintenance on the spillway drumgates at least one year of every three years, at least two of every five years, and at least three of every seven years. For modeling, this maintenance requires a maximum Lake Roosevelt elevation of 1277.5 feet (2120.9 ksf) at the end of February (so as not to exceed the 1.5 ft/day draft limit in drafting to 1255 feet (1319.7 ksf) by March 15, and then elevation 1255 feet (1319.7 ksf) is held through April 30.

- **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 kcfs, the pumping is increased by the equivalent of 5 feet in August and the following year's March-May pumping is decreased. Additionally, the Washington Columbia River Water Management Program (WCRWMP) is included in the OPER step. The WCRWMP includes the following:
  - Grand Coulee Summer Draft
    - ◇ In years when the July 1 April-August volume forecast for The Dalles is less than 92 MAF (50th percentile), the project should not draft below an August 31 draft limit of 1278.0 ft. (2140.9 ksf).
    - ◇ In years when the July 1 April-August volume forecast for The Dalles is greater than 92MAF (50th percentile), the project should not draft below an August 31 draft limit of 1280.0 ft. (2216.3 ksf).
    - ◇ Also for years with less than 57,582 kaf (lower 5th percentile), release 132 Kaf from GCL for the Washington State's Columbia River Partnership (WSCRCP). 47 kaf is for fish flow enhancement, 25 kaf is for municipal used in Tri-Cities, of which about 60% may return promptly to the river in the McNary pool as treated municipal effluent, and 33 kaf would support irrigation in MCN and JDA.
    - ◇ And for years with greater than 57,582 kaf (lower 5th percentile) release 82 kaf from GCL for the WSCRCP. 30 kaf is for fish flow enhancement and 22 kaf is for municipal used in Tri-Cities, of which about 60% may return promptly to the river in the McNary pool as treated municipal effluent.
  - Columbia Basin Project Pumping Increase
    - ◇ In all water years, reduce GCL inflows to reflect a pumping increase of 30 kaf in July and August (244 cfs July 1 – August 31). Also account for the increased pumping load (~7 aMW July 1 – August 31).
  - McNary Inflow Reductions
    - ◇ In all water years, reduce McNary inflows to reflect an increase of 25 kaf to the Tri-Cities municipal water supply in July and August (81 cfs July 1 – August 31 assuming 60% effluent return).
    - ◇ In years with less than 57,582 kaf (lower 5th percentile), reduce McNary inflows to reflect 16.5 kaf increased irrigation support in July and August (134 cfs July 1 – August 31).
  - John Day Inflow Reductions
    - ◇ In years with less than 57,582 kaf (lower 5th percentile), reduce John Day inflows to reflect 16.5 kaf increased irrigation support in July and August (134 cfs July 1 – August 31).

- **Dworshak:** Minimum flow will be 1,300 cfs in all periods. From January through June, Dworshak operates on or near flood control. By July 31, it operates to the midpoint of the straight line drawn from the end of June reservoir content to the end of August flow augmentation draft limit of 497.0 ksf (1535 ft.). Operating to the July 31 point will have highest priority unless outflow would exceed 14,000 cfs. In August, draft to 497.0 ksf as a target with highest priority - to be ignored only if August outflow would exceed 14,000 cfs. Dworshak will be drafted in September without exceeding a maximum outflow of 7,650 cfs and the draft limit of 1520 ft (395.8 ksf). (7,650 cfs derived by assuming the project discharge is 14 kcfs in the first half of the month and 1,300 cfs in the second half of the month).
- **Bonneville:** The second powerhouse corner collector is assumed to be operated with 5,000 cfs April 10 through August 31. This is modeled as “other spill” in HYDSIM.
- **Juvenile Bypass Spill and Gas Caps:** See the following tables. Forecasts of less than 12.8 MAF April-June at Lower Granite are used to forecast when flows are less than 65kcfs. . Forecasts of 14.6 MAF April-June at Lower Granite are used to forecast when flows are greater than 80 kcfs.

<b>SPILL CRITERIA for 08RateCase10 Final Proposal Study</b>					
	<b>Spill</b>	<b>Min Turb</b>	<b>Days</b>	<b>Hour Ending</b>	<b>Notes</b>
<b>LWG</b>	20 kcfs	11.5 kcfs	Apr 3 - May 6,	All hours	see spring transport criteria
	20 kcfs		May 21 - Jun 4;		
	18 kcfs		Jun 5 - Aug 8		
<b>LGS</b>	30% flow	11.5 kcfs	Apr 5 - May 6, May 21 - Aug 11	All hours	
<b>LMN</b>	gas cap	11.5 kcfs	Apr 7 - May 6,	All hours	
	gas cap 17 kcfs		May 21 - Jun 4; Jun 5 - Aug 13		
<b>IHR</b>	35% flow	9.5 kcfs	Apr 7 - Jun 15	All hours	
	35% flow		Jun 16 - Aug 15	All hours	
<b>MCN</b>	40% flow	50 kcfs	April 10 - Jun 15	All hours	
	50% flow		Jun 16 - Aug 31	All hours	
<b>JDA</b>	30% flow	50 kcfs	Apr 10 - 19	All hours	
	30% vs 40% flow		Apr 20 - Jul 20	All hours	
	30% flow		Jul 21 - Aug 31	All hours	
<b>TDA</b>	40% flow	50 kcfs	Apr 10 - Aug 31	All hours	
<b>BON</b>	0	30 kcfs	March: 0 days	All hours	no March spill for Spring Creek
	100 kcfs		Apr 10 - Jun 15	All hours	5kcfs corner collector operation Apr -Aug 31
	85 kcfs day / gas cap night		Jun 16 - Jul 31	All hours. Day/night spill hours vary.	Jun1-30 day hrs are 0430-2130. Jul1-31 day hrs are 0430-2200.
	75 kcfs day / gas cap night		Aug 1 - Aug 31		Aug1-15 day hrs are 0500-2145. Aug16-31 day hrs are 0500-2030.

**Summary of spring spill decisions from the final 2008 BiOp.**

<b>Lower Granite Dam</b>				
	Apr1	Apr2	May	June*
Seasonal Average Flows < 65kcfs	no spill	no spill	no spill	spill Jun5-30
Seasonal Average Flows > 65kcfs	spill Apr3-15	spill Apr16-30	spill May1-31	spill Jun5-30
<b>Little Goose Dam</b>				
	Apr1	Apr2	May	June*
Seasonal Average Flows < 65kcfs	no spill	no spill	no spill	spill Jun5-30
Seasonal Average Flows > 65kcfs	spill Apr5-15	spill Apr16-30	spill May1-31	spill Jun5-30
<b>Lower Monumental Dam</b>				
	Apr1	Apr2	May	June*
Seasonal Average Flows < 65kcfs	no spill	no spill	no spill	spill Jun5-30
Seasonal Average Flows > 65kcfs	spill Apr7-15	spill Apr16-30	spill May1-31	spill Jun5-30

\* Summer spill starts June 5th on average based on fish passage criteria

- **Overgeneration Spill:** Spill up to TDG gas cap in the order listed below to avoid generation levels that exceed the secondary market limit.

	<b>120%</b>	<b>125%</b>	<b>130%</b>	<b>135%</b>
MCN:	138 kcfs	230 kcfs	310 kcfs	450 kcfs
TDA:	128 kcfs	250 kcfs	360 kcfs	600 kcfs
JDA:	94 kcfs	240 kcfs	450 kcfs	600 kcfs
BON:	96/114/138 kcfs <sup>1</sup>	150 kcfs	225 kcfs	270 kcfs
LWG:	40 kcfs	70 kcfs	90 kcfs	150 kcfs
LGS:	27 kcfs	80 kcfs	150 kcfs	250 kcfs
LMN:	23 kcfs	95 kcfs	180 kcfs	250 kcfs
IHR:	97 kcfs	125 kcfs	180 kcfs	240 kcfs
CHJ:	150 kcfs	200 kcfs	300 kcfs	450 kcfs
GCL <sup>2</sup> :	30 kcfs	75 kcfs	120 kcfs	170 kcfs
GCL <sup>3</sup> :	10 kcfs	20 kcfs	35 kcfs	55 kcfs

<sup>1</sup> 96 kcfs in all months except 114 kcfs in July and 138 kcfs in August and September.

<sup>2</sup> During all periods except May.

<sup>3</sup> During May, when GCL is more likely below elevation 1260, the spillway crest elevation, and the regulating outlets must be used to spill.

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